



# **DockMate™ Net Ready User's Guide**

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DockMate Net Ready User's Guide  
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## Introduction

This document discusses the Texas Instruments DockMate™ Net Ready.

When used with the TravelMate™ 5000 Series notebook computer, external keyboard, mouse, and VGA monitor (not supplied with the system), the DockMate Net Ready turns your notebook into an ergonomic desktop workstation.

The DockMate Net Ready uses ThunderLAN™ technology to make networking easy and efficient.

This guide tells you how to install, operate, and maintain your DockMate Net Ready.



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**Note:** Also review the *TravelMate 5000 Quick Start* (TI Part No. 9786164-0001) prior to using your system for the first time.

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This manual contains five chapters and three appendixes including:

- ❑ **Chapter 1: Features** — Discusses package contents and introduces the main features of your DockMate Net Ready.
- ❑ **Chapter 2: DockMate Net Ready Installation** — Discusses software and hardware installation for your DockMate Net Ready.
- ❑ **Chapter 3: Network Installation** — Describes how to install software required for network connection and how to connect the DockMate Net Ready to the network.
- ❑ **Chapter 4: Utilities** — Describes how to use utilities provided with your DockMate Net Ready.

# Preface

- ❑ **Chapter 5: Troubleshooting Procedures** — Provides operator-level troubleshooting procedures for solving problems that you may encounter when configuring and using the system.
- ❑ **Appendix A: Reference Material** — Provides a list of related documentation.
- ❑ **Appendix B: DockMate Net Ready Specifications** — Provides a list of system specifications for your DockMate Net Ready.
- ❑ **Appendix C: Advanced Networking** — Provides information on network drivers in a variety of operating environments.
- ❑ **Appendix D: Driver Keywords** — Provides information on network diagnostics.

## Ordering Parts and Supplies

To order TI publications, option kits, spare parts, or supplies for your system, contact your 1-800-TI-TEXAS or the Texas Instruments service center for your country.

## Feedback

TI provides an internet mail address for those who want to comment on TI documentation. Please send email to:

**[feedback@clio.cae.ppd.ti.com](mailto:feedback@clio.cae.ppd.ti.com)**

## Preface

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Your DockMate Net Ready provides hardware and software expansion capabilities for TravelMate 5000 notebook computers. Using the DockMate Net Ready quickly and easily turns your notebook into a desktop workstation.

## This Chapter Provides:

- A description of the DockMate Net Ready package contents
- A general overview of the DockMate Net Ready features

The DockMate Net Ready provides VGA, mouse, keyboard, serial, parallel, and RJ-45 Ethernet<sup>®</sup> or 10BaseT connectivity. Peripheral devices are configured using the TI Setup or SetDock utilities discussed in Chapter 4, *Utilities*.

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# Package Contents

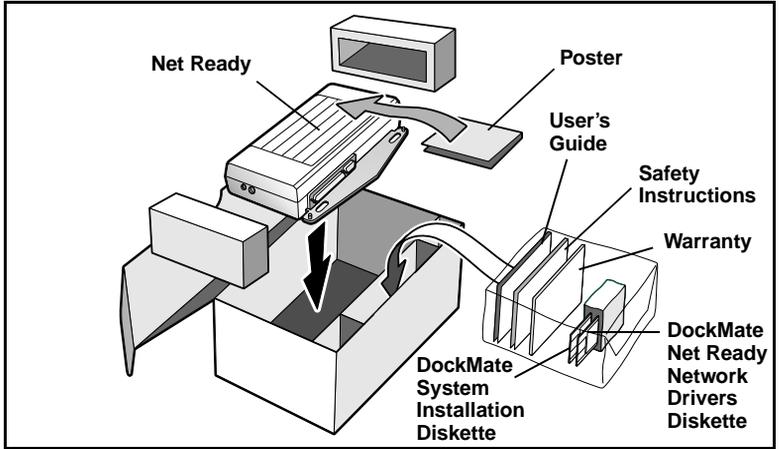
The DockMate Net Ready is shipped with the following components:

- DockMate Net Ready
- Accessory Kit
  - DockMate System Installation diskette
  - DockMate Net Ready Network Drivers diskette
  - DockMate Net Ready User's Guide*
  - License Agreement
  - Open Me First (Warranty Card)

Unpack the DockMate Net Ready using the following instructions:

- 1.** Remove the DockMate Net Ready and all accessories from the shipping carton.
- 2.** Remove all protective coverings from the DockMate Net Ready and accessories, and inventory the contents. Save the shipping container and packaging if shipping is required in the future.

# Package Contents

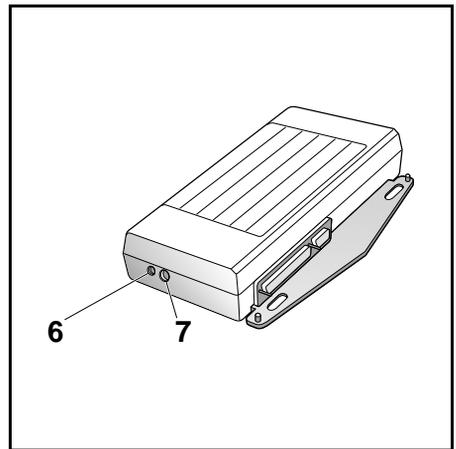
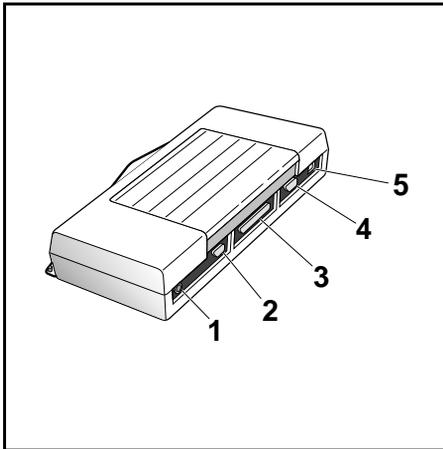


Package contents

# DockMate Net Ready Features

Cross reference numbers indicate feature locations on subsequent drawings:

#	Feature	Description
1	Mouse	Connects to external mouse, keyboard, or numeric keypad (recommended for the keyboard).
2	15-Pin VGA Port	Connects to an external VGA monitor.
3	25-Pin Parallel Port	Connects to a parallel printer or other device that uses a standard parallel interface. EPP/ECP compatible.
4	9-Pin Serial Port	Connects to external devices such as a serial printer. 16550 UART for improved performance or modem.
5	Built-in Networking	Connects using Ethernet (10BaseT) connector.
6	DC-In	Connects to AC adapter (supplied).
7	PS/2® Port	Connects to external mouse, keyboard, or numeric keypad (recommended for the mouse).



# DockMate Net Ready Installation

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## This Chapter Explains:

- Software installation
- Hardware installation
- Feature description and installation of peripheral devices




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**Note:** Some peripheral devices require special setup information. If your device requires this information, you must run TI Setup or the SetDock utility as described in Chapter 4, *Utilities*.

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# Introduction

Two software diskettes are provided with your DockMate Net Ready:

- ❑ DockMate System Installation diskette - updates the TravelMate BIOS software with the latest version that supports your DockMate. If your TravelMate has a newer version of BIOS than the one on the diskette, the program will not change the BIOS on your system.
- ❑ DockMate Net Ready Network Drivers diskette - contains software required to connect your DockMate Net Ready to specified network operating systems.



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**Note:** For provisions on the use of Windows 95, please refer to Chapter 5, *Windows 95*.

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# DockMate Software Installation

For your TM5000 Series computer to work correctly with the DockMate Net Ready, you must upgrade the BIOS (Basic Input/Output System) with new firmware (FLASH ROM).

To upgrade the BIOS, complete the following steps:

1. Turn off power to your notebook computer.
2. Ensure the system is undocked.
3. Place the DockMate Installation diskette into drive A.
4. Turn on power to your notebook computer.
5. Follow instructions on the screen.

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 **Note:** If your system BIOS is more current than the BIOS on the diskette, your system BIOS is not updated and you are taken to the MS-DOS prompt. If this is the case, remove the diskette and reboot.

