

*Phoenix*<sup>®</sup>



***NoteDock 2.0 for NT***

***User's Guide***

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Phoenix Technologies Ltd.  
411 E. Plumeria Drive  
San Jose, CA 95134

Softex Incorporated  
8731 Shoal Creek Blvd.  
Austin, TX 78757

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# *Introduction*

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NoteDock 2.0 for Windows NT gives users the ability to connect portable computers running the Windows NT operating system to portable docking stations.

## *Summary of Features*

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NoteDock 2.0 for NT contains support for the following features.

- Allows a portable system to be hot docked and hot undocked from supported docking stations
- On certain systems, allows the user to hot swap devices to and from a portable device bay
- NoteDock icon appears in two locations: the Windows taskbar and the Windows NT Control Panel
- Compatibility with the Power Management Controller, allowing the user to suspend and resume the portable without affecting the ability to use the docking station or device bay
- Docking and undocking the portable computer while the system is in suspend mode
- Adds the Win32 Device Change API to Windows NT causing docking-station aware applications under Windows 95 to be docking-station aware under Windows NT
- Provides German, French, Italian, Spanish, and Japanese international language support

## *Audience*

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This manual is designed for portable computer users who are familiar with Windows conventions and terminology. Specifically, this includes users who want to:

- Hot swap devices from a portable device bay
- Hot dock and undock a portable computer from supported docking stations
- Dock and undock a portable computer while the system is in suspend mode
- Suspend and resume the portable computer without affecting the ability to use the docking station or device bay
- Use docking-station-aware applications under Windows NT

If you are unfamiliar with the Windows user interface, you will probably want to spend some time learning the fundamental Windows conventions before you read this manual.

## Contents of this Manual

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The *NoteDock 2.0 for NT User's Guide* contains the following chapters.

**Chapter 1 Product Description:** provides an overview of NoteDock 2.0 for NT features.

**Chapter 2 Feature Overview:** provides a detailed description of NoteDock features.

**Chapter 3 Installing NoteDock:** describes how to install the NoteDock software.


**Chapter 4 The NoteDock 2.0 for NT Interface:** describes how to access NoteDock software features from the NoteDock 2.0 for NT Interface.

**Chapter 5 Understanding System Messages:** describes the types of messages that may appear as the portable computer is docked and undocked from the docking station and the messages that appear when devices are added and removed from the portable device bay.

**Glossary:** includes definitions for various terms used in the manual.

## Conventions and Typefaces Used in This Manual

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Choose	Within this manual, the term <i>choose</i> means to select a menu item by highlighting it with the cursor and pressing <b>&lt;Enter&gt;</b> or clicking on it.
<b>SETUP &lt;Enter&gt;</b>	Boldfaced courier type indicates text as it appears onscreen or in a program. It is used in text for instructions and for anything you must type literally (such as <b>A:\SETUP</b> to install a program).
<b>KEY1+KEY2</b>	This indicates a command that requires you press <b>KEY1</b> and hold it down as you press <b>KEY2</b> .
<b>Bold text</b>	Within text, bold-faced type indicates menu options and commands.
<i>Italic text</i>	Within text, italics indicate placeholders, class names, variables, and arrays. In syntax expressions, placeholders represent information that you must provide.
CUSTOM.H	Within text, capital letters represent the names of files and directories.
	This icon indicates material you should take special notice of.

## *Related Documentation*

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You can obtain additional information about Phoenix Technologies' power management applications for Windows NT by reading the following documentation.

- *APM 2.0 for NT User's Guide*, Phoenix Technologies Ltd., July, 1997.
- *BatteryScope 2.0 User's Guide*, Phoenix Technologies Ltd., February, 1997.
- *PowerPanel 2.0 User's Guide*, Phoenix Technologies Ltd., July, 1997.
- *Card Executive 2.0 for NT Supported Card List*, Phoenix Technologies Ltd., 1997.
- *Card Executive 2.0 for NT User's Guide*, Phoenix Technologies Ltd., August, 1997.

