Network Adapter Cards

AT-2400 Series
AT-2450/AT-2451 Series
AT-2500/AT-2501 Series
AT-2700/AT-2701 Series
AT-2745/AT-2746 Series
AT-2915 Series
AT-2930 Series
AT-2970/AT-2971 Series

Installation Guide

BOOK II

FOR MICROSOFT WINDOWS FOR WORKGROUPS 3.11, MICROSOFT DOS CLIENT 3.0, NOVELL NETWARE 4.X, 5.X, AND 6.X, LINUX 2.2X AND 2.4X, AND BOOT ROM OPERATING SYSTEMS

Allied Telesyn

Simply connecting the IP world

Electrical Safety and Emission Statement

Standards: This product meets the following standards.

U.S. Federal Communications Commission

Radiated Energy

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

Note: Modifications or changes not expressly approved by the manufacturer or the FCC can void your right to operate this equipment.

Industry Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

RFI Emission   EN55022 Class A, EN61000-3-2, EN61000-3-3 ☞ 1

⚠ **Warning**: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. ☞ 2

Immunity   EN55024 ☞ 3

Electrical Safety   EN60950, UL 1950 (UL/cUL) ☞ 4

⚠ Laser   EN60825 ☞ 5

Important: Appendix B contains translated safety statements for installing this equipment. When you see the ☞, go to Appendix B for the translated safety statement in your language.

Wichtig: Anhang B enthält übersetzte Sicherheitshinweise für die Installation dieses Geräts. Wenn Sie ☞ sehen, schlagen Sie in Anhang B den übersetzten Sicherheitshinweis in Ihrer Sprache nach.

Vigtigt: Tillæg B indeholder oversatte sikkerhedsadvarsler, der vedrører installation af dette udstyr. Når De ser symbolet ☞, skal De slå op i tillæg B og finde de oversatte sikkerhedsadvarsler i Deres eget sprog.

Belangrijk: Appendix B bevat vertaalde veiligheidsopmerkingen voor het installeren van deze apparatuur. Wanneer u de ☞ ziet, raadpleeg Appendix B voor vertaalde veiligheidsinstructies in uw taal.

Important: L'annexe B contient les instructions de sécurité relatives à l'installation de cet équipement. Lorsque vous voyez le symbole ☞, reportez-vous à l'annexe B pour consulter la traduction de ces instructions dans votre langue.

Tärkeää: Liite B sisältää tämän laitteen asentamiseen liittyvät käännetyt turvaohjeet. Kun näet ☞-symbolin, katso käännettyä turvaohjetta liitteestä B.

Importante: l'Appendice B contiene avvisi di sicurezza tradotti per l'installazione di questa apparecchiatura. Il simbolo ☞, indica di consultare l'Appendice B per l'avviso di sicurezza nella propria lingua.

Viktig: Tillegg B inneholder oversatt sikkerhetsinformasjon for installering av dette utstyret. Når du ser ☞, åpner du til Tillegg B for å finne den oversatte sikkerhetsinformasjonen på ønsket språk.

Importante: O Anexo B contém advertências de segurança traduzidas para instalar este equipamento. Quando vir o símbolo ☞, leia a advertência de segurança traduzida no seu idioma no Anexo B.

Importante: El Apéndice B contiene mensajes de seguridad traducidos para la instalación de este equipo. Cuando vea el símbolo ☞, vaya al Apéndice B para ver el mensaje de seguridad traducido a su idioma.

Obs! Bilaga B innehåller översatta säkerhetsmeddelanden avseende installationen av denna utrustning. När du ser ☞, skall du gå till Bilaga B för att läsa det översatta säkerhetsmeddelandet på ditt språk.

Table of Contents

Preface

This installation guide contains instructions on how to install an Allied Telesyn adapter card in your computer and how to load the adapter driver. This guide also explains the AT-Setup program which simplifies the task of installing or updating an adapter driver.

Purpose of this Guide

This guide is intended for anyone who needs to install or update a network adapter card or driver on their PC-compatible system.

How This Guide is Organized

This guide contains the following chapters and appendix:

Chapter 1, Installing the Network Adapter Card, describes how to install an adapter card into your computer.

Chapter 2, Diagnostics, contains procedures for running and using the diagnostics program for your Allied Telesyn adapter.

Chapter 3, Microsoft DOS Client 3.0, contains procedures for manually installing a network adapter driver on a PC-compatible system running Microsoft DOS Client 3.0.

Chapter 4, Microsoft Windows for Workgroups, contains the procedures for installing and removing a network adapter driver on a PC-compatible running Windows for Workgroups 3.11.

Chapter 5, Novell Netware, contains the procedures for installing an adapter driver on a Novell Netware system.

Chapter 6, Linux, contains the procedures for installing an adapter driver on a Linux system.

Chapter 7, BootROM, contains the procedures for installing and configuring a BootROM on an Allied Telesyn Network Adapter Card.

Appendix A, Translated Safety and Emission Information, contains multi-language translations of the safety and emission statements in this guide.

Where to Find Related Guides

The Allied Telesyn web site at www.alliedtelesyn.com offers you an easy way to access the most recent documentation, software updates, and technical information for all of our products. The documents provided on our web site are available as PDF files.

Document Conventions

This guide uses several conventions that you should become familiar with before you begin to install the product.

Note
Notes provide additional information.

Warning
Warnings inform you that performing or omitting a specific action may result in bodily injury.

Caution
Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

Contacting Allied Telesyn Technical Support

You can contact Allied Teleysn technical support online or by telephone or e-mail.

Online Support

You can request technical support online by accessing the Knowledge Base at http://kb.alliedtelesyn.com. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

Telephone Support

For technical support by phone, contact Allied Telesyn at one of the following locations:

Americas
United States, Canada, Mexico, Central America, South America
Tel: 1 (800) 428-4835

Germany
Germany, Switzerland, Austria, Eastern Europe
Tel: (+49) 30-435-900-126

Asia
Singapore, Taiwan, Thailand, Malaysia, Indonesia, Korea, Philippines, China, India, Hong Kong
Tel: (+65) 3815-612

Italy
Italy, Spain, Portugal, Greece, Turkey, Israel
Tel: (+39) 02-41-30-41

Australia
Australia, New Zealand
Tel: 1 (800) 000-880

Japan
Tel: (+81) 3-3443-5640

France
France, Belgium, Luxembourg, The Netherlands, Middle East, Africa
Tel: (+33) 1-60-92-15-25

United Kingdom
United Kingdom, Denmark, Norway, Sweden, Finland, Iceland
Tel: (+44) 1-235-442560

E-mail Support

Latin America, Mexico, Puerto Rico, Caribbean, and Virgin Islands
latin_america@alliedtelesyn.com

United Kingdom, Sweden, Norway, Denmark, and Finland
support_europe@alliedtelesyn.com

Returning Products

Products for return or repair must first be assigned a Return Materials Authorization (RMA) number. A product sent to Allied Telesyn without a RMA number will be returned to the sender at the sender's expense.

To obtain an RMA number, contact technical support at one of the following locations:

❏ **United States and Canada**
Toll-free: 1-800-762-1664
Fax: 1-425-806-1050

❏ **Europe, Africa, and the Middle East**
Tel: +44-1793-501401
Fax: +44-1793-431099

❏ **Latin America, the Caribbean, and Virgin Islands**
Tel: International code + 425-481-3852
Fax: International code + 425-481-3895

❏ **Puerto Rico**
Toll-free: 1-800-424-5012, ext 3852
or 1-800-424-4284, ext 3852

❏ **Mexico**
Toll-free: 800-424-5012, ext 3852
Fax: International code + 425-481-3895

❏ **Asia and Southeast Asia**
Tel: +65 381-5612
Fax: +65 383-3830

❏ **Australia**
Toll-free: 1-800-000-880
Fax: 2-9438-4966

❏ **New Zealand**
Toll-free: 0800-45-5782

For Sales or Corporate Information

You can contact Allied Telesyn for sales or corporate information at the location listed below:

Allied Telesyn, Inc.
19800 North Creek Parkway, Suite 200
Bothell, WA 98011
Tel: 1 (425) 487-8880
Fax: 1 (425) 489-9191

Tell Us What You Think

If you have any comments or suggestions on how we might improve this or other Allied Telesyn documents, please fill out the General Enquiry Form online. This form can be accessed by selecting **Contact Us** from www.alliedtelesyn.com.

Chapter 1
Installing the Network Adapter Card

This chapter contains instructions for installing the following Allied Telesyn network adapter cards:

- ❑ AT-2400 Series
- ❑ AT-2450/AT-2451 Series
- ❑ AT-2500/AT-2501 Series
- ❑ AT-2700/AT-2701 Series
- ❑ AT-2745/AT-2746 Series
- ❑ AT-2915 Series
- ❑ AT-2930 Series
- ❑ AT-2970/AT-2971 Series

Verifying Package Contents

Make sure the following items are included in your package. If any item is missing or damaged, contact your Allied Telesyn sales representative for assistance.

- ❑ Allied Telesyn Network Adapter Card
- ❑ CardAssistant CD
- ❑ Wake-on-LAN cable (AT-2450, AT-2451, AT-2500, AT-2501, AT-2700, and AT-2701 Series only)

Reviewing Safety Precautions

Please review the following safety precautions before you install the network adapter card.

⚠ **Warning**
This is a "Class 1 LED product". ✍ 6

⚠ **Warning**
Do not stare into the laser beam. (AT-2450FT, AT-2450FL, AT-2451FTX, AT-2700FX, AT-2701, AT-2970, AT-2971SX Series only) ✍ 7

⚠ **Warning**
Lightning Danger: Do not work on this equipment or cables during periods of lightning activity. ✍ 8

⚠ **Caution**
Operating Temperature: This product is designed for a maximum ambient temperature of 40 degrees C. ✍ 9

⚠ **Caution**
All Countries: Install this product in accordance with local and National Electric Codes. ✍ 10

Installing a Network Adapter Card

This section explains how to install a network adapter card in most PC-compatible computers.