---

*When finished, your system is going to reboot and you are going to stop the machine before the process is complete. Refer to step 6.*

6. During the reboot process watch the screen and notice the following:
  - Windows 95 Users - when you see **Starting Windows 95...**, press **Ctrl-F5**
  - Windows for Workgroups Users - when you see **Starting MS-DOS**, press **F5**  
*An MS-DOS prompt appears.*
7. Press **Ctrl-Alt-Esc**.
8. If you have previously changed the configuration of TI Setup for special hardware requirements, note the settings before continuing to the next step. Reload them later as required by your hardware.

# DockMate Software Installation

9. From the Setup menu, press **Esc-F5** to load factory defaults.
10. Press **Esc-F4** to save the configuration.

*The installation process is complete and your computer reboots.*



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**Note:** When using a DockMate, plug the AC adapter supplied with your TravelMate 5000 into the DockMate. All power on or off is then controlled by the notebook's power switch.

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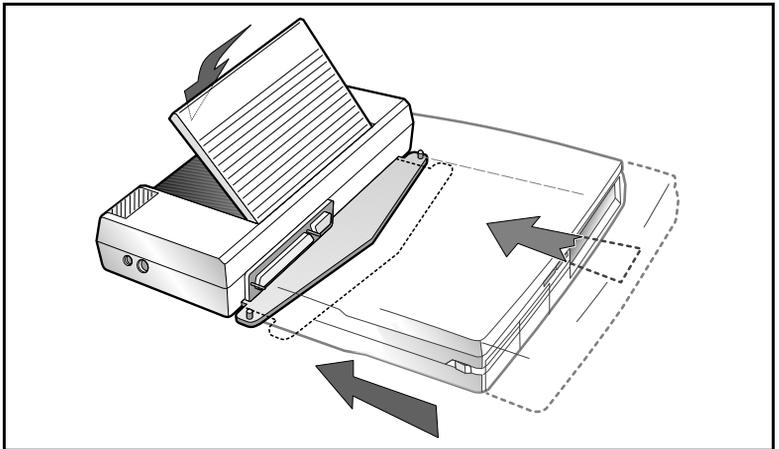
**Note:** Some TM5000 Series notebooks may experience PCMCIA recognition problems when docked to a DockMate Net Ready. Troubleshooting procedures are located in Chapter 5, *Troubleshooting Procedures*.

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# DockMate Hardware Installation

After upgrading your notebook BIOS using procedures in the previous section, complete the following procedures to dock your notebook computer:

1. Clear an area on your workstation surface to permit both units to be flat on the table or desktop while performing the initial docking procedure.
2. Ensure that the rear port covers on the TM5000 Series are open.
3. Lift the lever on top of the DockMate Net Ready so that the guide pin plate is extended.
4. Carefully match the holes on the underside of the notebook with the guide pins protruding from the DockMate Net Ready and press down on the top lever of the DockMate to dock.



# Features

This section provides information on using features of the DockMate Net Ready.

## PS/2 Options

You can attach any of the following to the 5-pin PS/2 connectors on the DockMate Net Ready:

- external keyboard
- external PS/2 mouse
- external numeric keypad

To install the external PS/2 option, connect a round PS/2 connector cable to the PS/2 connector on the DockMate Net Ready. These ports are described in detail in Chapter 1.



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**Note:** When the notebook is docked to the DockMate Net Ready, use only the PS/2 ports on the DockMate.

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## Serial Port Connections

Your DockMate Net Ready is equipped with a 9-pin serial port with 16550 UART that can be attached to any external serial device such as:

- external modem
- serial printer
- any device that uses an RS-232 interface



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**Caution:** Never connect a parallel device to a serial port, or a serial device to a parallel port or video port; this may cause damage to the DockMate Net Ready. If you are uncertain as to what type connector the external device has, refer to the technical manual for the external device.

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## Parallel Port Connections

Your DockMate Net Ready is equipped with one DB25 (25-pin) bidirectional parallel port (device name LPT1). This port occupies address 0378h, and is designated as LPT1 (default value). Typically, the notebook computer sends print data to LPT1 unless configured otherwise.

## Video Connector

To install an external VGA monitor (optional), connect the VGA cable connector to the 15-pin connector on the rear of the DockMate Net Ready. The DockMate Net Ready supports all external monitors supported by the TM5000. For further information, refer to the *TM5000 User's Guide*.



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**Note:** Refer to the online *TM5000 User's Guide* and *User's Reference Guide* for information on VGA utilities.

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## AC Connection

Your DockMate Net Ready must run off of AC power by connecting a TI AC adapter (supplied) to the system. When docked, use the power connection at the DockMate (not the notebook) to power the system.

# Features



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**Caution: Only a TM5000 AC adapter, TI Part No. 9786094-0003, can be connected to your DockMate Net Ready. To order a spare adapter, call 1-800-TI-TEXAS or the reseller closest to you.**

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## Network Connection

The DockMate Net Ready is designed to provide easy network access for your TM5000 computer using a built-in Ethernet connection (Ethernet 10BaseT). To connect the DockMate Net Ready, use the standard network cable. Connect one end of the cable to your DockMate Net Ready and the other to a wall jack (refer to Chapter 3, *Network Installation*).

## This Chapter Explains:

- Introduction to DockMate Net Ready Networking
- Requirements
- Network connection
- How to install network drivers for your DockMate Net Ready

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# Introduction to Networking

## Network Features

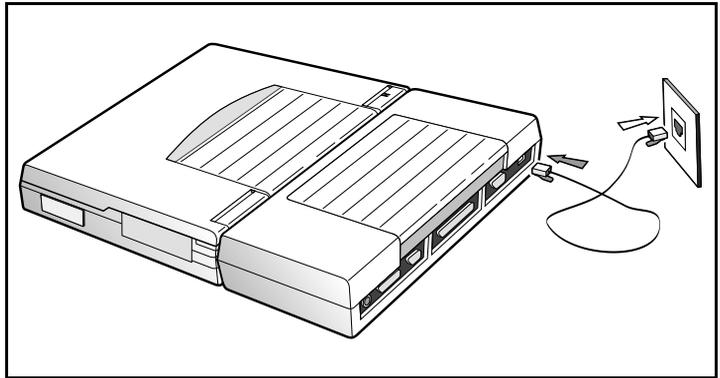
Your DockMate Net Ready network connection is located on the rear of your docking station and consists of:

- A 10BaseT connection (supports Ethernet 802.3)
- LEDs (visible through access holes on the rear of the unit)
  - Green - indicates a connection or link to the network. Connection can only be made after network drivers are loaded.
  - Amber - indicates the option is monitoring traffic on the network

## Getting Started

The DockMate Net Ready requires a twisted pair cable with an RJ-45 connector. To connect the DockMate Net Ready to the network, complete the following steps:

1. Attach one end to the DockMate Net Ready.
2. Connect the other end to the network.



Network connection

# Network Driver Installation

A DockMate Net Ready Network Drivers diskette is supplied with your DockMate Net Ready. This diskette updates your operating system with network drivers that complete your DockMate Net Ready network connection.



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**Note:** References to ThunderLAN indicate TI's network software solution for the DockMate Net Ready.

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The following table describes network drivers available for use with the DockMate Net Ready:

Driver	Supports
Netware <sup>®</sup> Server ODI	<ul style="list-style-type: none"><li><input type="checkbox"/> Novel Netware 3.11*</li><li><input type="checkbox"/> Novell Netware 3.12*</li><li><input type="checkbox"/> Novell Netware 4.x*</li></ul>
DOS NDIS 2	<ul style="list-style-type: none"><li><input type="checkbox"/> Windows<sup>®</sup> for Workgroups 3.1</li><li><input type="checkbox"/> Windows for Workgroups 3.11</li><li><input type="checkbox"/> Microsoft<sup>®</sup> LAN Manager for DOS v2.x (supports DOS 3.x-6.x and Windows 3.1)</li><li><input type="checkbox"/> Microsoft Windows 95 (no plug n' play support)</li></ul>

The following sections provide some examples of installation procedures for selected operating systems. Refer to the installation instructions and README.TXT on the DockMate Net Ready Network Drivers diskette for your operating system if you cannot find procedures for your operating system in this guide.