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# *Chapter 1 Product Description*

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NoteDock 2.0 for Windows NT enables a portable computer running the Windows NT operating system to connect to a portable docking station. The functionality of the product is similar Microsoft's built-in support for Windows 95. The software uses the Plug and Play BIOS in the portable computer. NoteDock is designed to run on designated portable computer and docking station combinations that must be customized for each portable and vendor licensed to use the product. In addition, device drivers for the docking station must be customized.

The NoteDock software will improve on the support built into Windows NT by adding the capability to hot-dock a supported docking station to a supported portable computer. This capability can be used with port replicators and mini-docks, but not full docking stations.

In addition, the NoteDock software provides an improved user interface and more user-level functionality. The NoteDock software solves the power management limitations of Windows NT and docking stations by allowing the user to suspend and resume the portable computer without affecting the ability to use the docking station. On certain systems, the NoteDock software provides hot swapping of devices in the installed in the device bay of the computer. The user can switch between using a CD-ROM, floppy drive, or battery without having to turn off the computer.

The following chapters describe the features of NoteDock software and provide details about the implementation of the product.

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# Chapter 2 Feature Overview

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The features of NoteDock 2.0 for NT fall into four main categories:

- Hot dock / hot bay capability
- Power Management Capability
- Win32 API compliance
- User interface components

## Hot Docking Capability

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NoteDock 2.0 for NT gives the user the ability to hot dock and hot undock from a portable computer docking station. The NoteDock 2.0 for NT software must be already installed on the portable computer with which a specific docking station is to be used. Configuring the software involves making sure that all the devices in the users docking station are supported with special hot-docking-aware device drivers. NoteDock 2.0 for NT supports the following set of hot-docking-aware devices in the base product:

- 3Com 3C509 ISA Ethernet
- Adaptec APA-1460 ISA SCSI
- IBM Token Ring Adapter
- 3Com 3C905 PCI Ethernet
- Adaptec APA-1480 PCI SCSI
- AMD PCI Ethernet Adapter
- Adaptec AIC-7860 PCI SCSI Controller (NT 4.0)
- DC 21143 Ether Power

Be sure that the docking station you are using has one of these devices. If not, contact your portable system manufacturer to find out whether NoteDock 2.0 for NT is supported on your computer. In addition, you can obtain an updated hardware compatibility list from the Phoenix web site at <http://www.phoenix.com>.

## Hot Bay Capability

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Most portable computers today have a device bay in which the user can insert a battery, CD-ROM, or floppy drive. NoteDock 2.0 for NT supports the hot swapping of a device in that device bay. With built-in Windows NT support, the user must power off the portable computer before interchanging any device in the device bay. With NoteDock 2.0 for NT, the user can replace the floppy drive with a CD-ROM drive while the system is running. Remember that the portable computer hardware must support hot swapping. Check with the manufacturer of your portable computer to find out whether your computer supports hot-bay swapping.

## *Power Management Capability*

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In a portable computer, suspend and resume capabilities are vital. If a portable computer cannot suspend and resume without affecting system functionality, then the usability of portable computer is compromised. However, with the built-in support provided by Windows NT, docking station suspend and resume capability is unsupported.

For example, assume that a user's portable computer is connected to a docking station with a built-in LAN connection. If the user suspends and resumes the portable, the docking station LAN no longer functions. NoteDock works with the Power Management Controller to eliminate this problem. When the Power Management Controller is installed, the user can suspend and resume the portable computer and the docking station LAN continues to function.

**Note:** Your portable computer must have APM 2.0 for NT or PowerPanel for NT installed. Refer to the Phoenix web site at <http://www.phoenix.com> for more information on these products.

## *User Interface Components*

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The user interface gives users access to the functions of the NoteDock software. The interface consists of a docking icon on the Windows NT taskbar and a NoteDock Control Panel available from the Windows NT Control Panel. The NoteDock Control Panel allows detailed control of docking station functions. Through the user interface, you can disable or enable system information messages that are displayed due to docking station events.