To install the adapter card, perform the following procedure:

1.   Shutdown your PC and disconnect the power cord from the outlet.

2.   Remove the PC's cover by removing the screws from the chassis and gently sliding off the cover. See Figure 1.
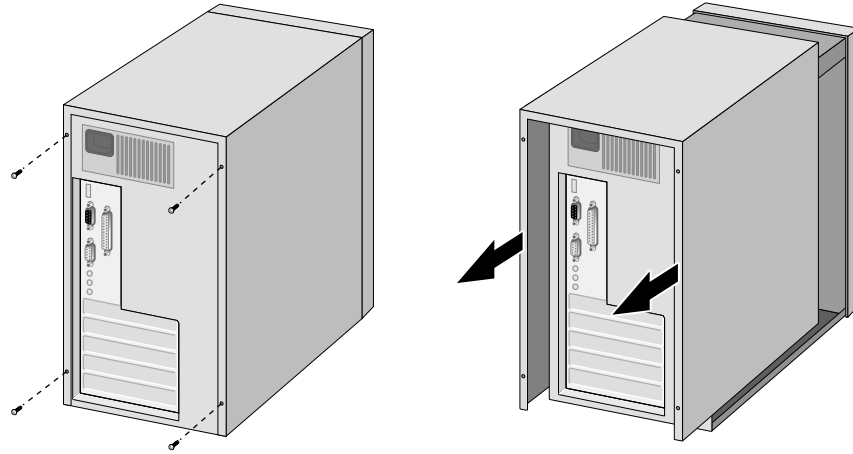
Figure 1 Removing the PC Cover

3.   Select an empty, non-shared PCI slot and remove the faceplate. Keep the faceplate in a safe place. You may need it for future use. See Figure 2.
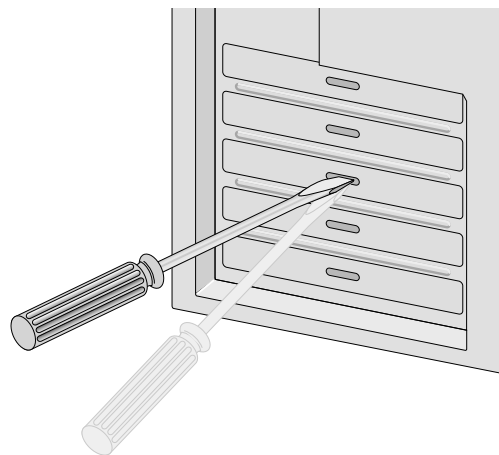
Figure 2 Removing the Faceplate From PCI Slot

Note
If you cannot locate or know how to find an PCI slot, refer to the documentation that came with your PC.

4. Remove the network adapter card from the shipping package and store the packaging material in a safe location.

> ⚠ **Caution**
> Wear a grounding device and observe electrostatic discharge precautions when installing the network adapter card in a PC. Failure to observe this caution could result in damage to the adapter card.

5. Gently insert the network adapter card into the PCI slot. Make sure the card is securely seated.
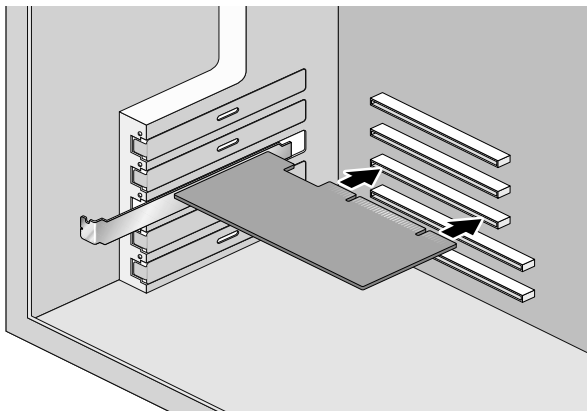
Figure 3 Inserting the Network Adapter Card

6. Secure the network adapter card to the chassis with a Phillips-head screw, not provided.
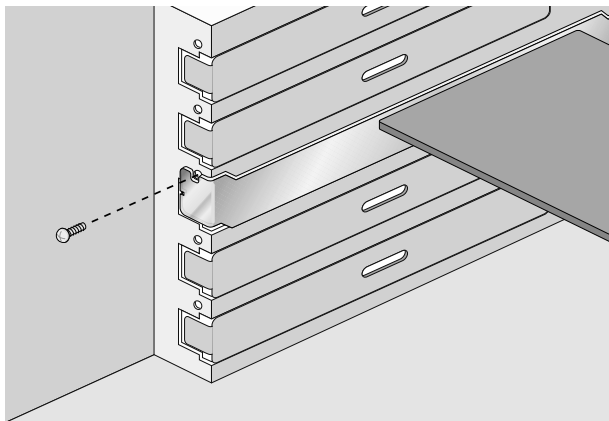
Figure 4 Securing the Adapter Card

7. For the AT-2450, AT-2500, or AT-2700 Series adapters, to use the adapter card's Wake-on-LAN feature in your computer using an Advanced Configuration and Power Interface (ACPI), you must connect the Wake-on-LAN cable to the Wake-on-LAN connector on the adapter card and to the Wake-on-LAN connector on the motherboard of the computer. For the location of the Wake-on-LAN connector on the motherboard, refer to the documentation that came with your computer.

   The AT-2501, AT-2451F, AT-2701, AT-2915, AT-2930, AT-2970, and AT-2971 do not require the optional external Wake-on-LAN cable. These devices are PCI 2.2 compliant and can use the PCI 2.2 BUS for Wake-on-LAN features.

8. Replace the PC's cover and secure it with the screws removed in Step 2.

9. Connect the adapter card to the network by connecting the appropriate data cable.

10. Power ON the PC.

You are now ready to install the network adapter driver. Refer to the appropriate chapter for your operating system.

Chapter 2
Diagnostics

This chapter contains the following procedures:

Running Diagnostics

For the AT-24xx, AT-25xx, AT-27xx, AT-2915, and AT-2930 Series

The diagnostics utulity is useful for setting the Speed/Duplex and BootROM. You can also insure proper operation of the network adapter card. This utility is located on the CardAssistant CD or the driver installation disk.

Speed/Duplex

This option allows the user to configure speed and duplex to one of the available options. The options for speed and duplex vary depending on adapter model

BootROM Port

The BootROM port setting is only for multi-port AT-2450, AT-2700, and AT-2745 Series PCI Ethernet Adapter Cards without integrated Manage BootROM, specifically the AT-2450FTX, AT-2700FTX, and AT-2745FX. When using one of these three adapters in a BootROM configuration, it may be necessary to change these settings. For any other AT-2450 or AT-2700 Series PCI Ethernet Adapter Card the BootROM Port setting should not be changed.

BootROM

This feature is only available for the AT-2500 and AT-2501TX Series Adapters. Using the Diagnostics program (diag25.exe) set BootROM to enable.

Diagnostics

There are two diagnostic utilities, Card Test and Network Test.

❑ Card Test

This test checks several parts and functions of the adapter card to ensure proper operation of the adapter card.

❑ Network test

This test allows the user to send and receive raw packets without a driver loaded to check the card functionality.

To run diagnostics, perform the following procedure:

> **Note**
> Diagnostics is a DOS based program and must be run in true DOS, not in a DOS shell within Windows.

1. If ON, power OFF your computer and reboot into DOS mode.

2. At the DOS prompt and without the drivers loaded, type **diag.exe**.

    The location of the diagnostic files on the CardAssistant CD are:

Adapter Card	Diagnostic Location
AT-2400 Series	\drivers\at2400\diag\diag24.exe
AT-2500, AT-2501 Series	\drivers\at2500\diag\diag25.exe
AT-2450, AT-2700, AT-2701, AT-2745, AT-2746 Series	\drivers\at2701\diag\diag.exe
AT-2915, AT-2930 Series	\drivers\at29xx\diag\diag29.exe

    For example, if you want to run diagnostics for an AT-2500 Series adapater card and the CD is mapped to drive D, you would enter:

    D:\drivers\at2500\diag\diag25.exe

    If you are using a driver installation disk, the diagnostic files are stored in the root directory on the disk.

For the AT-2970 and AT-2971 Series

Diagnostics Program

The network adapter can be tested with the supplied diagnostics program (running DOS). The diagnostics program run offline, for example, normal operation of the network adapter can not be maintained. During testing the link of the tested port will be down, for examle, no data can be transferred. The following test are available:

❑ Simple test without loopback

    This test covers all components but not the port (socket including components for transmitting/receiving the data signals).

❑ Comprehensive port test with loopback

    All componentes are tested, including the port.

Note
The tests do not run in a Windows DOS box.

The location of the diagnostic file on the CardAssistant CD is:

Adapter Card	Driver Location
AT-2970, AT-2971 Series	\drivers\at2971\diag\diag2971.exe

Loopback Test for Fiber Adapters

To perform the loopback test on fiber adapters, you will need a loopback connector. Refer to Figure 5 below.
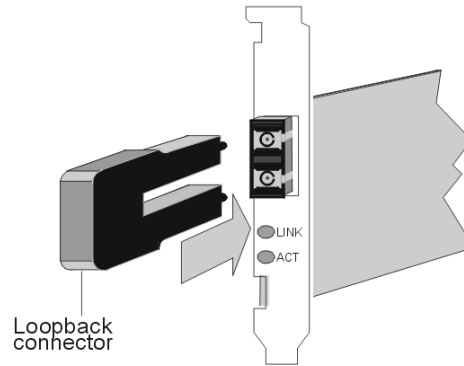
Figure 5 Setup for Loopback Testing

Be sure to observe the Translated Safety and Emission Information on page 75.

To test the adapter, perform the following procedure:

1. Power OFF your computer.

2. If the computer is still connected to the network, unplug the data cable from the network adapter's port.

3. Connect the network adapter as follows:

   ❑ For the simple test, insert the protective plugs into the ports.

   ❑ For the loopback test, insert the loopback connector into the port.

4. Boot to DOS. Wait until the operating system is loaded and the DOS prompt is displayed.

5. Insert the CardAssistant CD into the CD-ROM drive.

6. Go to the product directory and type **diag2971**.

7. Press **<Enter>**.

8. From the Main Menu of the diagnostics program, select one of the following:

    ❑ **DIAGNOSTICS** for the simple test (no loopback)

    ❑ **LOOPB. WRAP PLUG** for the loopback test

    The various components will now be tested. This will take between one and two minutes. If the test was successful, a window similar to Figure 6 will be displayed.

Figure 6 Diagnostic Window (1 of 5)

You can follow the progress of the test in the right-hand window. Each test is displayed as it is being performed (e.g. Board Register Check).

If the test is successful, the word **PASSED** is displayed at the end of the line and the next test is started. If there is a problem, the word **Failed** is displayed.

If errors are reported, follow the instructions that are provided.

9. Check the configuration and if necessary, repeat the test (see Failure of a Test).

10. To continue testing, press any key.

11. To quit the diagnostics program, select **Exit** from the Main Menu.

12. Remove the loopback connector from the port.

13. Re-connect the data cables to the network port.

> ⚠ **Caution**
> For safety reasons, if the adapter is not connected immediately to the data network, insert the protective plug. Otherwise laser light may be emitted. Inserting the protective plug is also protects the port against dust and dirt.

Repeater Test for Copper Adapters

For the AT-2970 and AT-2971 Series adapters the test via wrap plug is not available. However, loopback testing may be carried out by connecting the adapter to another adapter installed in a second computer running in repeater mode (further known as the repeater computer). The computer in which the adapter is installed, which is to be tested, is called test computer.

To test the copper adapter, perform the following procedure:

1. Install a copper adapter in the repeater computer.

2. Boot the repeater computer to DOS.

   Wait until the operating system is loaded and the DOS prompt is displayed.