# Network Driver Installation



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**Note:** Contact 1-800-TI-TEXAS or the service provider nearest you if further information is required by your system administrator.

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## Changing Parameters

The DockMate Net Ready automatically sets most required parameters. However, if after completing the driver installation procedures, you want to change settings (such as IRQ, DMA, and address information) and require further information, refer to *Changing Driver Settings* in this chapter or call 1-800-TI-TEXAS.

## Windows 95 Network Installation

To install network drivers on a Windows 95 system, refer to the following sections.



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**Note:** For provisions on the use of Windows 95, please refer to Chapter 5, *Windows 95*.

---

### ThunderLAN Driver Previously Installed

If you have a previous version of the ThunderLAN driver installed in Windows 95, perform the following steps to remove it before loading the latest driver:

1. Select **Network** from the Control Panel.
2. Select the **Texas Instruments ThunderLAN** entry and select **Remove**.
3. Select **OK** at the warning message.
4. Select **OK** to exit the Network dialog box.
5. Restart Windows when prompted.

# Network Driver Installation

## Installing the Network Driver

Perform the following steps to install the latest ThunderLAN network driver.

1. After docking and attaching the network cable to the network, start your computer.

*The first time after the ThunderLAN card has been installed, a **New Hardware Found** dialog box appears. This dialog box states that Windows has detected a PCI Network Controller.*

2. From the dialog box, select **Driver from disk provided by manufacturer**, and then select **OK**.

---

**Note:** If you start Windows 95 and you do not get the **New Hardware Found** dialog box, go to the Windows Control Panel and select the **System** icon. From the Device Manager menu, you should see **PCI Network Controller** under **Other Devices**. Highlight this entry and select the **Remove** button. Restart your computer and follow the installation instructions from Step 1.

---



3. Insert the DockMate Net Ready Network Drivers Diskette into drive A:

4. When prompted for the pathname of the vendor-provided network driver disk, type

**A:\NDIS2\WIN95**

and select **OK**.

5. You may be prompted to select a device. If prompted, select the **Texas Instruments ThunderLAN** adapter.

*The driver is installed. You are prompted to enter the path for your Windows-95 system files.*

# Network Driver Installation

6. To continue network driver installation, complete one of the following steps:

- Installing from hard drive - If you are using TI pre-installed Windows 95, Step 6 is performed automatically. Information windows will appear as drivers are loaded. No action is required by the user.

or

You will be prompted for additional Windows 95 drivers. When prompted, type

**C:\WINDOWS\OPTIONS\CABS**

and press **Enter**.

- Installing from CD-ROM - If you are using the CD-ROM based release of Windows 95, type the pathname

**E:\WIN95**

(where e: is your CD-ROM<sup>®</sup> drive).

and select **OK**.

- If you are using the floppy-based release of Windows 95 - insert the appropriate diskettes as directed by Windows 95. If a pathname error results, edit the field to read:

**A:\**

and continue.

*You are asked if you wish to restart your computer.*

7. Select **No**.
8. Windows 95 continues driver installation.

# Network Driver Installation

9. If you wish to modify driver settings to change the default operation of the driver, refer to *Changing Driver Settings* later in this chapter.
10. After setting all desired options, restart your computer.



---

**Note:** The DockMate Net Ready automatically sets most required parameters. However, if you want to change settings (such as IRQ, DMA, and address information) and require further information, refer to *Changing Driver Settings* in this chapter or call 1-800-TI-TEXAS.

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## Windows for Workgroups 3.11 Network Installation

To install network drivers on a Windows for Workgroups 3.11 system, refer to the following sections.

### ThunderLAN Driver Previously Installed

If you have a previous version of the ThunderLAN driver installed in Windows for Workgroups 3.11, perform the following steps to remove it before loading the latest driver:

1. Go to an MS-DOS<sup>®</sup> prompt.
2. Change directories so that your prompt reads:

**C:\WINDOWS\SYSTEM**

and press **Enter**.



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**Note:** This is the location where Windows is installed on your hard drive.

---

# Network Driver Installation

3. Type

**DIR OEM\*.INF**

and press **Enter**

to display all of the OEM setup files currently residing on your hard drive. If there are no OEM\*.inf files, proceed to *Installing the Network Driver* in the following section.

4. For each OEM setup file displayed in Step 3, type the following command and replace the ? with one of the numbers in the file names displayed in Step 3.

**TYPE OEM?.INF | MORE**

For example, OEM2.INF | MORE

*The contents of the file are displayed. If the file contains references to the ThunderLAN driver, it must be deleted. Press **Enter** to page through the file.*

5. You must delete files containing ThunderLAN references. Type the command

**DEL OEM?.INF**

For example, DEL OEM2.INF

(where ? is the number of the specific OEM setup file)

and press **Enter**.

*The setup file is removed.*

6. Repeat Steps 3 through 5 until all OEM files are checked and files with ThunderLAN references are deleted.
7. After removing all ThunderLAN specific OEM setup files, proceed to the following section, *Installing the Network Driver*.

# Network Driver Installation

## Installing the Network Driver

Perform the following steps to install the latest ThunderLAN network driver.

1. After docking and attaching the network cable to the network, start your computer.
2. From Windows Network group, click on the **Network Setup** icon.

3. Select **Drivers...** .

*The Network Drivers dialog box appears.*

4. If there is an existing ThunderLAN driver displayed in Network Drivers, highlight it and click on **Remove**.

*The driver is removed.*

5. Select **Add Adapter...** .

6. When prompted for the name of the network adapter, select **Unlisted or Updated Network Adapter**.

7. Insert the DockMate Net Ready Network Drivers diskette into drive A:

8. When prompted for the pathname of the vendor-provided network driver disk, type

**A:\NDIS2\WFW311**

and press **Enter**.

9. Select the **Texas Instruments ThunderLAN** adapter and select **OK**.

*The Network Drivers dialog box displays:*

*ThunderLAN Driver added.*

10. Select **Close**.

# Network Driver Installation

11. From the Network Setup window, select **OK**.

*You are asked if you wish to update various Windows network components.*

12. Select **Yes to all** and insert the appropriate Windows disks as directed.

13. If you are prompted to enter the pathname for the ThunderLAN driver file TLAN.DOS, insert the DockMate Net Ready Network Drivers diskette into drive A:, type

**A:\NDIS2\WFW311**

and press **Enter**.

14. Select **OK** when you are prompted to modify your CONFIG.SYS and SYS.INI files.

*After installing all required components, you are prompted to restart Windows.*

15. Do not reboot your computer. Remove your installation diskette and select **Restart Windows**.

*Windows is re-initialized and installation is complete.*



---

**Note:** The DockMate Net Ready automatically sets most required parameters. However if you want to change settings (such as IRQ, DMA, and address information) and require further information, refer to *Changing Driver Settings* in this chapter or call 1-800-TI-TEXAS.

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## Windows for Workgroups 3.1 Network Installation

To install network drivers on a Windows for Workgroups 3.1 system, refer to the following sections:

# Network Driver Installation

## ThunderLAN Driver Previously Installed

If you have a previous version of the ThunderLAN driver installed in Windows for Workgroups 3.1, perform the same procedures detailed in *Windows for Workgroups 3.11 Network Installation* to remove previously installed drivers. Do not use Windows for Workgroups 3.11 procedures to install network drivers. Continue to the following section.

## Installing the Network Driver

Perform the following steps to install the latest ThunderLAN network driver.

1. After docking the notebook and attaching the network cable to the network, start your computer.
2. From the Main program group in Windows, select the **Control Panel** icon.
3. Select **Network**.
4. Select **Adapter**.
5. Select **Add**.
6. When prompted for the name of the network adapter, select **Unlisted Network Card**.
7. Select **OK**.
8. Insert the DockMate Net Ready Network Drivers diskette into drive A:.
9. When prompted for the pathname of the vendor-provided network driver disk, type  
**A:\NDIS2\WFW31**  
and press **Enter**.
10. Select the **Texas Instruments ThunderLAN** adapter and select **OK**.

# Network Driver Installation

11. Select **OK** from the Adapter Configuration window.
12. Follow the remaining displayed instructions to complete the driver installation.