## *Win32 API Compliance*

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In Windows 95, Microsoft defined a device management Application Programming Interface (API) as part of the Win32 interface. In Windows NT, no device management API exists. NoteDock 2.0 for NT software, however, adds the Win32 device management API. As a result, applications that are device-management aware under Windows 95 become device-management aware under Windows NT.

# Chapter 3 Installing NoteDock

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Installing NoteDock 2.0 for NT involves performing NoteDock Setup, installing additional device driver software, and verifying information about the software.

This chapter describes:

- Software requirements for NoteDock 2.0 for NT
- Hardware requirements for NoteDock 2.0 for NT
- Installing NoteDock 2.0 for NT software
- Installing additional device drivers in the docking station
- Verifying information about NoteDock 2.0 for NT software

## *NoteDock Software Requirements*

---

NoteDock 2.0 for NT software requires:

- The Plug and Play BIOS interface to perform docking station operations
- If PCI devices are used in the supported docking station, the presence of a Plug and Play compatible BIOS and a PCI 2.1 BIOS to perform PCI related docking operations
- Windows NT 4.0
- APM 2.0 for NT or PowerPanel for NT installed if NoteDock Power Management features are required
- Optionally, Card Executive for NT if your computer docking station has built-in PCMCIA slots

## *Hardware Requirements*

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The recommended minimum hardware and software requirements for a system running NoteDock 2.0 for NT include:

- A 486 or Pentium portable computer
- A docking station, a mini-docking station, or a port replicator with supported for NoteDock 2.0 for NT
- At least 5MB of free hard disk space

## Installing NoteDock 2.0 for NT Software

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Installing NoteDock 2.0 for NT software involves installing components onto your portable computer as follows:

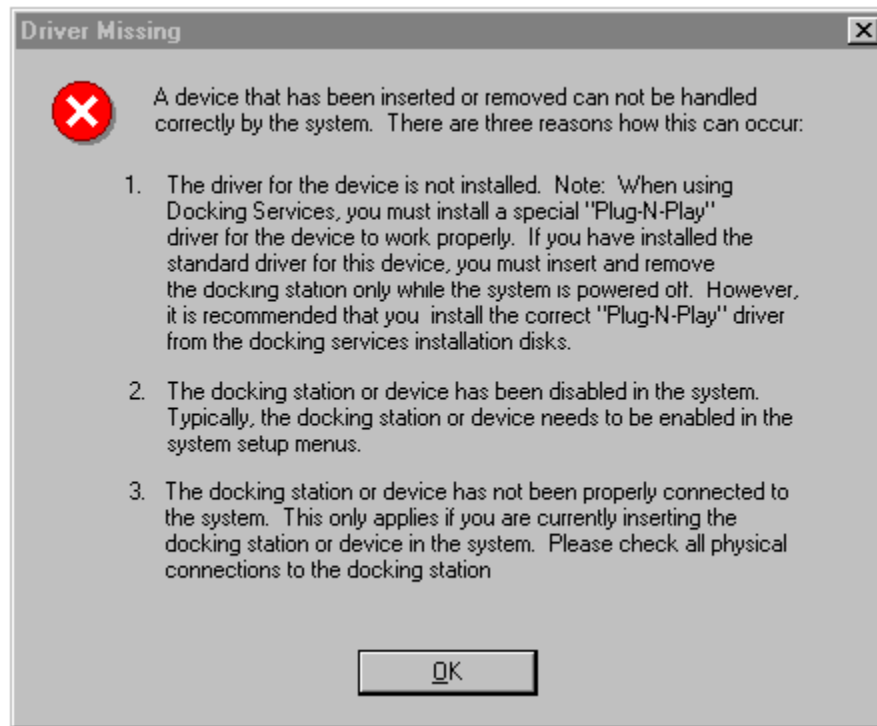
1. Insert Disk 1 of the NoteDock 2.0 for NT software into drive A:  
**Note:** If your installation media is a CD-ROM, then insert the CD-ROM into the CD-ROM drive.
2. Click the **Start** button on the Windows NT taskbar.
3. Choose **Run...** and enter **A:\SETUP.EXE**. **Note:** If your installation media is a CD-ROM, use the drive letter of the CD-ROM drive instead of A:.
4. Follow the directions displayed in the NoteDock for NT installation program. You will have to specify a pathname in which you want the NoteDock 2.0 for NT to be installed.
5. Restart your system when prompted by the setup program. Once the system is running again, you can use the NoteDock 2.0 for NT software.