3. Insert the CardAssistant CD into the CD-ROM drive.

4. Go to the product directory and type **diag2971**.

5. Press **<Enter>**.

6. From the Main Menu of the diagnostics program, select **Repeater Mode**.

7. Select the port which is to be tested, for example, **A** (for single link adapters, only A is available).

8. Press **<Enter>**.

   The window Repeater Mode Port A is displayed.

9. Install a copper adapter in the test computer.

10. Connect the adapter in the repeater computer to the adapter in the test computer. Use a category 5 cable with RJ-45 plugs.

11. Boot the test computer to DOS.

    Wait until the operating system is loaded and the DOS prompt is displayed.

12. Insert the CardAssitant CD into the CD-ROM drive.

13. Go to the product directory and type **diag2971**.

14. Press **<Enter>**.

15. From the Main Menu of the diagnostics program, select **LOOPB.WRAP PLUG**.

16. Press **<Enter>**.

    When the test was successful, the message **All tests passed successfully** is dis-played.

    When the test fails, the message **failed** is displayed. The further procedure is described in section **Failure of a Test**.

17. Press any key to continue.

18. On the test computer, select **Exit** to quit the diagnostics program.

19. On the repeater computer, select **Exit** to quit the diagnostics program.

Failure of a Test

```
Diagnostics v6.02 (20030227)        Free Mem.  62 kB      00:00:03:45
Allied Telesyn AT-2971SX/SC-001
Output none                         VDS not installed



                    Board register check   ...........    passed
                    On board timer check   ...........    passed
                    On board memory check  ...........    passed
                    DMA engine check       ...........    passed
                    LAN Interface check    ...........    passed
                    Bus throughput tests              failed




            Please check that a wrap plug is installed
                    Press any key to continue
```

Figure 7 Diagonstic Window (2 of 5)

For a test to be completed successfully, each of the following conditions must be met:

❏   The network adapter operates correctly.

❏   The network adapter is cabled correctly for the test or is equipped with the correct connectors.

❏   The network adapter has been installed correctly in the computer.

The **failed** message does not necessarily imply that the network adapter is faulty.

If a **failed** message is displayed, perform the following procedure:

1.   Follow the instructions that are displayed in the window below the list of tests.

2.   Make sure that the adapter is inserted correctly and the ports are connected properly (connectors are firmly seated, the correct end of the cable is connected).

If it is necessary to install the network adapter again, perform the following procedure:

1. Switch OFF the computer. Be sure to observe the Translated Safety and Emission Information on page 75.

2. Remove the computer cover. Refer to the manual that came with your computer for instructions or refer to Installing the Network Adapter Card on page 17.

3. Make sure the network adapter is properly seated in the PCI bus slot on the motherboard. If not, do not remove the network adapter completely but raise it sufficiently to withdraw it from the PCI bus slot.

4. Carefully realign the bus connector on the network adapter with the PCI bus slot.

5. Press the network adapter until it is firmly seated in the slot.

6. Repeat to Step 6 of the Loopback Test for Fiber Adapters on page 26 and to Step 4 of the Repeater Test for Copper Adapters on page 28.

7. Repeat the test.

8. To quit the diagnostics program, select **EXIT** in the Main Menu.

9. If necessary, remove the loopback connector from the port.

10. Re-connect the data cables to the network ports.

Additional Functions of the Diagnostics Program

Checking Other Displays and Data   In addition to performing the three network adapter tests, the diagnostics program can also read out network adapter-specific data that may be useful for pinpointing the causes of failure.

You can:

- ❑ read sensor data

- ❑ read configuration data

- ❑ read and write VPD data

- ❑ read and write Flash EPROM data

Main Program   To start the main program, proceed as follows:

1.   Boot to DOS and wait for the prompt.

2.   Insert the installation CD-ROM into the CD-ROM drive of the computer in which the network adapter is installed.

3.   Type the letter of your CD-ROM drive (for example, **D:**)

4.   Go to the appropriate product directory and type **diag2971**.

5.   Press **<Enter>**.

The Main Menu as shown in Figure 8 is displayed:

```
Diagnostics v6.02 (20030227)        Free Mem.  62 kB      00:00:04:58
Allied Telesyn AT-2971SX/SC-001
Output none                         VDS not installed


    ┌─────────────────────────┐
    │      Main menu          │
    ├─────────────────────────┤
    │ Exit                    │
    │ Diagnostics             │
    │ Loopb. Wrap Plug        │
    │ Repeater Mode           │
    │ Show Configuration      │
    │ Show Sensors            │
    │ Flash PROM ...          │
    │ VPD Data ...            │
    └─────────────────────────┘
```
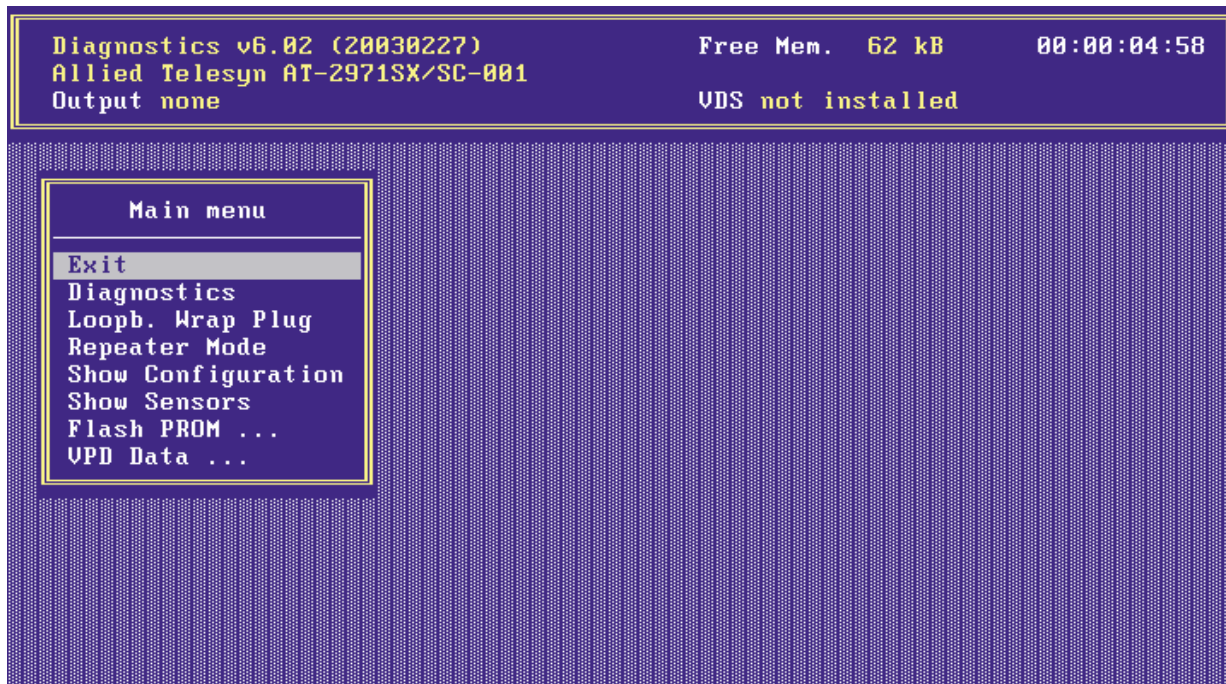
Figure 8 Diagnostic Window (3 of 5)

6.   Select the appropriate item from the menu.

7.   To quit the program, select **EXIT** in the Main Menu.

       This option is automatically offered for selection if you did not select a menu item previously.

Reading Sensor Data

To read sensor data, perform the following procedure:

1.   Start the main program. Refer to Main Program on page 32 for instructions.

2.   Select **Show Sensors** in the Main Menu. A separate window will be displayed for the following sensor data:

   ❑   Temperature of the board

   ❑   Voltage on the PCI card

   ❑   Voltage on the PCI I/O lines

   ❑   Other supply voltages

   In the Main Menu, Show Sensors changes to Hide Sensors.

3.   You can close the window by selecting **Hide Sensors** from the Main Menu.

Other windows may be opened while this window is still open, for example, the window displaying the configuration data.

Reading Configuration Data

To read configuration data, perform the following procedure:

1.   Start the main program. Refer to Main Program on page 32 for instructions.

2.   Select SHOW CONFIGURATION in the main menu. A separate window will be displayed showing:

❑   Device code (Device)

❑   Various vendor codes (Vendor)

❑   Interrupt no. (IRQ)

❑   Cache Line Size (CLS)

❑   Latency (Lat.)

❑   RAM size (RAM)

❑   PCI slot index and size (Slot and Slot size)

❑   PCI bus clock (clk)

❑   MAC address (MAC Addr)

❑   Port type (PMD-Type)

❑   Connector (connector)

❑   Hardware revision (HW Rev)

❑   Chip ID (Chip Id)

In the Main Menu, Show Configuration changes to Hide Configuration.

3.   You can close the window by selecting **Hide Configuration** from the Main Menu.

Other windows may be displayed while this window is still open,for example, a window shown in Figure 9 will be displayed.

```
Diagnostics v6.02 (20030227)        Free Mem.  62 kB     00:00:06:33
Allied Telesyn AT-2971SX/SC-001
Output none                         VDS not installed


   Main menu

  Exit
  Diagnostics
  Loopb. Wrap Plug
  Repeater Mode                    DEVICE 4320   VENDOR 1148
  Hide Configuration               SUBSYS 2973   SUBVEN 1259
  Show Sensors                     IOP D800      MEM FF8FC000
  Flash PROM ...                   IRQ 11  CLS  8  Lat. 32
  VPD Data ...                     RAM 128kB  FPROM inact.
                                   Slot 1  Slot Size 32 bit
                                   CLK 33 MHz  Ports 1
                                   MAC-Addr    003084f3ae09
                                   PMD-Type    1000Base-SX
                                   Connector   Duplex-SC
                                   HW-Rev 10  Chip-Id B0
```

Figure 9 Diagnostic Window (4 of 5)

Reading VPD Data

To read VPD data (Vital Product Data), perform the following procedure:

1. Start the main program. Refer to <u>Main Program</u> on page 32 for instructions.

2. Select **VPD Data** from the Main Menu. A submenu with the following options will be displayed:

   ❑ EXIT (return to the Main Menu)

   ❑ DISPLAY VPD DATA

   ❑ CLEAR ERROR LOGS

   ❑ ADD/MODIFY VPD DATA (you can enter user-defined data and keywords here)

   ❑ DELETE VPD KEYWORDS

```
Diagnostics v6.02 (20030227)          Free Mem.  62 kB      00:00:07:52
Allied Telesyn AT-2971SX/SC-001
Output none                           VDS not installed


              Display VPD Data: <Enter> to exit

 Product Name:
  Allied Telesyn AT-2971SX/SC-001

 VPD Read Only Area:        21 bytes unused
  Board Part Number (PN):  AT-2971SX/SC-001
  Engineering Level (EC):  Rev. 1.0
  Manufacturer ID   (MN):  SysKonnect
  Serial Number     (SN):  CSI10L3F3AE09
  Extended Capabil. (CP):  0x01, 0x10, 0x03cc

 VPD Read/Write Area:       121 bytes available
  Asset Tag ID      (YA):  < Keyword not present >
  First Error Log   (VF):  < Keyword not present >
  Last Error Log    (VL):  < Keyword not present >
```

Figure 10 Diagnostic Window (5 of 5)

3.   Select the desired option or return to the Main Menu by selecting **Exit** (default option).

Chapter 3
Microsoft DOS Client 3.0

This chapter contains the following procedures for the AT-24xx, AT-25xx, and AT-2700 Series adapters:

❑ Installing a Network Adapter Driver on page 38

❑ Removing a Network Adapter Driver on page 40

Installing a Network Adapter Driver

This section contains the procedure for installing a network adapter driver on a Microsoft DOS Client 3.0 system.