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**Note:** The DockMate Net Ready automatically sets most required parameters. However if you want to change settings (such as IRQ, DMA, and address information) and require further information refer to *Changing Driver Settings* in this chapter or call 1-800-TI-TEXAS.

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## LAN Manager

The following information provides information on installing the network driver for Microsoft LAN Manager 2.2 and Microsoft LAN Manager 2.0.

### LAN Manager 2.2

1. Install Microsoft LAN Manager 2.2.
2. From a DOS prompt, type  
**CD\LANMAN**  
and press **Enter**.
3. Type  
**SETUP.EXE**  
and press **Enter**.  
*The network setup program appears.*
4. Select **Configuration**.
5. Select **Network Drivers**.
6. Select **Add New Configuration**.
7. Select **Other Driver**.

# Network Driver Installation

8. Insert the DockMate Net Ready Network Drivers diskette into drive A:.

9. Type

**A:\MSLANMAN.DOS\DRIVERS\ETHERNET\TLAN**

and press **Enter**.

10. Select **OK**.

*Once the driver is copied from the diskette, you are asked to select the network protocol. Once the protocol has been selected, the driver installation is complete. The CONFIG.SYS and PROTOCOL.INI files are automatically updated. You are prompted to save the configuration changes, exit setup, and restart the system for changes to take effect.*

## LAN Manager 2.0

1. Install Microsoft LAN Manager 2.0.

2. From a DOS prompt, type:

**CD\LANMAN**

and press **Enter**.

3. Type

**SETUP.EXE**

and press **Enter**.

*The network setup program appears.*

4. Select **Action**.

5. Select **Import Network Drivers**.

6. Insert the DockMate Net Ready Drivers diskette into drive A: when prompted.

# Network Driver Installation

7. Type:  
**A:\MSLANMAN.DOS\DRIVERS\ETHERNET\TLAN**  
and press **Enter**.
8. Select **Texas Instruments ThunderLAN adapter**.  
*The drivers are copied to your system.*
9. Select **Action**.
10. Select **View/modify**.
11. Follow instructions on the screen until you get to network drivers.
12. Select **Network Adapter Cards**.
13. Scroll down the adapter card list and highlight the **Texas Instruments ThunderLAN** adapter.
14. Select **Add Driver**.
15. Select **Add Protocol** to select desired protocols.
16. Remove any unwanted configurations using the remove command.
17. Select **Done**.
18. Select **Action**.
19. Select **Save** to save changes.
20. Select **Exit** to exit the setup program. Reboot your system for the changes to take effect.



---

**Note:** For information on Netware drivers, refer to the README.TXT file on your DockMate Net Ready Network Drivers diskette.

---

# Network Driver Installation

## Changing Driver Settings

The following table displays default settings for Windows 95 and Windows for Workgroups (versions 3.1 and 3.11).

Parameter	Default Setting
Max Transmit Depth	12
Netcard Address - Use quotes	"XXXXXXXXXXXX" (value in quotes up to 12 characters)
PCI Card Slot	2
Connect Full Duplex	0
Non-Managed MII Phy	No
Auto-Detect Connection	Yes
Connect or use AUI Connector	No

To change network driver settings, refer to the following sections:

### Windows 95

1. From the Control Panel, select the **Network** icon.
2. Highlight the **Texas Instruments ThunderLAN** entry and select the **Properties** button.

---

**Note:** See the *Driver Keywords* section in Appendix C for a description of the settings available. You may select the **File and Print Sharing** button to enable sharing on your machine. Check that the information listed under the **Identification** menu is correct.

---

3. After setting all desired options, restart your computer.

# Network Driver Installation

## Windows for Workgroups 3.11

1. From Windows, click on the **Network Setup** icon from the Network program group.
2. Click on **Drivers...** This brings up the **Network Drivers** dialog box.
3. Select the **ThunderLAN** driver.
4. Change settings as desired (use information provided in Appendix C).
5. Select **OK**.

*You are asked if you want to save the change.*

6. Select **Yes**.

*A Network Drivers screen appears.*

7. Select **Close**.

8. At the Network Setup screen, select **OK**.

*You are notified that your protocol has been modified.*

9. Select **OK**.

10. Select the button to restart your computer.



---

**Note:** If your Net Ready fails to install during the boot process, verify that there is a *net start* line in your AUTOEXEC.BAT file.

---

## Windows for Workgroups 3.1

To change driver settings for Windows for Workgroups 3.1, complete the following steps:

1. From the **Network Drivers** dialog box, highlight the **Texas Instruments ThunderLAN [NDIS2] driver**.
2. Click on **Advanced**.

# Network Driver Installation

3. Refer to Appendix C for a description of the settings available.

## Ethernet Address

You may need the node address to install drivers on some systems. If this address is required by your system administrator, complete the following steps:

1. From a DOS prompt, go to the **C:\UTILS** directory.
2. Type

**DISPENET**

and press **Enter**

to run the Ethernet Address Utility.

*The address displays on your screen.*

3. Note the address.
4. Return to your normal operating environment.



---

**Note:** Refer to the *Netcard Address* in Appendix C for further information on the use of this number.

---

## This chapter tells you about:

- Using DockMate utilities

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# Introduction

TI provides two utilities that are copied to your system when you install software from the DockMate System Installation diskette:

- TI Setup - for use with Windows 95 and Windows for Workgroups
- SetDock - for use with MS-DOS

These utilities allow advanced users to configure special operating modes or parameters for hardware attached to the TravelMate notebook or the DockMate Net Ready.



---

**Note:** Call 1-800-TI-TEXAS for information on utilities not covered in this section.

---

TI Setup is copied onto your system at the time you install the DockMate Installation diskette. TI Setup is used to configure peripheral hardware attached through your DockMate Net Ready. TI Setup is used in either Windows or Windows 95 environments.

To configure peripherals for use with your system, complete the following steps:

1. Complete the following for your operating system:
  - If you are using Windows 95 - Double-click on **TI Setup** in the Control Panel
  - If you are using Windows for Workgroups - double-click on **TI Setup** in the TravelMate Notebook Center group
2. Select the tab labeled **Ports-Dock A**.
3. Under Dock Type, use the pulldown menu (by selecting the ▼) and single-click on **DockMate Net Ready**.
4. Using configuration information provided with your peripheral device, change any required settings in this window.

---

**Note:** A **Ports-Dock B** tab (identical to the Ports-Dock A tab) is provided in case you have more than one type of DockMate system and want to maintain settings for both types. If both Ports Dock A and B are set to the same type of DockMate system, only Ports Dock A settings are used. The **Ports - Undocked** tab indicates settings for your TravelMate notebook when undocked from the DockMate.

---

The following table provides a synopsis of all options available on the Ports-Dock A or Ports-Dock B tabs:

# Using TI Setup

Item	Options	Description
Dock Type	None (default) DockMate DockMate Plus DockMate Net Ready DockMate Multimedia General Pn'P Dock	Allows you to select the type of docking station attached to your notebook. General Pn'P Dock provides auto setup for any operating system that supports true Plug 'N Play.
Dock 9 Pin	Off COM1 (default) COM2 COM3 COM4	Allows you to select the communications port for the attached docking station.
COM3/COM4	338/238 3e8/2e8 (default) 2e8/2e0 220/228	Allows you to select the address at which COM ports 3 and 4 operate.
Dock Parallel Port Address	Off 3BCh 378h (default) 278h	Allows you to select the address at which the parallel port operates.
Dock Parallel Port Extended Mode	Off (default) SPP EPP and SPP ECP ECP and EPP	Allows you to select the protocol for bidirectional operation (printers or parallel network adapters).

# Using the SetDock Utility

SetDock is copied onto your system at the time you install the DockMate Software Installation diskette. The SetDock utility is used in the DOS environment only. Like TI Setup, it configures your system for use with peripheral devices. If you are using Windows or Windows 95, use TI Setup when you add or change peripherals. For more information on options available on SetDock screens, refer to the table in the *Using TI Setup* section of this chapter.

## Running SetDock

To run SetDock from MS-DOS, go to the UTILS directory (C:\UTILS) and type

### **SETDOCK.EXE**

and press **Enter**. The SetDock main screen then appears on your monitor.