## Installing Device Drivers

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If no driver for a device is currently installed in the docking station after you have installed NoteDock 2.0 for NT, the Driver Missing dialog box appears. (See Figure 1.) Install the required driver for the docking station device from the appropriate control panel. For example, if the docking station contains a 3Com 3C905 Ethernet adapter, then install the driver from disk 2 of the NoteDock 2.0 for NT software using the Network icon in the Windows NT Control Panel.

**Note:** You must install the driver for the device from disk 2 of the NoteDock software. *Do not* use the driver provided with the device, on the Windows NT CD-ROM, or downloaded from the manufacturer's web site or Bulletin Board Service (BBS).

**Figure 1. Driver Missing Dialog Box**

If the device in the docking station is already installed and configured, the Device Configured dialog box appears. (See Figure 2.)

**Figure 2. Device Configured Dialog Box**

## *Verifying Information About NoteDock software*

After you install the NoteDock software, it is a good idea to verify the version number and other information about the NoteDock program.

To verify information about NoteDock:

1. From the Windows NT Taskbar, choose **Start**, then **Settings**, then **Control Panel**. The Windows NT Control Panel appears.
2. From the Windows NT Control Panel, click on the NoteDock icon with the right mouse button. A drop-down list box appears. Select **Open** from the drop-down list box to display the NoteDock dialog box.

or

Double-click on the NoteDock icon in the taskbar. The NoteDock Control Panel appears.

3. Choose the About tab. The NoteDock Control Panel appears with two folders. The About folder. shows the statistics on the software. (See Figure 3.)

**Figure 3. NoteDock Control Panel**



The About page shows the logo and product information for NoteDock 2.0 for NT. In addition, the operating system platform and operating system version are displayed for technical support use.

# Chapter 4 The NoteDock 2.0 for NT Interface

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The NoteDock 2.0 for NT user interface consists of two items:

- The NoteDock Control Panel
- The NoteDock icon in the system taskbar (See Figure 4.)

**Figure 4. NoteDock Icon in the System Taskbar**



## *Displaying Docking Station Status*

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To display the docking station status :

1. Locate the NoteDock icon on the system taskbar.
2. Move the mouse pointer on top of the icon. The tooltip message appears indicating either “System Docked” or “System Undocked.”

## *Displaying the NoteDock Control Panel*

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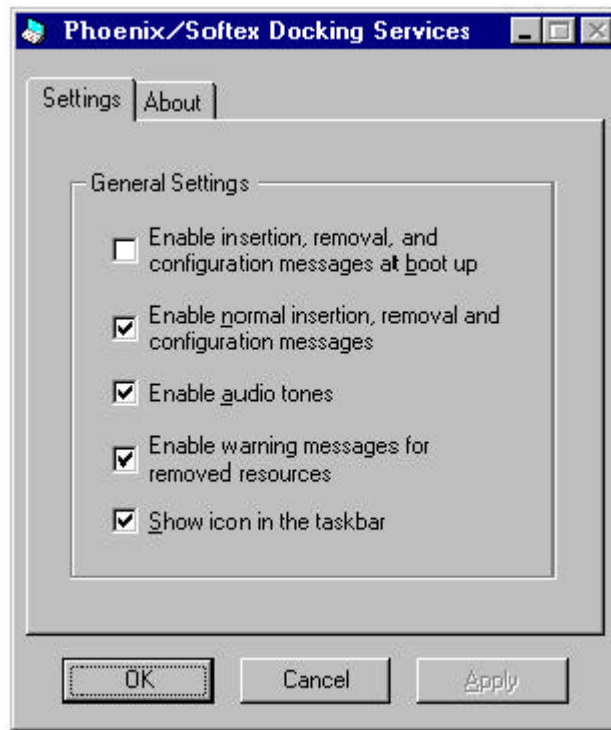
To display the NoteDock Control Panel, complete these steps:

1. Double-click the left mouse button on the NoteDock icon

or

Select NoteDock icon from the Windows NT Control Panel. The NoteDock Control Panel appears with two tabs: Settings and About. (See Figure 5.)/

**Figure 5. NoteDock Control Panel**



2. Choose one or more of the five settings from the Settings tab:

**Enable insertion, removal, and configuration messages at boot up** — Use this option to see messages about docking station events during the boot up process. If this setting is checked and the portable computer is connected to a docking station at boot time, the user receives a message describing this status.

**Enable normal insertion, removal, and configuration messages** — Use this option to see messages regarding the insertion and removal of a docking station. If this setting is checked and the portable computer is docked or undocked from the docking station, a message appears describing this event.

**Enable audio tones** — Use this option to allow an audio file to play during message display. An audio file plays if this setting is checked.

**Enable warning messages for removed resources** — If this setting is checked, a warning message appears when the portable computer is undocked from a docking station. The warning message tells the user to close any open files or resources used by the docking station devices.

**Show icon in taskbar** — If this setting is checked, the Taskbar icon is displayed on the Taskbar.

3. Click the **OK** or **Apply** button to save changes in the settings or the **Cancel** button to return to the original settings.

# Chapter 5 Understanding System Device Messages

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System Device messages appear on the portable computer when:

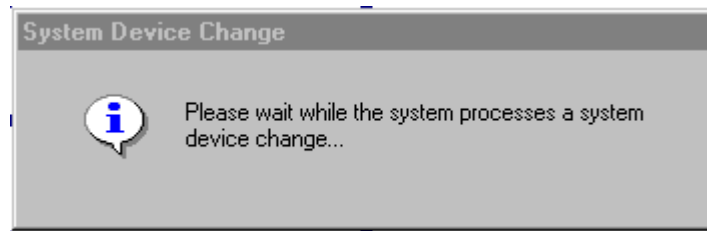
- You connect the portable computer to the docking station
- You remove the portable computer from the docking station
- Power Management events occur
- Configuration errors occur

## Messages When Connecting and Removing the Portable

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When a portable computer is connected to the docking station or the system has been undocked, the System Device Change dialog box appears. (See Figure 6.)

**Figure 6. System Device Change Dialog Box**

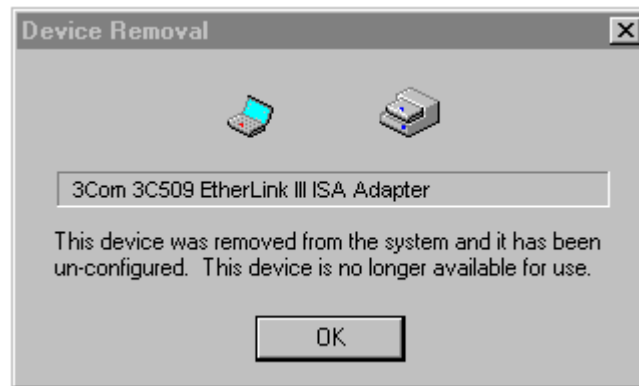


## Messages When Removing Devices

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When a device is removed from the system, the Device Removal dialog box appears. (See Figure 7.) The Device Removal dialog box appears for each device removed from the docking station.