> **Note**
> Before starting with the installation procedure, make sure that the adapter is properly configured using setup25.EXE provided on the CardAssistant CD. If necessary, match the speed and duplex settings of the network card with the hub with which it is connected.

To install the network adapter driver, perform the following procedure:

1. Shut down Microsoft DOS Client 3.0 and power OFF the computer.

2. Install the network adapter card in the compute. Refer to the **Network Adapter Card Installation Guide - Book I** and to your computer's installation manual.

3. Power ON the computer.

4. Start the setup utility provided by Microsoft to install and configure DOS Client v3.0.

5. At the Welcome screen, press **Enter**.

6. Choose the destination directory for the client files and press **Return**.

7. When prompted for the network adapter, choose **Network adapter not shown on list below . . .**

   A prompt is displayed asking you to insert the OEM driver disk.

8. Insert the CardAssistant CD or the driver installation disk into the appropriate drive.

9. Type in the driver letter and path to the NDIS 2.0 driver and press **Return**.

   If you are using the CD, the location of the adapter driver will differ depending on the type of adapter. Below are the driver locations on the CardAssistant CD:

Adapter Card	Driver Location
AT-2400 Series	\drivers\at2400\msclient
AT-2500/AT-2501 Series	\drivers\at2500\msclient

Adapter Card	Driver Location
AT-2450, AT-2700 Series	\drivers\at2701\msclient

If you are using a driver installation disk, the driver location is: **\msclient**.

For example, if you are using the CardAssistant CD and the CD driver is mapped to drive D and you are installing an AT-2500 Series adapter, you would enter **D:\drivers\at2500\msclient.**

10. Once you have entered the drive letter and path to the adapter driver and pressed **Return**.

    The next screen will display the Allied Telesyn AT-250x PCI Ethernet Adapter.

11. Press **Return** to select the driver and proceed with the installation according to the Microsoft documentation.

Sample Configuration

```
[network.setup25]
version=0x3110
netcard=ATI$a2500,1,ATI$a2500,1
transport=tcpip,TCPIP
lana0=ATI$a2500,1,tcpip
```

Removing a Network Adapter Driver

This section contains the procedure for removing an adapter driver from a system running Microsoft Client 3.0.

To remove an adapter driver, perform the following procedure:

1. Start the Microsoft setup utility.

2. Select **Change Network Configuration**.

3. Select the network adapter whose driver you want removed from the system.

4. Click **Remove**.

Chapter 4
Microsoft Windows for Workgroups

This chapter contains procedures the following procedures for the AT-24xx, AT-25xx, AT-2700 Series adapters:

❑ Installing a Network Adapter Driver on page 42

❑ Removing a Network Adapter Driver on page 48

Installing a Network Adapter Driver

This section contains the instructions for manually installing a network adapter driver on a PC running Windows for Workgroups 3.11.

Installing NDIS3, NDIS2, ODI Drivers

1. Power OFF the computer.

2. Install the network adapter card. Refer to the **Network Adapter Card Installation Guide - Book I** and the documentation that came with your computer.

3. Power ON the computer.

4. From the Network group under Program Manager, choose **Network Setup**.

5. Select **Networks**.

6. Verify that **Install Microsoft Windows Network** is selected, then select **OK**.

7. Select **Sharing**.

8. Select whether to allow file and/or printer sharing with other users.

9. Select **Drivers**.

10. Select **Add Adapter**.

11. Select **Unlisted or Updated Network Adapter**, then click **OK**.

12. Insert the CardAssistant CD into the CD drive or a Driver Installation Disk into a floppy drive.

13. In the text box of the Install Driver dialog box, enter the drive letter and path to the driver files and click **OK**.

    If you are using the CD, the location of the appropriate driver will differ depending on the type of adapter. Below are the driver locations on the CardAssistant CD:

Adapter Card	Location
AT-2400 Series	\drivers\at2400
AT-2500/AT-2501 Series	\drivers\at2500
AT-2450 Series, AT-2700 Series	\drivers\at2701\wfw

If you are using a Driver Installation Disk, the driver location is the root (\) directory.

14. In the Network Adapters list of the Unlisted or Updated Network Adapter dialog box, verify that **Allied Telesyn PCI Ethernet Adapter** is highlighted, then click **OK**.

15. In the Network Drivers dialog box, verify that Allied Telesyn PCI Ethernet Adapter and its default protocols, Microsoft NetBEUI and IPX/SPX Compatible Transport with NetBIOS, appear in the Network Drivers list, then click **Close**.

16. In the Network Setup dialog box, click **OK**.

17. If prompted, insert the required Windows for Workgroups diskette(s) into your floppy drive and click **OK**.

Note
Windows for Workgroups occasionally loses its place at this point; if you get a message from Windows that it cannot find a file, try inserting Windows for Workgroups installation diskettes 7 and 8.

---

18. If prompted, reinsert the CardAssistant CD or Driver Installation Disk into the appropriate drive.

19. In the text box of the Install Driver dialog box, click **OK**.

20. From the Windows Setup dialog box, select **Restart Computer**.

Sample PROTOCOL.INI File

```
[network.setup]
version=0x3110
netcard=ms$a2500,1,MS$a2500,3
transport=ms$nwlinknb,NWLINK
transport=ms$ndishlp,MS$NDISHLP
transport=ms$netbeui,NETBEUI
lana0=ms$a2500,1,ms$netbeui
lana1=ms$a2500,1,ms$nwlinknb
lana2=ms$a2500,1,ms$ndishlp

[protman]
DriverName=PROTMAN$
PRIORITY=MS$NDISHLP

[NWLINK]
BINDINGS=MS$a2500

[MS$NDISHLP]
DriverName=ndishlp$
BINDINGS=MS$a2500

[NETBEUI]
DriverName=netbeui$
SESSIONS=10
NCBS=12
BINDINGS=MS$a2500
LANABASE=0

[MS$a2500]
DriverName=a2500$

[a2500]
Adapters=MS$a2500
```

Note
These are the default values for installation. If you are adding any TCP/IP software, this configuration will satisfy the NDIS 2.0 requirements of TCP/IP systems.

**NetWareIPXODI
Support for
NetWare 3.x**

1. Create a new directory on your local hard drive (e.g.; C:\ATINET).

2. Copy the contents of the DOSODI directory on the CardAssistant CD or the Driver Installation Disk to the directory you created.

   If you are using the CardAssistant CD, the location of the appropriate driver will differ depending on the type of adapter. Below are the driver locations on the CardAssistant CD:

Adapter Card	Location
AT-2400 Series	\drivers\at2400\Dosodi
AT-2500/AT-2501 Series	\drivers\at2500\Dosodi
AT-2450 Series, AT-2700 Series	\drivers\at2701\Dosodi

   If you are using a driver installation diskette, the driver location is **\Dosodi**.

3. Verify that the ODI drivers for the AT-2500/AT-2501 Ethernet Adapter Card are NOT loaded before setting up Windows for Workgroups.

4. Start Windows.

5. Choose **Network Setup** from the Network group.

6. Select **Networks**.

7. Select **Install Microsoft Windows Network**, then **Other**.

8. Select **Novell NetWare (Workstation Shell 3.X)**, then **OK**.

9. Select **IPXODI.COM and LSL.COM (recommended)**, then **OK**.

10. Verify that **ATI AT-xxxx[ODI/NDIS2]** and its default protocols, **Microsoft NetBEUI and IPX/SPX Compatible Transport with NetBIOS**, appear in the Network Drivers list, then **OK**.

11. When asked if you want to modify the net.cfg file, you can enter the path to the directory created earlier for your ODI files (e.g.;C:\ATINET). After you make your changes, or if you do not want to make changes, click **OK**.

12. From the Windows Setup dialog box, select **Continue**.

13. Edit the Autoexec.bat file by inserting the following file references before C:\WINDOWS\odihlp.exe:

```
c:\ net\lsl
c:\net\a2500 (atnic,a2400)

c:\net\ipxodi
c:\net\netx
```

14. Exit Windows and re-boot your PC by powering OFF then ON.

NetWare IPXODI Support For NetWare 4.x

1. Verify that the ODI drivers for the AT-2500/AT-2501 Ethernet Adapter Card are NOT loaded before setting up Windows for Workgroups.

2. From the DOS command line, install the NetWare DOS/Windows Client software. Select **Yes** to install Windows support and then enter the path to your Windows directory, for example, C:\WINDOWS

3. Start Windows.

4. Select **Network Setup** from the Network group.

5. select **Networks**.

6. Select **Install Microsoft Windows Network**, then select **Other**.

7. From the Other drop down list, select **Novell NetWare (Workstation Shell 4.0 and above)** and click **OK**.

8. Select **IPXODI.COM and LSL.COM (recommended)**, then **OK**.

9. In the Network Drivers dialog box, verify that **ATI AT-xxxx [ODI/NDIS2]** and its default protocols, **Microsoft NetBEUI** and **IPX/SPX Compatible Transport with NetBIOS**, appear in the Network Drivers lis and then click **OK**.

10. From the Windows Setup dialog box, select **Restart Computer**.

    Installing Novell NetWare 3.x and 4.x support adds `DEVICE=C:\WINDOWS\IFSHLP.SYS` to your CONFIG.SYS file and `C:\WINDOWS\ODIHLP.EXE to your` AUTOEXEC.BAT file.

    Note
    The sample AUTOEXEC.BAT shows VLM.EXE being used instead of NETX.EXE. VLMs are required for NetWare 4.x but may be an alternative to NETX with NetWare 2.x and 3.x.