TravelMate 5000 Dock Setup Program Version 1.10 Oct 6 1995			
Dock Configuration 'A'		Page 1 of 2	
Dock Type: DockMate Net Ready			
Serial Ports		Dock Parallel Port	
Dock 9 Pin:	COM1	Address:	378h
		Extended Mode:	Off
COM3/COM4 Addresses:	3e8/2e8		
Select the type of docking station			
Esc=Exit F1= Help		↑↓ Field +/- Value PgUp/PgDn	

SETDOCK page 1 of 2

# Using the SetDock Utility



---

**Note:** A Dock Configuration B screen (page 2 of 2) is provided in case you have more than one type of DockMate system and want to maintain settings for both. If both Dock Configurations A and B are set to the same type of DockMate system, only Ports Dock A settings are used.

---

## SetDock Key Functions

To use SetDock utility screens, the following keys are provided.

Key	Function
← →	Moves forward or backward through the values available for the selected field
↑ ↓	Moves up or down through the list of fields
Tab	Moves down through the list of fields
ESC	Displays a screen with Exit options
F1	Provides help
+/-	Moves forward or backward through the values available for the selected field
Spacebar	Moves forward through the values available for the selected field
PgUp PgDn	Switches between Dock Configuration A and Dock Configuration B

# Using the SetDock Utility

## Exiting SetDock

To leave the SetDock utility, complete the following steps:

1. Press **Esc**.

*The Exiting Setup Menu appears.*

2. Select one of the following options:

Key	Function
Esc	Returns you to the main screen
F4	Saves all changes, exits Setup, and reboots
F5	Loads default values for all pages. Use this setting to reload values if you have had problems during configuration. Press <b>Esc-F4</b> afterward to save and exit.
F6	Aborts Setup without saving values

# Troubleshooting Procedures

---

## This Chapter Provides Tips for:

- Network Connection
- Application-related anomalies




---

**Note:** For other troubleshooting tips, refer to the README.TXT file on the DockMate Installation Disk.

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# Windows 95

Currently, networking drivers for Windows 95 Plug and Play are not included with the DockMate Net Ready package. The TI ThunderLAN MiniPort 3 drivers will be available in early 1996. Contact Texas Instruments Customer Satisfaction Line (1-800-TI-TEXAS) for further information.

Windows 95 networking functionality will continue to work with the NDIS 2 drivers provided by TI; however, some operations within Windows 95 will not function properly due to non-Plug and Play. The following are some of the known differences in Windows 95 operations with the DockMate Net Ready product when operating non-Plug and Play drivers.

- The SuSpnd(Suspend) button on the top of the TravelMate will not operate as expected. There is no suspend mode while docked.
- When docked to a TM5000 series computer, Windows 95 inserts a new selection to the START menu options (those that appear when you select the START icon at the bottom of the screen). Just above the Shutdown option, you will find Eject PC. This function, if selected, results in a Windows Dock/Undock Error. Use the Shutdown selection instead.
- Hot docking (docking the DockMate Net Ready while the TM5000 is powered on) is non-functional. For proper functionality, you must turn off your TM5000 computer and dock the DockMate Net Ready. Ensure that all network drivers and connections are made (refer to Chapters 2 and 3) and turn power on.



---

**Note:** Your computer should function normally if you undock your DockMate Net Ready.

---

- ❑ Undocked systems - on certain models, your system may hang during the boot process at the Windows 95 Logo screen. If the unit is undocked an error occurs when the unit tries to make the network connection.

Press **Ctrl-Alt-Esc** and the Windows 95 Logo window disappears.

The error message should now be displayed. Clear the message errors as indicated by the error messages on the screen.

If you are going to be undocked for an extensive period of time, edit the AUTOEXEC.BAT file and type **REM** at the beginning of the line indicating net start.



---

**Caution: Changing any other line in your AUTOEXEC.BAT file may drastically alter your computer's configuration. Only advanced users or certified technicians should make changes to the AUTOEXEC.BAT file. For information on editing this file, refer to your online Microsoft documentation.**

---

# Notebook Connection

- ❑ Visually inspect the notebook and verify that the notebook is docked properly (refer to Chapter 2, *Dockmate Hardware Installation*).
- ❑ Visually inspect the connectors on the notebook to ensure there is no physical damage to the connector areas of the notebook.
- ❑ Ensure that you are using the correct AC adapter (TI Part No. 9786094-0003).
- ❑ Try disconnecting the notebook and running notebook diagnostics to isolate the problem to either the notebook or the DockMate Net Ready.

For further information, refer to Appendix D, *Diagnostics* in the online *TravelMate 5000 Series Notebook Computer User's Reference Guide* for a description of the error code messages.

- ❑ Try cycling power on the notebook.

# Network Connection

Network problems can be the result of using the wrong type of notebook or an improperly docked notebook. If there is no power generated to the DockMate, ensure you are properly docked and that the power cord is plugged into the DockMate Net Ready properly.

## Loading Network Drivers

If you are loading EMM386.EXE in your CONFIG.SYS file, ensure it is version 4.48 or later. If not, your computer hangs when loading the ThunderLan driver.

## Network LED

The green LED near the network connection on the back of your DockMate Net Ready lights to indicate a correct link to the network. If the green LED does not light:

- Check that all network drivers are loaded correctly

Ensure your network connector is properly seated

- Try connecting the network to a working system to see if this is a problem with the network or with the DockMate Net Ready
- If the problem persists, contact 1-800-TI-TEXAS or the dealer nearest you.

## Network Diagnostics

To run network diagnostics, refer to Appendix D.

# Option Installation

If you experience difficulty with a serial device, parallel device, PS/2 device, or external VGA monitor, disconnect the DockMate. Connect the peripheral to the notebook. If it runs properly, you can determine that the anomaly lies with the DockMate and not with your peripheral or with the notebook.

## Ports

If you are running Windows for Workgroups, Windows 95, or MS-DOS and an external device (such as a printer) is failing, check the following:

1. Ensure that the device's I/O cable is the correct type for the port and is securely installed.
2. Ensure that the external device is powered up and properly connected to the DockMate System and that the external device is properly configured (refer to Chapter 2, *DockMate Hardware Installation*).
3. If you are experiencing a failure on the serial port, check to see that the serial port is correctly configured to match the settings in the external device (refer to Chapter 4). If your application software does not initialize the serial ports, you must use the MS-DOS MODE command in your AUTOEXEC.BAT file (refer to your online *MS-DOS User's Manual* for further instructions).

## Printer

If you are running Windows 95 and are experiencing problems with printing, complete the following steps:

1. From the Windows Control Panel, select the **System** icon.
2. Select the **Device Manager**.
3. Select the **Printer port**.
4. Verify that the I/O Range is 378-037A.

5. Verify that the IRQ is set to 07.
6. Select **OK**.

## Multiple Adapter Cards

OS/2 ODI clients do not support interrupt sharing. If the driver detects more than one adapter card assigned to the same interrupt line, only the first card detected will be initialized. The driver uses PCI BIOS routines to determine which interrupt lines are assigned to which slots. In order to change a configuration in which the same interrupt line is assigned to more than one PCI slot, use the SETUP/DIAG program provided by the workstation manufacturer.

# MTTOOL

When running the Microsoft MTTOOL test program for the first time, an error `PROTMAN$ TEST FUNCTION FAIL` occurs. Running `MTDOS.EXE` a second time corrects the error. The latest release of the MTTOOL test corrects this problem.

# PCMCIA Card Recognition

On some TravelMate Pentium products, a PCMCIA Ethernet card error may occur after DockMate installation. If this happens, refer to the following sections (Windows 95, Windows 95 Commercial Upgrade, or Windows for Workgroups) depending on your operating environment.

## Windows 95 (TI-Installed)

The following instructions should clear PCMCIA Ethernet card problems in a TI-installed Windows 95 environment.