**Figure 7. Device Removed Dialog Box**



## *Messages Caused by Configuration Errors*

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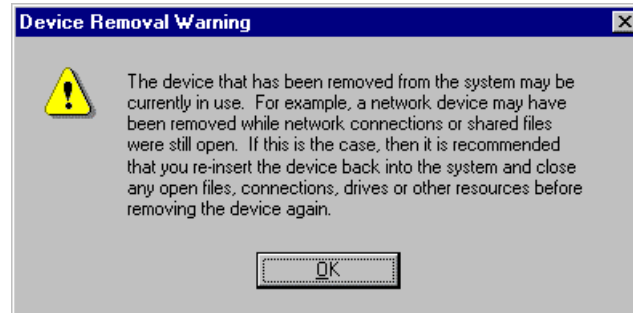
If a driver configuration error has been detected, the Device Configuration Error dialog box appears identifying the device that caused the error condition. (See Figure 8.) This message indicates that the settings for the device driver for the docking station device are incorrect. The user must select different settings for this device from the Control Panel.

**Figure 8. Device Configuration Error Dialog box**



If a device that is in use is removed from the system, NoteDock 2.0 displays a warning message informing you that the device may be used by other system resources. If the device is being used, NoteDock suggests that you re-insert the device.

**Figure 9. Device Warning Dialog Box**

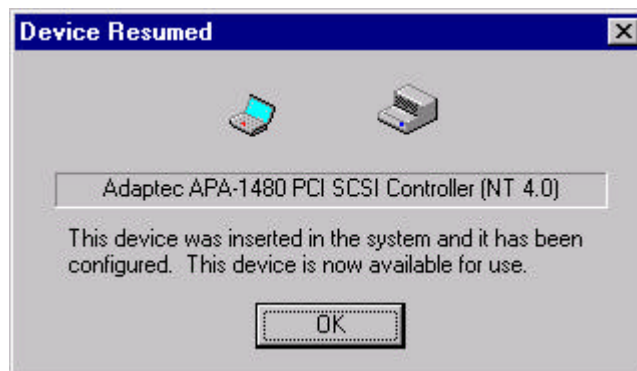


## *Messages Caused by Power Management Events*

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If a Power Management event occurs in the portable computer, the Device Resumed dialog box is displayed when the device is reconfigured and available for use again. For example, if the portable computer connected to the docking station is suspended, then the message shown in Figure 10 is displayed when the system resumes.

**Figure 10. Device Resumed Dialog Box**



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# Glossary

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## **BIOS**

The Basic Input Output System, or BIOS, is software built into a system, specifically in some type of Read Only Memory (ROM) device. The primary purpose of the BIOS is to test and initialize the system components and then to boot the operating system. The BIOS also provides the low-level input/output service routines for the various peripheral devices connected to the computer. The BIOS can provide additional functionality to the system such as the support required for plug and play.

## **Cold Docking**

Cold docking occurs when the portable is powered off. *See also, Docking.*

## **Device Driver**

A software program that links a peripheral device with an operating system by translating and transmitting data so the operating system knows how to handle the peripheral device. *See also, Driver.*

## **Device Bays**

Device bays allow for the insertion or removal of different individual devices into a single connector and are similar to docking stations.

## **Docking**

Docking is the act of connecting the portable computer to the docking station.

## **Docking Station**

A hardware platform which, when connected to a portable computer, extends the features and functionality of that computer and requires system resources.

## **Docking System**

A docking system consists of a portable computer and a docking station

## **Driver**

A software program that links a peripheral device with an operation system by translating and transmitting data so that the operating system knows how to handle the peripheral device. A driver is also referred to as a device driver.

## **Hot Swapping**

The process of inserting or removing a PC Card into a PC Card slot while the computer system is running.

## **Hot Docking**

Hot docking occurs when the portable is at full power. *See also, Docking.*

## **Plug and Play**

Plug and play allows for devices in a system to be assigned resources such as hardware interrupts and I/O address space without conflicting with other devices. Generally plug and play requires that devices support several possible resource configurations, and that system software is capable of controlling the device.

## **Port Replicators**

Port replicators are devices that extend external connectors but require no system resources. *See also, Docking Station.*

**SMI**

System Management Interrupt which causes the CPU to stop executing its current code and begin executing the SMI handler code.

**Suspend**

Suspend is a power managed state in which the system devices are either powered off or consuming very little power.

**Warm docking**

Warm docking occurs when the portable is in a very low power state, generally suspended. *See also, Docking.*

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