Sample NET.CFG and PROTOCOL.INI Files

NET.CFG

Preferred Server = MyServer

Link Driver a2500

LineSpeed 100F (optional)
Frame Ethernet_802.3
Frame Ethernet_II
Frame Ethernet_802.2
Frame Ethernet_SNAP

VLM Support

NETWARE DOS REQUESTER
FIRST NETWORK DRIVE=F

PROTOCOL.INI

```
[network.setup]
version=0x3110
netcard=ms$a2500,1,MS$a2500,4
transport=ms$netbeui,NETBEUI
transport=ms$nwlinknb,NWLINK
lana0=ms$a2500,1,ms$nwlinknb
lana1=ms$a2500,1,ms$netbeui

[MS$a2500]

[NETBEUI]
BINDINGS=a2500
LANABASE=1

[net.cfg]
PATH=C:\NET\net.cfg

[Link Driver a2500]
data=Frame Ethernet_SNAP
data=Frame Ethernet_802.2
data=Frame Ethernet_II
data=Frame Ethernet_802.3
data=Link Driver a2500

[NWLINK]
BINDINGS=a2500
```

Removing a Network Adapter Driver

This section contains the procedure for removing a network adapter driver from a system running Microsoft Windows for Workgroups 3.11.

The initial installation copies the OEMSETUP.INF to your WINDOWS\SYSTEM directory. It renames the file to OEM*x*.INF, where *x* is a number starting with 0 for drivers that are not shipped with Windows for Workgroups; this also pertains to video and printer drivers.

1.   Click the **Network Icon** in the Network Control panel.

2.   Select the **Drivers** button in Network Setup.

3.   Select the **Remove** button.

4.   Select **Yes** when asked if you want to remove the driver.

Chapter 5
Novell Netware

This chapter contains the following procedures:

❏ <u>Installing a Network Adapter Driver on Novell Netware 4 Server</u> on page 50

❏ <u>Installing a Network Adapter Driver on Novell NetWare 5.x/6.x</u> on page 55

Installing a Network Adapter Driver on Novell Netware 4 Server

This section contains the procedure for installing a network adapter driver on a system running Novell NetWare 4 Server.

Files Needed for Installation

The .LDI file and the .LAN file for your adapter must be present to succesfully complete installation. The location for each Allied Telesyn adapter are as follows:

Adapter Card	Location
AT-2400 Series	\drivers\at2400\netware\
AT-2500/AT-2501 Series	\drivers\at2500\netware\
AT-2450/AT-2451 Series, AT-2700/AT-2701 Series, AT-2746 Series	\drivers\at2701\netware\
AT-2915 Series, AT-2930 Series	\drivers\at29xx\netware\
AT-2970, AT-2971 Series	\drivers\at2971\netware\[1]

1. For additional AT-2970 and AT-2971 parameter information, refer to the AT297x.txt file.

New Server Installation

1. Follow the directions provided by Novell to load the network drivers using the INSTALL.NLM program.

2. When the Install program prompts for the LAN driver, select **Insert** to specify a driver not listed.

3. Insert the CardAssistant CD or driver installation disk into the appropriate drive.

4. Press <**F3**> to change the default path to A:\NETWARE. Press <**Enter**> as prompted. The adapter driver and other required files will be copied to the SYS: volume.

5. On the next menu, AT-2*xxx* Protocols and Parameters, specify any parameters where needed. A slot value is required when loading the adapter driver. If slot is unknown, driver will correctly detect slot value when loading.

6. Select Save parameters and load driver. The Netware 4.x driver has a PermaNet parameter that gives the Netware Server a redundancy mechanism where two network adapters are connected to the same local network. When the primary adapter fails, the secondary adapter then handles the network traffic until the primary adapter is restored. Proceed with the installation as outlined by Novell.

Installing the Drivers

1. At the file server console prompt, issue the load statement(s) in this order:

```
LOAD <DRIVE>:<PATH>\NBI
LOAD <DRIVE>:<PATH>\MSM
LOAD <DRIVE>:<PATH>\ETHERTSM
LOAD <DRIVE>:<PATH>\<DRIVER>
```

where <DRIVE> and <PATH> are the drive and directory where you copied the NLMs and the adapter file. <DRIVER> is the filename of the adapter driver.

Adapter Card	Location
AT-2400 Series	\drivers\at2400\netware\
AT-2500/AT-2501 Series	\drivers\at2500\netware\
AT-2450/AT-2451 Series, AT-2700/AT-2701 Series, AT-2746 Series	\drivers\at2701\netware\
AT-2915 Series, AT-2930 Series	\drivers\at29xx\netware\
AT-2970, AT-2971 Series	\drivers\at2971\netware\[1]

1. For additional AT-2970 and AT-2971 parameter information, refer to the AT297x.txt file.

Note
If MSM and ETHERTSM NLMs aren't loaded, they'll automatically load before the driver.

You will be prompted if you don't specify a SLOT number.

2. Next you must bind the LAN driver to IPX in order to attach to the server. Type:

```
BIND IPX TO <DRIVER> NET=n
```

Where <DRIVER> is the filename of the adapter driver and *n* is the node address Novell uses for routing IPX packets. This number is arbitrary if there is the only one server on the network, but if there are multiple servers on the same network, it must match the other servers' external network number.

Note
The default frame type for Novell file servers is now Ethernet_802.2.
If you require Ethernet_802.3, specify FRAME=ETHERNET_802.3 on
the command line when loading the driver.

To load multiple frame types for a single card, enter a LOAD and
BIND statement for each frame type. You need to supply a name on
each load line in order to avoid being prompted for which board to
bind IPX to. If you do not have the name option in the
AUTOEXEC.NCF, it will not execute completely without user
intervention.

Example:

```
LOAD <DRIVER> FRAME=ETHERNET_802.3 NAME=IEE8023
BIND IPX TO IEE8023 NET=11111
LOAD <DRIVER> FRAME=ETHERNET_802.2 NAME=IEE8022
BIND IPX TO LAN8022 NET=22222
```

Where <DRIVER> is the filename of the adapter driver.

Additionally, if you have a PCI-1 bus in your system, add
BUSTYPE=PCI1 to the command line, e.g., LOAD
C:\SERVER.4\<driver> BUSTYPE=PCI1. Otherwise the driver may not
find the card. If you don't know which bus you have, try loading
without the option. If it loads, you do not need it.

3. Add the load and bind statements you require to the server's
AUTOEXEC.NCF file so that the LAN driver will load automatically
each time the server starts up.

Here's an example of how the commands would look in your
AUTOEXEC.NCF file.

Example:

LOAD a2500v3 FRAME=Ethernet_802.3 (overrides default frame
BIND IPX to a2500v3 net=1 (all servers on the LAN segment need the
same #)

4. Proceed with the installation as outlined by Novell.

Multiple Adapters

If a system has multiple Allied Telesyn Ethernet Adapters, you use the keyword SLOT to identify each card to the driver. If you have multiple adapters in a single server, each adapter must have a different network number and SLOT number. Also, you might want to name each adapter. So add the options in LOAD commands to distinguish particular adapters. For example:

```
LOAD <DRIVER> FRAME=Ethernet_802.2 NAME=LAN_A SLOT=1
BIND IPX TO LAN_A NET=11
LOAD <DRIVER> FRAME=Ethernet_802.2 NAME=LAN_B SLOT=2
BIND IPX TO LAN_B NET=22
```

<DRIVER> is the filename of the adapter driver.

Add the load and bind statements you need to the server's AUTOEXEC.NCF file so that the Allied Telesyn adapter drivers load automatically each time the server starts.

In an IPX internal router configuration (a server with two adapters, each connected to a different network), the data transfer rate across the router can be low. This happens if client workstations have CPU speeds equal to or higher than the server. You might be able to increase the data transfer rate by adding the following line to STARTUP.NCF:

```
SET MAXIMUM INTERRUPT EVENTS = 100000
```

The default setting is 10.

If you have problems loading the driver on multiple adapters and the initialization fails due to "Insufficient RCBs," increase the number of buffers allocated to the server. Add the following to STARTUP.NCF:

```
SET MINIMUM PACKET RECEIVE BUFFERS = 100 (or larger)
SET MAXIMUM PACKET RECEIVE BUFFERS = 500 (or larger)
```

The MINIMUM value you specify must be at least 30 times the number of Allied Telesyn PCI adapters in the computer.

Recommended settings:

1-3 adapters: 100
4 adapters: 150

The maximum you can specify depends on the amount of memory in the server, but it must be greater than the minimum.

Removing an Adapter Driver from Novell Netware 4 Server

This section contains the procedure for removing a network adapter driver from a system running Novell Netware 4 Server.

1. Type **LOAD INSTALL** at the server console to bring up the server installation module.

2. Select **Driver Options** and press Return.

3. Select **Deselect a selected driver** from the next menu and press Return. The highlight is moved to the installed adapter(s).

4. Press **Return** again to remove the selected driver.

Installing a Network Adapter Driver on Novell NetWare 5.x/6.x

This section contains the procedure for installing a network adapter driver on a system running Novell NetWare 5.x/6.x.

Files Needed for Installation

The .LDI file and the .LAN file for your adapter must be present to succesfully complete installation. The location for each Allied Telesyn adapter are as follows:

Adapter Card	Location
AT-2400 Series	\drivers\at2400\netware\
AT-2500/AT-2501 Series	\drivers\at2500\netware\
AT-2450/AT-2451 Series, AT-2700/AT-2701 Series, AT-2745/AT-2746 Series,	\drivers\at2701\netware\
AT-2915 Series, AT-2930 Series	\drivers\at29xx\netware\
AT-2970, AT-2971 Series	drivers\at2971\netware\[1]

1. For additional AT-2970 and AT-2971 parameter information, refer to the AT297x.txt file.

New Server Installation

The NetWare 5 utility NWCONFIG provides the user with the abitlity to add additional network adapter cards. At the system console, type NWCONFIG

1. Select **Driver Options** then **Configure Network Driver**.

2. Select an **Additional Driver**.

   The NWCONFIG displays a list of the available drivers.

3. Press <**Insert**> to specify a driver not listed.

4. Insert the CardAssistant CD or the Driver Installation Disk into the appropriate drive.

   If you are using the CardAssistant CD, the names and locations of the adapter drivers are as follows:

Adapter Card	Location
AT-2400 Series	\drivers\at2400\netware\
AT-2500/AT-2501 Series	\drivers\at2500\netware\

Adapter Card	Location
AT-2450/AT-2451 Series, AT-2700/AT-2701 Series, AT-2745/AT-2746 Series,	\drivers\at2701\netware\
AT-2915 Series, AT-2930 Series	\drivers\at29xx\netware\
AT-2970, AT-2971 Series	drivers\at2971\netware\[1]

1. For additional AT-2970 and AT-2971 parameter information, refer to the AT297x.txt file.

If you are using a Driver Installation Disk, the adapter driver will be located in the root directory.

5. Press <**F3**> to change the default path.

6. Press **Return**.

The adapter driver and other required files are copied to the SYS: volume.