### Reconfigure TI Setup

1. Open the Windows Control Panel and select the **TI Setup** icon.
2. Select the **System Configuration** tab and set the parameter for PCMCIA I/O Addresses to Maximum.
3. Select the tab marked **Ports-Dock A**.
4. Select **DockMate Net Ready** for the Dock Type.
5. Select **Dock Parallel Port Extended Mode**.
6. Choose one of the following as the recommended settings for docking:
  - SPP is selected as **Standard Parallel Port**
  - ECP and EPP is selected as **Extended Parallel Port** (setting preferred for most users).
7. Select **OK**.
8. Reboot and proceed to *Reconfigure System Information*.

### Reconfigure System Information

1. Select the **System** icon in the Control Panel.
2. Select the **Device Manager** tab.

# PCMCIA Card Recognition

3. Double-click on the **Ports (COM & LPT)** option.  
*A list of selections appears.*
4. Double-click on **Communications Port (COM2)**.  
*The COM2 configuration is displayed.*
5. Select the **General** tab.
6. Deselect **Dock 1 (Current)** located in the Device Usage area.
7. Select **OK/Close** to close the Communications Port Properties window.
8. Select **OK/Close** to close the System Properties window.
9. Select the **Start** icon at the bottom of your screen.
10. Select **Shutdown**.
11. Select **Restart the computer**.
12. Select **Yes**.

*The notebook restarts and the error should be cleared.*

## Windows 95 (Commercial Upgrade)

This version of Windows 95 is not TI-installed. If you are running the Windows 95 commercial upgrade, these instructions should clear PCMCIA ethernet card problems.

### Reconfigure TI Setup

1. Open the Windows Control Panel and select the **TI Setup** icon.
2. Select the **System Configuration** tab and set the parameter for PCMCIA I/O Addresses to Maximum.
3. Select the **Dock A** tab.

# PCMCIA Card Recognition

4. Select **DockMate Net Ready** as the Dock Type.
5. Select **OK**.  
*You are prompted to reboot.*
6. Reboot and proceed to *Reconfigure System Information*.  
*Windows 95 starts configuring unknown hardware (this may happen multiple times and is a standard operation for Plug 'n Play in Windows 95).*

## Reconfigure System Information

The following steps allow you to reconfigure system information for the Windows 95 Commercial Upgrade.

### Checking Device Settings

1. Go to the **System** icon located in the Control Panel.
2. Select the **Device Manager** tab.
3. Select **Modem** from the Device Manager tab.
4. Select **Resources** after selecting the modem being used and ensure that the modem is set to IRQ 3 and an address 3e8.
5. Select **Resources** after selecting PCMCIA socket and verify that the PCMCIA socket is not turned off.

### Remove Ports and Devices

1. Go to the **System** icon located in the Control Panel.
2. Select **Ports (COM & LPT)** from the Device Manager tab.
3. Select and remove all communications ports except COM1.
4. Select and remove all PCMCIA devices.
5. Remove PCMCIA hardware devices from the TravelMate notebook.

# PCMCIA Card Recognition

6. Close the System Properties window and restart the system.

## Update Device Usage

1. Go to the **System** icon located in the Control Panel.
2. Select **Ports (COM & LPT)** from the Device Manager tab.
3. Double-click on **Communication Port (COM2)**.
4. Select the **General** tab.
5. Deselect **Dock 1 (Current)** located in the Device Usage area.
6. Select **OK**.

## Reinstall Hardware

1. Reinstall all PCMCIA hardware devices one at a time.

*Windows 95 should automatically configure software for each device.*

2. Select the **Refresh** button on the System Properties screen and check and correct any conflicts.

---

**Note:** Conflicts are indicated by a yellow  symbol where the device icon would normally be. Go to the Resources tab to see detailed information about the conflict.

---

## Turn off Automatic Settings

1. Go to the **System** icon located in the Control Panel.
2. Select **Ports (COM & LPT)** from the Device Manager tab.
3. Double-click on the icon for each device you have added.  
*Configuration properties for the selected device appear.*
4. Select **Resources**.

# PCMCIA Card Recognition

5. Ensure that **Use automatic settings** is deselected.

## Accept Configuration Changes

1. Select **OK** to close the System Properties window.
2. Close the Control Panel.
3. Select the **Start** icon at the bottom of your screen.
4. Select **Shutdown**.
5. Select **Restart the computer**.
6. Select **Yes**.

*The notebook restarts and the error should be cleared.*

## All Windows 95 Systems

If you are still experiencing PCMCIA recognition problems using a Windows 95 system, complete the following steps:

1. Open the Control Panel.
2. Select the **PC Card (PCMCIA)** icon.
3. Select the **Global Setting** tab.
4. Deselect **Automatic Settings**.
5. Change the Start field to 000C8000.
6. Change the End field to 007FFFFF.
7. Verify that the Length field is 00001000.
8. Select **OK**.
9. Select **Yes** to restart.

## Windows for Workgroups v3.11

If you are running Windows for Workgroups v3.11, the following instructions should clear problems with your PCMCIA card:

# PCMCIA Card Recognition

1. Go to TI Setup (located in the TravelMate Notebook Center group) and select the **System Configuration** tab.
2. Ensure that the PCMCIA I/O is changed from Minimum to Maximum.
3. Press **Esc-F4** to save the configuration.
4. Select the **Ports-Dock A**.
5. Select the correct DockMate type for your DockMate (DockMate, DockMate Net Ready, DockMate Plus, DockMate Multimedia, etc.).
6. Select **OK**.  
*You are prompted to reboot.*
7. Reboot the computer.

# Appendix A

## Reference Material

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### Other Manuals About the System

The following documents provide additional information about the DockMate System:

Product	Manual	Part Number
TravelMate 5000	User's Guide	online
	Maintenance Manual	9794529-0001
	User's Reference Guide	online
Windows for Workgroups 3.11 and Windows 95	User's Guide	online
MS-DOS	User's Manual	online

# Appendix B

## DockMate Net Ready Specifications

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Specifications for the DockMate Net Ready are provided in the following table:

DockMate Net Ready Specifications		
Specification	Type	Value
Physical Dimensions	Width	11.0 inches
	Depth	5.77 inches
	Height	2.48 inches
	Weight	1.84 lbs. without options
Power Adapter	Input	100 to 240 VAC
	Frequency	50 to 60 Hz
	Current	0.3 to 0.6 A
	Output	0.6 to 0.3 A 13 VDC Maximum of 36 Watts
Temperature	Operating	50 to 104 degrees F (10 to 40 degrees C)
	Storage/Transit	-4 to 140 degrees F (-20 to 60 degrees C)
Humidity	Operating	20 to 80 percent, non-condensing
	Non-Operating	10 to 90 percent, non-condensing
Altitude	Operating	-1,000 ft. to 10,000 ft.
	Non-Operating	-1,000 ft. to 10,000 ft.

# Appendix B

DockMate Net Ready Specifications		
Specification	Type	Value
Shock	Operating	6 G applied in six orientations (pos. and neg. X, Y, and Z axes)
	Non-Operating	35 G in X, Y, and Z axes
Vibration	Operating	0.5 G, 5 to 500 Hz
	Non-Operating	0.5 G, 5 to 500 Hz
Agency Approvals	<p>Underwriter's Laboratory (UL) Standard 1950 (safety)</p> <p>Canadian UL listed C22.2 No. 950 (safety)</p> <p>EN60950, TUV Rheinland (safety)</p> <p>FCC CFR 47, Part 15, Subpart B, FCC Level B (RFI/EMI) Compliant</p> <p>Canadian Department of Communications (DOC) Compliant (RFI/EMI)</p> <p>CISPR-22/EN55022 Class B (RFI/EMI) Compliant</p>	

# Appendix C

## Driver Keywords

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**Important: Information in this section is provided for advanced users or system administrators.**

---

Several operational parameters of the ThunderLAN driver can be specified through the use of driver keywords.

Refer to Chapter 3 for information on changing driver settings using keywords in this appendix.

### Driver Keywords for DOS NDIS2

Several ThunderLAN driver settings can be modified. This section describes the ThunderLAN driver keywords used to modify these settings. Keywords are not case sensitive.

These keywords can be manually added into the TLAN\_NIF section of the PROTOCOL.INI file.

#### **AUICONNECTOR=(yes or no) Connect or Use AUI Connector**

The AUI keyword specifies that the AUI network interface is to be used for ThunderLAN's internal 10BaseT PHY or alternatively, a bit-rate 10 Mbps PHY if selected.

If AUI is set to Yes, then the 10BaseT network interface is used.

#### **MAXTRANSMITS=<n> Max Transmit Depth**

The MAXTRANSMITS keyword specifies the number <n> of transmit packet headers that can be queued by the driver. The value of <n> can range from 6 to 18 inclusive; the default value is 12 if MAXTRANSMITS is not specified.

Each transmit header requires approximately 128 bytes of memory. Reducing the value of MAXTRANSMITS will save memory used by the driver, but may result in an increased

# Driver Keywords

number of *out of resource* conditions, resulting in decreased network performance. Increasing MAXTRANSMITS will reduce these *out of resource* conditions.

## **SLOT=<n> PCI Card Slot**

The SLOT keyword specifies the PCI card slot number where the ThunderLAN adapter is installed. The SLOT number can be specified to identify the specific ThunderLAN adapter to use if more than one ThunderLAN adapter is installed.

The value of <n> can range from 1 to 15 inclusive or Auto Detect. The default is Auto Detect.

## **AUTODETECT=(Yes or No) Phy Auto-Detect**

The AUTODETECT keyword enables/disables the PHY auto-detection mechanism.

The default operation of the driver is to automatically detect the PHY to use by testing for a valid link. Setting the AUTODETECT keyword to 0 disables this feature, and causes the driver to select the first PHY device encountered, regardless of link status. The following is a brief outline of the PHY detection scheme:

1. If a bit-level PHY is detected (i.e. Level-One), it is used.
2. If the NOMGTMIIPHY keyword is specified, then an MII compliant PHY device which does not provide a management MII interface is used.
3. All MII PHY ID's are scanned. If an MII PHY is found, and the NOAUTODETECT keyword is not specified, then the driver checks for a valid link on this PHY. If a valid link is found, then this PHY is used. Otherwise, the next PHY is checked. If the NOAUTODETECT keyword is specified, then no link checking is done and this PHY is used.

## **NETWORK=(0 or 1 to 4) Network Type**

The NETWORK keyword is used to force ThunderLAN to use the speed and duplex settings as shown below. Note that in order for speed and duplex support to operate properly, ThunderLAN must be connected to a HUB capable of setting supplied. The NETWORK keyword is ignored if a 100VG PHY is used.

If NETWORK is set to 0, ThunderLAN will auto configure the speed and duplex settings.

Type	Setting
0	Auto Detect
1	10 Mb
2	100 Mb
3	10 Mb/Full Duplex
4	100 Mb/Full Duplex

## **NETADDRESS="xxxxxxxxxxxx"**

### **Netcard Address - Use quotes**

The NETADDRESS keyword allows an alternative network adapter address to be specified for the ThunderLAN adapter. The 12 character address must be specified within double quotes.

Use this keyword with caution. Unpredictable results will occur if a conflicting or non-standard address is specified.

If the NETADDRESS keyword is not specified, then the network address stored in the ThunderLAN adapter's ROM is used.

# Driver Keywords

## **NOMGTMIIPHY=(yes or no) Non-Managed MII Phy**

The NOMGTMIIPHY keyword specifies that an MII compliant PHY device which does not provide a management MII interface is to be used.

Setting this keyword to Yes will disable use of the ThunderLAN internal 10BaseT PHY and other management capable MII PHYs.

## **Driver Keywords for Netware**

Several operational parameters of the ThunderLAN driver can be specified at driver initialization time through the use of driver keywords. This section describes the ThunderLAN driver specific keywords.

These keywords can be specified on the command line when loading the ThunderLAN Netware Server ODI driver using the LOAD command.

Alternatively, they may also be specified in a Driver Configuration File.

Keywords are not case-sensitive; they may be specified in either lower-case, upper-case, or a combination. Consult your Novell documentation for more information.

### **AUI ThinNet**

The AUI and ThinNet keywords work identically. They specify that the AUI network interface is to be used for ThunderLAN's internal 10BaseT PHY or alternatively, a bit-rate 10 Mbps PHY if selected.

If AUI or ThinNet is not specified, then the 10BaseT network interface is used.

### **Full Duplex**

Full Duplex forces ThunderLAN and full duplex capable 10/100 Mbit PHY devices to use full duplex mode. Note

that in order for full duplex support to operate properly, ThunderLAN must be connected to a HUB capable of full duplex operation. The Full Duplex keyword is ignored if a 100VG PHY is used.

If Full Duplex is not specified, ThunderLAN will operate in half duplex mode.

## **NoAutoDetect**

The default operation of the driver is to automatically detect the PHY to use by testing for a valid link. Specifying the NoAutoDetect keyword disables this feature, and causes the driver to select the first PHY device encountered, regardless of link status. The following is a brief outline of the PHY detection scheme:

- 1.** If a bit-level PHY is detected (i.e. Level-One), it is used.
- 2.** If the NoMgtMiiPhy keyword is specified in NET.CFG, then an MII compliant PHY device which does not provide a management MII interface is used.
- 3.** All MII PHY ID's are scanned. If an MII PHY is found, and the NoAutoDetect keyword is not specified in NET.CFG, then the driver checks for a valid link on this PHY. If a valid link is found, then this PHY is used. Otherwise, the next PHY is checked.

If the NoAutoDetect keyword is specified, then no link checking is done and this PHY is used.

## **NOMGTMIIPHY**

NOMGTMIIPHY specifies that an MII compliant PHY device which does not provide a management MII interface is to be used. Specifying this keyword will disable use of the ThunderLAN internal 10BaseT PHY and other management capable MII PHYs.

# Driver Keywords

## **IMAX <value>**

The IMAX keyword specifies the maximum interrupts per second that the driver will issue to the Server. Valid values for <value> are between 1000 and 32000 inclusive. If IMAX is not specified, the default value of 32000 is used.

## **TBURST <burst size>**

The TBURST keyword specifies the maximum number of bytes to be transferred in any one transmit DMA data burst. Valid values for <burst size> are 16, 32, 64, 128, 256, and 512. If TBURST is not specified, the default value of 64 bytes is used.

Several ThunderLAN driver settings can be modified. This section describes the ThunderLAN driver keywords used to modify these settings. Keywords are not case sensitive.

## **Driver Keywords for Microsoft LAN Manager**

Several operational parameters of the ThunderLAN driver can be specified at driver initialization time through the use of driver keywords. This section describes the ThunderLAN driver specific keywords.

These keywords can be manually added into the [TLAN\_NIF] section of the PROTOCOL.INI file.

### **AUICONNECTOR=(yes or no)**

#### **Select AUI/Thinnet Connector**

The AUI keyword specifies that the AUI network interface is to be used for ThunderLAN's internal 10BaseT PHY or alternatively, a bit rate 10 Mbps PHY if selected.

If AUI is set to 0, then the 10BaseT network interface is used.

## **MAXTRANSMITS=<n> Max Transmit Depth**

The MAXTRANSMITS keyword specifies the number <n> of transmit packet headers that can be queued by the driver. The value of <n> can range from 6 to 18 inclusive; the default value is 12 if MAXTRANSMITS is not specified.

Each transmit header requires approximately 128 bytes of memory.

Reducing the value of MAXTRANSMITS will save memory used by the driver, but may result in an increased number of Out Of Resource conditions, resulting in decreased network performance. Increasing MAXTRANSMITS will reduce these Out Of Resource conditions.

## **SLOT=<n> PCI Card Slot**

The SLOT keyword specifies the PCI card slot number where the ThunderLAN adapter is installed. The SLOT number can be specified to identify the specific ThunderLAN adapter to use if more than one ThunderLAN adapter is installed.

The value of <n> can range from 1 to 15 inclusive.

## **AUTODETECT=(yes or no) Phy Auto-Detect**

The AUTODETECT keyword enables/disables the PHY auto-detection mechanism.

The default operation of the driver is to automatically detect the PHY to use by testing for a valid link. Setting the AUTODETECT keyword to 0 disables this feature, and causes the driver to select the first PHY device encountered, regardless of link status. The following is brief a outline of the PHY detection scheme:

1. If a bit-level PHY is detected (i.e. Level-One), it is used.
2. If the NOMGTMIIPHY keyword is specified, then an MII compliant PHY device which does not provide a management MII interface is used.