7. On the next menu, Protocols and Parameters, specify any parameters where needed. A slot value is required when loading the adapter driver. If the slot is unknown, driver will correctly detect slot value when loading.

8. Select **Save parameters and load driver**.

9. Proceed with the installation as outlined in the Novell documentation.

Manual Installation

1. At the file server console prompt, issue the load statement(s) in this order:

```
LOAD <DRIVE>:<PATH>\NBI
LOAD <DRIVE>:<PATH>\MSM
LOAD <DRIVE>:<PATH>\ETHERTSM
LOAD <DRIVE>:<PATH>\<DRIVER>
```

Where <DRIVE> and <PATH> are the drive and directory where you copied the NLMs and the adapter driver file. <DRIVER> is the filename of the driver.

Note
If MSM and ETHERTSM NLMs are not loaded, they will automatically load before the driver. You will be prompted if you do not specify a SLOT number.

Type the following command to bind the LAN driver to IPX in order to attach to the server.

```
BIND IPX TO <DRIVER> NET=n
```

Where <DRIVER> is the filename of the driver and *n* is the node address Novell uses for routing IPX packets. This number is arbitrary if there is the only one server on the network, but if there are multiple servers on the same network, it must match the other servers' external network number.

Note
The default frame type for Novell file servers is now Ethernet_802.2. If you require Ethernet_802.3, specify FRAME=ETHERNET_802.3 on the command line when loading the driver.

To load multiple frame types for a single card, enter a LOAD and BIND statement for each frame type. You need to supply a name on each load line in order to avoid being prompted for which board to bind IPX to. If you do not have the name option in the AUTOEXEC.NCF, it will not execute completely without user intervention.

Example:

```
LOAD <DRIVER> FRAME=ETHERNET_802.3 NAME=IEE8023
BIND IPX TO IEE8023 NET=11111
LOAD <DRIVER> FRAME=ETHERNET_802.2 NAME=IEE8022
BIND IPX TO LAN8022 NET=22222
```

<DRIVER> is the filename of the adapter driver.

If you have a PCI-1 bus in your system, add BUSTYPE=PCI1 to the command line (e.g., LOAD C:\SERVER\A2500v3 BUSTYPE=PCI1). Otherwise the driver may not find the card. If you don't know which bus you have, try loading without the option. If it loads, you don't need it.

Add the load and bind statements you require to the server's AUTOEXEC.NCF file so that the LAN driver will load automatically each time the server starts up. Here's an example of how the commands would look in your AUTOEXEC.NCF file.

```
("NCF Files Options - Create / Edit Server Startup
Files")
LOAD A2500v3 FRAME=Ethernet_802.3 (overrides
default frame type)
BIND IPX to A2500v3 net=1 (all servers on the LAN
segment need the same #)
```

2. Proceed with the installation as outlined by Novell.

Multiple Adapters

If you have multiple Allied Telesyn adapters installed in the system, use the keyword SLOT to identify each card to the driver. If you have multiple adapters in a single server, each adapter must have a different network number and SLOT number. Also, you might want to name each adapter. So add the options in LOAD commands to distinguish particular cards. For example:

```
LOAD A2500v3 FRAME=Ethernet_802.2 NAME=LAN_A SLOT=1
BIND IPX TO LAN_A NET=11
LOAD A2500v3 FRAME=Ethernet_802.2 NAME=LAN_B SLOT=2
BIND IPX TO LAN_B NET=22
```

Add the load and bind statements you need to the server's AUTOEXEC.NCF file so that the adapter drivers load automatically each time the server starts.

In an IPX internal router configuration (a server with two adapters, each connected to a different network), the data transfer rate across the router can be low. This happens if client workstations have CPU speeds equal to or higher than the server. You might be able to increase the data transfer rate by adding the following line to STARTUP.NCF:

```
SET MAXIMUM INTERRUPT EVENTS = 100000
```

The default setting is 10.

If you have problems loading the driver on multiple adapters and the initialization fails due to "Insufficient RCBs," increase the number of buffers allocated to the server. Add the following to STARTUP.NCF:

```
SET MINIMUM PACKET RECEIVE BUFFERS = 100 (or larger)
SET MAXIMUM PACKET RECEIVE BUFFERS = 500 (or larger)
```

The minimum value you specify must be at least 30 times the number of PCI adapters in the computer.

Recommended settings:

1-3 adapters: 100

4 adapters: 150

The maximum you can specify depends on the amount of memory in the server, but it must be greater than the minimum.

Removing an Adapter Driver from Novell Netware 5/6 Server

This section contains the procedure for removing a network adapter driver from a system running Novell Netware 5 or Netware 6 Server.

To remove a driver, you can either use the NWCONFIG program supplied with NetWare or edit the AUTOEXEC.NCF in the SYS:SYSTEM directory with a text editor. The procedure below explains how to remove a driver using the NWCONFIG program.

1. Type **NWCONFIG** at the server console to bring up the installation module.

2. Select **Driver Options** and press **Return**.

3. Select **Deselect a selected driver** from the next menu and press Return. This moves the highlight to the installed adapter(s).

4. Selct the adapter you wish to remove.

5. Press **Return** again to remove the selected driver.

Chapter 6
Linux

This chapter contains the following procedures:

❑ Installing the ATNIC Driver for AT-2450/AT-2451, AT-2700/
AT-2701 Series, and AT-2745/AT-2746 Series PCI Ethernet
Adapters on page 62

❑ Installing a Linux Driver for an AT-2915 and AT-2930 Series
Network Adapter on page 64

❑ Installing Linux on a AT-2970 or AT-2971 Series Adapters on page
67

Installing the ATNIC Driver for AT-2450/AT-2451, AT-2700/ AT-2701 Series, and AT-2745/AT-2746 Series PCI Ethernet Adapters

This driver supports dynamic loading and unloading via the KLM support provided by Linux. As a result, you must custom build the driver for the particular version of the kernel installed. The driver is located on CardAssistant at /drivers/at2701/linux.

Limitations

The current version of the driver has been tested as a loadable module on Red Hat 7.0, 7.1, and 7.2 Linux distributions for i386 and ia64. Testing has also been done on other similar Linux distributions using the 2.4.x kernels.

Building the Driver

Note
You must have the kernel source code and the the full GCC library installed in order to build and load the driver. For RedHat, the kernel source is located on the installation CDs (Disk2), not the source CDs. Look for a file with the name KERNEL-SOURCE-X.X.XX-i386.RPM, where x stands for build number.

To insure that the kernel source code is installed, change to the USR/SRC directory and verify that the linux source tree is present. Look for linux-x.x.x-x, where x stands for the current build numbers. If you only see a linux directory, chances are you've got the wrong source files installed.

1. Copy the Allied Telesyn driver source TAR file to a temporary directory, and type **tar -xvf <filename>** to extract the files.

2. Edit **Makefile** using VI or your favorite text editor, and change the LINUX path variable to the directory name where the kernel source files are installed.

3. Type **make** to compile the driver source code. You should see the atnic32.o file is created if successfull.

4. Continue with driver installation.

Installing the Driver

Run **make install** to install the driver.

The atnic32.o file will be copied to the lib/modules/<build#>/kernel/drivers/net directory and depmod - a will be run to update dependancies.

Dynamic Loading

Type **insmod atnic32.o** to dynamically load the driver without installing it into the operating system.

To configure network protocol and address, refer to Linux documentations.

Changing Configuration Settings

To enable Autonegotiation edit the /etc/conf.modules file to add the line `options atnic options=0` below the `alias eth0 atnic` line. The following indicate the various options for enabling the various interfaces. Only ONE of the following lines can be added. Only one interface is activated based on the keyword it represents. If neither option is selected the driver/device defaults to autonegotiation. Each option is selected by the number it represents.

Note

Full duplex ooperation on the Am79C970 chipset-based cards is only supported on the 10Base-T interface.

AT-2450F, AT-2450FTX, AT-2700TX, AT-2700FX, AT-2745FX, AT-2700FTX (AMD Am79C972 - Fast+ chipset):

options atnic options=0 #(MII, Autonegotiation)

options atnic options=1 #(MII, 100Mbps, Half duplex)

options atnic options=2 #(MII, 100Mbps, Full duplex)

options atnic options=3 #(MII, 10Mbps, Half duplex)

options atnic options=4 #(MII, 10Mbps, Full duplex)

AT-2450T/BT/AT/FT (AMD Am79C970 chipset):

options atnic options=5#(Auto Port Selection)

options atnic options=6#(Fiber/BNC/AUI)

options atnic options=7#(10baseT, Half duplex)

options atnic options=8#(10baseT, Full duplex)2450FT/T/BT/AT

For example:

alias eth0 atnic
options atnic options=3

Installing a Linux Driver for an AT-2915 and AT-2930 Series Network Adapter

This driver supports dynamic loading and unloading via the KLM support provided by Linux. As a result, you must custom build the driver for the particular version of the kernel installed. The driver is located on CardAssistant at /drivers/at29xx/linux.

Limitations The current version of the driver has been tested as a loadable module on Red Hat 7.0, 7.1, and 7.2 Linux distributions for i386 and ia64. Testing has also been done on other similar Linux distributions using the 2.4.x kernels.

Building the Driver

Note
You must have the kernel source code and the the full GCC library installed in order to build and load the driver. For RedHat, the kernel source is located on the installation CDs (Disk2), not the source CDs. Look for a file with the name KERNEL-SOURCE-X.X.XX-i386.RPM, where x stands for build number.

To insure that the kernel source code is installed, change to the USR/SRC directory and verify that the linux source tree is present. Look for linux-x.x.x-x, where x stands for the current build numbers. If you only see a linux directory, chances are you've got the wrong source files installed.

1. Copy the Allied Telesyn driver source TAR file to a temporary directory, and type **tar -xvf <filename>** to extract the files.

2. Edit **Makefile** using VI or your favorite text editor, and change the LINUX path variable to the directory name where the kernel source files are installed.

3. Type **make** to compile the driver source code. You should see the at29xx.o file is created if successfull.

4. Continue with driver installation.

Installing the Driver Run **make install** to install the driver.

The at29xx.o file will be copied to the lib/modules/<build#>/kernel/drivers/net directory and depmod - a will be run to update dependancies.

Dynamic Loading Type **insmod at29xx.o** to dynamically load the driver without installing it into the operating system.

To configure network protocol and address, refer to Linux documentations.

Module Parameters

Optional parameters for the driver can be supplied as command line arguments to the insmod command. Typically, these parameters are set in the file /etc/modules.conf (see the man page for modules.conf). These parameters take the form:

```
<parameter>=value[,value,...]
```

where the multiple values for the same parameter are for multiple NICs installed in the system.

Note
The default values will be used when invalid values are selected.

All the parameters are listed below.

❑ line_speed

Selects the line speed of the link. This parameter is used together with full_duplex to select the speed and duplexity of the link.

The valid values are:

0	Autonegotiate (default)
10	10 Mbps
100	100 Mbps
1000	1000 Mbps

Note
The 1000 Mbps must be negotiated for copper twisted pair links.

❑ full_duplex

Selects the duplexity of the link. This paramter is used together with line_speed to select the speed and duplexity of the link. Note that this parameter is ignored if line_speed is 0.

The valid values are:

0	half duplex
1	full duplex (default)

❏ rx_flow_control

Enables or disables receiving flow control (pause) frames. This parameter is used together with auto_flow_control. The valid values are:

0   pause receive disabled (default)

1   pause receive enabled if auto_flow_control is set to 0, or pause receive advertised if auto_flow_control is set to 1

❏ tx_flow_control

Enables or disables transmitting flow control (pause) frames. This parameter is used together with auto_flow_control.

The valid values are:

0   pause transmit disabled (default)

1   pause transmit enabled if auto_flow_control is set to 0, or pause transmit advertised if auto_flow_control is set to 1

❏ auto_flow_control

Enables or disables autonegotiation of flow control. This parameter is used together with rx_flow_control and tx_flow_control to determine the advertised flow control capability.

The valid values are:

0   flow control autonegotiation disabled (default)

1   flow control autonegotiation enabled with capability specified in rx_flow_control and tx_flow_control (only valid if line_speed is set to 0)

Installing Linux on a AT-2970 or AT-2971 Series Adapters

Readme File for AT-2970 and AT-2971 v6.06 Allied Telesyn AT-2970 and AT-2971 Gigabit Ethernet Adapter family driver for LINUX Install Instructions for sk98lin Driver

Overview   The sk98lin driver installation script supports the AT-2970 and AT-2971 Series Adapaters on Linux 2.4.11 and above. It has been tested with Linux on Intel/x86 machines.

Required Files   To install the Linux driver for the AT-2970 or AT-2971 Series Adapters, you will need the following files:

- ❑ The linux kernel source.

- ❑ Compiler tools

Installation Guidelines   This script will automatically compile and load the sk98lin driver on your host system. Before performing both compilation and loading, you must shutdown any device using the sk98lin kernel module and to unload the old sk98lin kernel module. This script will do this automatically per default. If you want to shutdown and unload the old sk98lin kernel module manually, run the script in the EXPERT mode.

Plug a card into your computer. Without a card you are able to check the full driver functionality.

Be sure to use the same kernel source and kernel version. For instance, it might be, that you run kernel version 2.4.20, but the header files the kernel module will be compiled with refer to kernel version 2.4.21. If you do not have the same kernel version, install the sources and compile a new kernel. You cannot mix different kernel versions.

Installing the Driver   To install the newest Linux driver, perform the following procedure:

1.   Login as **root**.

2.   Unpack the driver installation package using the command:

```
# tar xfvj install-606.tar.bz2
or
# bunzip2 -c install-606.tar.bz2 | tar xfv -
```

3.   To start the driver build process, go to the **DriverInstall** directory and start the build process with the following command:

```
# cd DriverInstall
# ./install.sh
```

4.   Choose your favorite installation method.

5.   The driver will be compiled and installed

Loading the Module Manually

To load the module manually, perform the following procedure:

1.   Enter **modprobe sk98lin**.

2.   If an AT-2971 adapter is installed in your computer and you have a /proc file system, execute the command:

```
# ls /proc/net/sk98lin/
```

This should produce an output containing a line with the following format:

```
eth0    eth1  ...
```

which indicates that your adapter has been found and initialized.

Unloading the Module

To stop and unload the driver modules, perform the following procedure:

1.   Execute the command **ifconfig YOUR_DEVICE down**.

```
# ifconfif eth0 down
# ifconfif eth1 down
```

2.   Execute the command **rmmod sk98lin**.

Driver Parameters

Parameters can be set at the command line after the module has been loaded with the command **modprobe**. In some distributions, the configuration tools are able to pass parameters to the driver module.

If you use the kernel module loader, you can set driver parameters in the file /etc/modules.conf (or old name: /etc/conf.modules).

Chapter 7
BootROM

This chapter contains the procedures for installing and configuring an optional BootROM on an AT-2450, AT-2700, and AT-2745 Series Allied Telesyn Network Adapter Card.

Managed Boot Agent

Managed Boot Agent (MBA) is client-based firmware that allows a client PC to do a "network bootî using the NIC. MBA is fully compliant with the Intel Wired for Management - Preboot Execution Environment (PXE) specification. PXE is the defacto industry standard protocols/APIs for network booting, enabling client PCs to access and boot from boot image files on a server. MBA streamlines networked desktop management, improves network security and cuts client administration costs. Network managers can remotely manage their networks, eliminating costly visits to the desktops

MBA adds extra important features in addition to standard PXE boot agents. To configure these features type ìCRTL ALT Bî when prompted to initialize the MBA configuration screen.

❏ MBA supports additional boot protocols:

— Remote Program Load (RPL)

— Netware NCP/IPX

— Traditional BootP and DHCP

❑ MBA has extra features and options, e.g.:

— The ability to configure speed and duplex without DOS configuration tools.

— Prompt when network boot fails: PXE ñ waits a definable time period before going to next device MBA ñ waits a definable time period before going to next device OR can display message to user and wait for a key press before going to next device

❑ MBA is compatible, robust, and dependable:

— MBA undergoes extensive and thorough testing:

The AT-2451, AT-2701, AT-2746 Series of adapters incorporates Managed Boot Agent (MBA) on the network interface card. MBA is available for the AT-2500, AT-2450, AT-2700, AT-2745 MBA series of adapters as an add-on option.

Installing a BootROM

Note
There are two different variations of AT-2450FTX, AT-2700FTX and AT-2745FX Series cards. One with a BootROM switch and one without. If using the version with a switch see **Step 3**. Also, if using an AT-2700TX or FX, only complete **Step 1**.

Installation   Installing the MBA ROM is a straightforward task, but you must take care to ensure that components are not damaged. Be sure you understand the following instructions *before* installing MBA.

⚠ **Caution**
Risk of equipment damage:
Before removing an adapter card, attach an earth ground to the PC chassis. If an earth ground is unavailable, ensure that the power is switched off and plug in the PC's grounded AC power cord.

⚠ **Caution**
Wear an anti-static wrist strap when handling ROMs. As an additional measure, do not touch the ROM's connectors. Leave the ROM in its anti-static packaging when not in use.

If you are installing MBA on an adapter card that is already in your PC, remove the adapter card from the PC. If you are not familiar with inserting and removing adapter cards in your PC, refer to the **Network Adapter Cards Installation Guide - Book I** for instructions then locate the Boot ROM socket on your adapter card. You may need to refer to the installation guide to locate the correct ROM socket.

MBA Boot ROM Configuration

To configure the MBA Boot ROM options press **Ctrl + Alt+ B** during PXE initialization to enter the MBA Configuration Menu. This message will appear during the Boot ROM initialization. In this menu you can select the boot method and other parameters. Two new features are the Speed/Duplex and Boot ROM Port parameters. The Speed/Duplex parameter allows the user to determine the default speed and duplex configuration without the DOS configuration utility. The Boot ROM Port parameter allows the user to configure the default port on dual-port adapters. Allied Telesyn's dual-port adapter cards are: AT-2450FTX, AT-2700FTX, and AT-2745FX

PLCC Socket Installation

The PLCC socket has three square corners and one angled corner. The angled corner of the ROM must be oriented to match the angled corner of the socket.

Remove the MBA ROM from its anti-static packaging, and align the angled corner of the MBA ROM with the angled corner of the ROM socket on the adapter card. Press down gently and evenly on the ROM to ensure that it is seated correctly in the socket. Figure 11 shows the MBA ROM installation for the AT-BP2700 and AT-BP2501 PC Boot Agent.
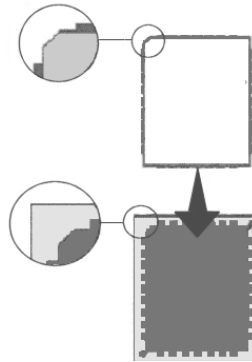
Figure 11 MBA ROM Installation

Figure 12 shows an MBA ROM installation for the AT-BD2700 and AT-BD2500 PC Boot Agent.
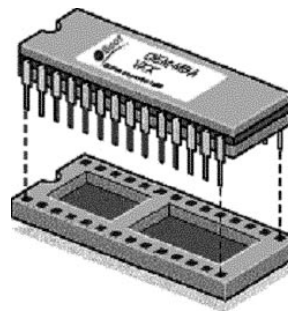
Figure 12 MBA ROM Installed on a AT-BD2700/AT-BD2500

Installing the NIC into the PC and Enabling the ROM Socket

Now that the ROM has been inserted into the adapter card, you can install the card into your PC.

To install the adapter card into the PC, refer to the **Network Adapter Cards Installation Guide, Book II** for instructions. The AT-2450 and AT-2700 Series Adapter Cards will recognize the inserted MBA Boot ROM automatically. However, PXE can be disabled or enabled through the diagnostics program **diag.exe**.

The AT-2500 and AT-2501 adapter cards will require the card to be configured for Boot ROM support, it is disabled by default. To enable Boot ROM support, start the AT-2500 or AT-2501 DOS diagnostics program, **setup25** and enable the Boot ROM from the configuration menu.

BootROM Parameter

1. Run the diagnostics program that came with your Allied Telesyn adapter. (diag.exe, diag25.exe, etc.).

2. If using an AT-2450 and AT-2700 series Combo card, set the BootROM Parameter to the desired port (copper or fiber). If using an AT-2500 series adapter set the BootROM parameter to enable.

For the AT-2450FTX, AT-2700FTX, and AT-2745FX versions with switches you must set your switch to the proper position based on which port you are using (Copper or Fiber).

Table 1 AT-2450FTX

Diag Setting	Switch Position
Copper[1]	Up[1]
Fiber	Down

1. Factory default.

Table 2 AT-2700FTX

Diag Setting	Switch Position
Fiber[1]	Down[1]
Copper	Up

1. Factory default.

Table 3 AT-2745FX

Diag Setting	Switch Position
100 Mb[1]	Up[1]
10 Mb	Down

1. Factory default.

Note
For proper operation when BootROM is **NOT** installed insure the Diagnostics parameter BootRom and switch are set to Factory Default.

Appendix A
Translated Safety and Emission Information

Important: This appendix contains multiple-language translations for the safety statements in this guide.

Wichtig: Dieser Anhang enthält Übersetzungen der in diesem Handbuch enthaltenen Sicherheitshinweise in mehreren Sprachen.

Vigtigt: Dette tillæg indeholder oversættelser i flere sprog af sikkerhedsadvarslerne i denne håndbog.

Belangrijk: Deze appendix bevat vertalingen in meerdere talen van de veiligheidsopmerkingen in deze gids.