# Driver Keywords

3. All MII PHY ID's are scanned. If an MII PHY is found, and the NOAUTODETECT keyword is not specified, then the driver checks for a valid link on this PHY. If a valid link is found, then this PHY is used. Otherwise, the next PHY is checked. If the NOAUTODETECT keyword is specified, then no link checking is done and this PHY is used.

## **NETWORK=(0 or 1 to 4) Network Type**

The NETWORK keyword is used to force ThunderLAN to use the speed and duplex settings as shown in the following table. Note that in order for speed and duplex support to operate properly, ThunderLAN must be connected to a HUB capable of setting supplied. The NETWORK keyword is ignored if a 100VG PHY is used.

If NETWORK is set to 0, ThunderLAN will auto configure the speed and duplex settings.

Type	Setting
0	Auto Configuration
1	10 Mb
2	100 Mb
3	10 Mb/Full Duplex
4	100 Mb/Full Duplex

## **NETADDRESS="xxxxxxxxxxxxx" Netcard Address - Use quotes**

The NETADDRESS keyword allows an alternative network adapter address to be specified for the ThunderLAN adapter. The 12 character address must be specified within double quotes.

Use this keyword with caution. Unpredictable results will occur if a conflicting or non-standard address is specified.

If the NETADDRESS keyword is not specified, then the network address stored in the ThunderLAN adapter's ROM is used.

## **NOMGTMIIPHY=(yes or no)**

### **Non-Managed MII Phy**

The NOMGTMIIPHY keyword specifies that an MII compliant PHY device which does not provide a management MII interface is to be used.

Setting this keyword to 1 will disable use of the ThunderLAN internal 10BaseT PHY and other management capable MII PHYs.

TLANDIAG is a diagnostic program which diagnoses network problems. To use TLANDIAG, refer to the appropriate sections in this appendix.

### Before Running TLANDIAG

Before running TLANDIAG, be sure to check the following items:

1. Make sure that TLANDIAG is not being run in a DOS window in any Windows environment.

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 **Note:** If these diagnostics are run in Windows, the program aborts and tells the user to run TLANDIAG in DOS. If you are running Windows 95, reboot your computer and press **SHIFT+F5** when the system says **Starting Windows 95...** . If you are running Windows or Windows for Workgroups, reboot your computer and press **F5** when the system says **Starting MS-DOS...** .

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2. Make sure that ThunderLAN drivers are not loaded when running TLANDIAG. If TLANDIAG detects drivers upon start-up, it aborts and asks users to please unload drivers before running TLANDIAG.
3. Currently, TLANDIAG only runs diagnostics on the first instance of the ThunderLAN card found on the PCI Bus (unless run with the **-dc** option - see **RUNNING TLANDIAG** in this appendix). If multiple cards are installed, only the first card will be tested on each execution of TLANDIAG.
4. If the user wants Wire Tests to be performed by TLANDIAG, have the card plug into an active network.

# Diagnosics

To run TLANDIAG, complete the following steps:

1. Insert the Driver Disk into drive A.
2. At the DOS command line, type

**A:\DIAGS\TLANDIAG.EXE**

and press **Enter**.

A report file that contains a hardcopy of the screen output is found in TLANDIAG.REP in the same directory in which TLANDIAG is run. It tests the internal adapter registers and then finds and tests the internal PHY and any external PHYs.

To get command line help, type **TLANDIAG -H** and press **Enter**.

To obtain more information on an error reported by TLANDIAG, run TLANDIAG in verbose mode, **TLANDIAG -V**, and additional information will be reported to the report file, TLANDIAG.REP. The information reported by verbose mode is intended for use by TLAN support staff.

## TLANDIAG Options

The following command line options are available:

TLANDIAG [-D(ACEHMP)] [-H] [-L] [-P] [-Tpasses] [-V]

Switch	Function
-D	Display mode. Displays the contents of the specified register.
-DA	Displays the Adapter Internal Registers.
-DC	Displays info on all TLAN boards present.
-DE	Displays the EEPROM.
-DH	Displays the Host Interface registers.
-DM	Displays the MII registers.
-DP	Displays the PCI Configuration registers.
-H	Help. Shows command line help.
-L	LED Test. Tests the two LEDs on the back of the ThunderLAN board.
-P	Waits for input between each screen of output.
-T	Number of Passes. Controls how many times the diagnostics program loops.
-V	Verbose Mode. Provides additional information in the TLANDIAG.REP file.

## Test Descriptions

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**Note:** PHY and WIRE Tests: PHY auto-detection is implemented to detect the type of external and internal PHY present and if a link is present on these PHYs. TLANDIAG then tests PHYs that it finds and runs wire tests if it finds a link on that particular PHY.

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### Configuration Register Test

Checks the PCI Configuration Register to ensure that the configuration space contains the correct preset values, and that the correct areas can be written to.

# Diagnostics

## Adapter IO Register Test

Checks the ThunderLAN Adapter Host Interface Registers to ensure that it contains the correct preset values, and that the correct areas can be written to.

## Adapter DIO Register Test

Checks the ThunderLAN Adapter Internal Registers to ensure that it contains the correct preset values, and that the correct areas can be written to.

## ThunderLAN RAM Tests

Checks the ThunderLAN on-board RAM to see if addressing, data reads and writes, and data independence of the RAM are working correctly.

## Host Interrupt Test

Sets the Request Host Interrupt bit in the HOST\_CMD Register field and checks to see if an interrupt occurred and if it was the correct one.

## Internal Wrap

Puts ThunderLAN in internal wrap mode and sends and receives one 64 byte frame. Tests are then performed to see if the network statistics registers are updated, the adapters interrupts occurred correctly, and that the full packet was received.

## EEPROM Read Test

Tests to see if acknowledgements (acks) are returned from reads to all the address of the EEPROM and if the 5 occurrences of the Burned in Address are all equivalent.

## MII Interrupt Test

Sets the TINT bit in the PHY Control Register in the MII and checks to see if an interrupt occurred and if it was the correct one.

## Loopback Tests

This set of test are similar to the Internal Wrap test but transmit the frame through the MII Registers and the PHY depending on the Loopback test. Different Sets of Loopback Tests can performed on different PHYs.

### Internal 10BaseT

- MII Loopback - Causes the PHY to wrap the Tx data to the Rx data at the MII interface.
- Full Loopback - Causes the PMI to wrap the Tx data to the Rx data at the furthest point possible.

## LED Test

To perform the LED test the **-L** switch must be specified when running TLANDIAG.

The LED tests the two lights located on the back of your DockMate Net Ready near the network connector and are visible through the small access holes. The test runs through a self-automated process of flashing the two LEDs. The pattern that should be observed on the LEDs is indicated to the user on the screen. The pattern is as follows (while looking at the docking station upright and from the back):

LEFT OFF    RIGHT OFF

LEFT ON     RIGHT OFF

LEFT OFF    RIGHT ON

LEFT ON     RIGHT ON

# Diagnosics

If the pattern on the board is not identical to the one indicated, an error has occurred.

## Display Mode

Using the `-D` switch causes `TLANDIAG` to display the contents of a specified register on the screen and to the `TLANDIAG.REP` file. For example, to display the contents of the PCI Configuration Register and the contents of the EEPROM the command line argument would be:

```
TLANDIAG -DE -DP
```

For a complete list of display switches, refer to *TLANDIAG Options* earlier in this appendix.

## Network Interface Card Info

The Network Interface Card Info appears at the end of every report. It provides the user with a listing of the I/O Base address and Interrupt Request Level obtained from the card's PCI Configuration Register. The burned in Ethernet Address is also given. The Generic ID and link status of the internal and external PHY are reported. The PCI Slot number occupied by the card is additionally displayed.

## Diagnostic Fixes

If this test is run on a busy network, it is possible to receive the **Not Enough Frames Left to Train With** error when training is actually possible.

This problem does not occur in the ThunderLAN drivers and will be corrected in a future release of the diagnostics.

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