Important: Cette annexe contient la traduction en plusieurs langues des instructions de sécurité figurant dans ce guide.

Tärkeää: Tämä liite sisältää tässä oppaassa esiintyvät turvaohjeet usealla kielellä.

Importante: questa appendice contiene traduzioni in più lingue degli avvisi di sicurezza di questa guida.

Viktig: Dette tillegget inneholder oversettelser til flere språk av sikkerhetsinformasjonen i denne veiledningen.

Importante: Este anexo contém traduções em vários idiomas das advertências de segurança neste guia.

Importante: Este apéndice contiene traducciones en múltiples idiomas de los mensajes de seguridad incluidos en esta guía.

Obs! Denna bilaga innehåller flerspråkiga översättningar av säkerhetsmeddelandena i denna handledning.

Standards: This product meets the following standards.

U.S. Federal Communications Commission
Radiated Energy
Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Note: Modifications or changes not expressly approved by the manufacturer or the FCC can void your right to operate this equipment.

Industry Canada
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Community (EC) Electromagnetic Compatibility Directive
This equipment has been tested and found to comply with the protection requirements of European Emission Standards EN55022 Class B/EN61000-3-2 and the ITE European Immunity Standard EN55024

1   RFI Emission   EN55022 Class B, EN61000-3-2, EN61000-3-3

2   **Warning**: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

3   Immunity   EN55024

Safety

4   Electrical Safety   TUV-EN60950, UL1950, CSA 950, EN60825

5   Laser   EN60825

6   This is a "CLASS 1 LED PRODUCT"

7   Warning Do not stare into the Laser beam.

8   **Lightning Danger**
Danger: Do not work on equipment or cables during periods of lightning activity.

9   **Operating Temperature:** This product is designed for a maximum ambient temperature of 50 degrees C.

10   **All Countries**: Install product in accordance with local and National Electrical Codes.

Normen: Dieses Produkt erfüllt die Anforderungen der nachfolgenden Sicherheitsnormen.

 1 Hochfrequenzstörung EN55022 Klasse B

 2 **Warnung**: Bei Verwendung zu Hause kann dieses Produkt Funkstörungen hervorrufen. In diesem Fall müßte der Anwender angemessene Gegenmaßnahmen ergreifen.

 3 Störsicherheit EN55024

Sicherheit

 4 Elektrische Sicherheit TUV-EN60950, UL1950, CSA 950

 5 Laser EN60825

 6 Das ist ein "LED Produkt der Klasse 1"

 7 **Warnung:** Nicht direkt in den Strahl blicken.

 8 **Gefahr Durch Blitzschlag**
Gefahr: Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.

 9 **Betriebstemperatur:** Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 50° C entworfen.

 10 **Alle Länder**: Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.

Standarder: Dette produkt opfylder følgende sikkerhedsstandarder.

 1 Radiofrekvens forstyrrelsesemission EN55022 Klasse B

 2 **Advarsel**: I et hjemligt miljø kunne dette produkt forårsage radio forstyrrelse. Bliver det tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger.

 3 Immunitet EN55024

Sikkerhed

 4 Elektrisk sikkerhed TUV-EN60950, UL1950, CSA 950

 5 Laser EN60825

 6 Dette er et "PRODUKT UNDER KLASSE 1 LED"

 7 **Advarsel:** Stirr ikke på strålen.

 8 **Fare Under Uvejr**
Fare: UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET.

 9 **Betjeningstemperatur**: Dette apparat er konstrueret til en omgivende temperatur på maksimum 50grader C.

 10 **Alle lande**: Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer.

Normen: Dit product voldoet aan de volgende veiligheidsnormen.

 1 RFI Emissie EN55022 Klasse B

 2 **Waarschuwing**: Binnenshuis kan dit product radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen.

 3 Immuniteit EN55024

Veiligheid

 4 Electrische Veiligheid TUV-EN60950, UL1950, CSA 950

 5 Laser EN60825

 6 Dit is een "KLASSE 1 LED-PRODUKT"

 7 **Waarchuwing:** Neit in de straal staren.

 8 **Gevaar Voor Blikseminslag**
Gevaar: NIET aan toestellen of KABELS WERKEN bij BLIKSEM.

 9 **Bedrijfstemperatuur**: De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 50 graden Celsius.

 10 **Alle landen**: het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften.

Normes: ce produit est conforme aux normes de sécurité suivantes :

☞ 1   Emission d'interférences radioélectriques   EN55022 Classe B

☞ 2 ⚠ **Mise En Garde**: dans un environnement domestique, ce produit peut provoquer des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.

☞ 3   Immunité   EN55024

Sécurité

☞ 4   Sécurité électrique   TUV-EN60950, UL1950, CSA 950

☞ 5   Laser   EN60825

☞ 6 ⚠ Ce matériel est un "PRODUIT À DIODE ÉLECTROLUMINESCENTE DE CLASSE 1"

☞ 7   **Attention:** Ne pas fixer le faisceau des yeux.

☞ 8   **Danger De Foudre**
     Danger: Ne pas manier le matériel ou les CÂBLES lors d'activité orageuse.

☞ 9 ⚠ **Température De Fonctionnement**: Ce matériel est capable de tolérer une température ambiante maximum de 50 degrés Celsius.

☞ 10   **Pour Tous Pays**: Installer le matériel conformément aux normes électriques nationales et locales.

Normit: Tämä tuote on seuraavien turvallisuusnormien mukainen.

☞ 1   Radioaaltojen häirintä   EN55022 Luokka B

☞ 2 ⚠ **Varoitus**: Kotiolosuhteissa tämä laite voi aiheuttaa radioaaltojen häiriöitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.

☞ 3   Kestävyys   EN55024

Turvallisuus

☞ 4   Sähköturvallisuus   TUV-EN60950, UL1950, CSA 950

☞ 5   Laser   EN60825

☞ 6 ⚠ Tämä on "ENSIMMÄISEN LUOKAN VALODIODITUOTE"

☞ 7   **Variotus:** Älä katso säteeseen.

☞ 8   **Salamaniskuvaara**
     Hengenvaara: Älä työskentele laitteiden tai kaapeleiden kanssa salamoinnin aikanA.

☞ 9 ⚠ **Käyttölämpötila**: Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 50°C.

☞ 10   **Kaikki Maat**: Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.

Standard: questo prodotto soddisfa i seguenti standard di sicurezza.

☞ 1   Emissione RFI (interferenza di radiofrequenza)   EN55022 Classe B

☞ 2 ⚠ **Avvertenza**: in ambiente domestico questo prodotto potrebbe causare radio interferenza. In questo caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.

☞ 3   Immunità   EN55024

Norme Di Sicurezza

☞ 4   Sicurezza elettrica   TUV-EN60950, UL1950, CSA 950

☞ 5   Laser   EN60825

☞ 6 ⚠ Questo è un "PRODOTTO CON LED DI CLASSE 1"

☞ 7   **Avertenza:** Non fissare il raggio con gli occhi.

☞ 8   **Pericolo Di Fulmini**
     Pericolo: Non lavorare sul dispositivo o sui CAVI durante precipitazioni temporalesche.

☞ 9 ⚠ **Temperatura Di Funzionament**o: Questo prodotto è concepito per una temperatura ambientale massima di 50 gradi centigradi.

☞ 10   **Tutti I Paesi**: installare il prodotto in conformità delle vigenti normative elettriche nazionali.

Sikkerhetskrav: Dette produktet oppfyller følgende sikkerhetskrav:

1	RFI stråling	EN55022 Klasse B

2 ⚠ **Advarsel**: Hvis dette produktet benyttes til privat bruk, kan produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler.

3	Immunitet	EN55024

Sikkerhet

4	Elektrisk sikkerhet	TUV-EN60950, UL1950, CSA 950
5	Laser	EN60825

6 ⚠ Dette er et "KLASSE 1 LED PRODUKT"

7 **Advarsal**: Stirr ikke på strålen.

8 **Fare For Lynnedslag**
Fare: Arbeid ikke på utstyr eller kabler i tordenvær.

9 ⚠ **Driftstemperatur**: Dette produktet er konstruert for bruk i maksimum romtemperatur på 50 grader celsius.

10 **Alle Land**: Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder.

Padrões: Este produto satisfaz os seguintes padrões de segurança:

1	Emissão de interferência de radiofrequência	EN55022 Classe B

2 ⚠ **Aviso**: Num ambiente doméstico este produto pode causar interferência na radiorrecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas.

3	Imunidade	EN55024

Segurança

4	Segurança Eléctrica	TUV-EN60950, UL1950, CSA 950
5	Laser	EN60825

6 ⚠ Este é um "PRODUTO CLASSE 1 LED"

7 **Aviso:** Não olhe fixamente para o raio.

8 **Perigo De Choque Causado Por Raio**
Perigo: Não trabalhe no equipamento ou nos cabos durante períodos suscetíveis a quedas de raio.

9 ⚠ **Temperatura De Funcionamento**: Este produto foi projetado para uma temperatura ambiente máxima de 50 graus centígrados.

10 **Todos Os Países**: Instale o produto de acordo com as normas nacionais e locais para instalações elétricas.

Normas: este producto cumple con las siguientes normas de seguridad.

1	Emisión RFI	EN55022 Clase B

2 ⚠ **Advertencia**: en un entorno doméstico, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.

3	Inmunidad	EN55024

Seguridad

4	Seguridad eléctrica	TUV-EN60950, UL1950, CSA 950
5	Laser	EN60825

6 ⚠ Este es un "PRODUCTO DE DIODO LUMINISCENTE (LED) CLASE 1"

7 **¡Advertencia!** No mirat fijamente el haz.

8 **Peligro De Rayos**
Peligro: No realice ningun tipo de trabajo o conexion en los equipos o en los cables durante tormentas electricas.

9 ⚠ **Temperatura Requerida Para La Operación**: Este producto está diseñado para una temperatura ambiental máxima de 50 grados C.

10 **Para Todos Los Países**: Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

Normer: Denna produkt uppfyller följande säkerhetsnormer.

∽ 1		Radiostörning	EN55022 Klass B

∽ 2 ⚠ **Varning**: Denna produkt kan ge upphov till radiostörningar i hemmet, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder.

∽ 3   Immunitet   EN55024

       Säkerhet

∽ 4   Elsäkerhet   TUV-EN60950, UL1950, CSA 950

∽ 5   Laser   EN60825

∽ 6 ⚠ Detta är en "KLASS 1 LYSDIODPRODUKT"

∽ 7   **Varning!** Laserstrålning när enheten är öppen.

∽ 8   **Fara För Blixtnedslag**
    Fara: Arbeta ej på utrustningen eller kablarna vid åskväder.

∽ 9 ⚠ **Driftstemperatur**: Denna produkt är konstruerad för rumstemperatur ej överstigande 50 grader Celsius.

∽ 10   **Alla Länder**: Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning.