Digital HiNote Ultra

User's Guide

Part Number: ER-P70WW-UA. A01

Digital Equipment Corporation

November 1994

The FCC wants you to know...

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

All external cables connecting to this basic unit must be shielded. For cables connecting to PCMCIA cards, see the option manual or installation instructions.

Battery Information

WARNING: There is a danger of explosion if a lithium battery is incorrectly replaced. Lithium batteries must be replaced with the same or equivalent type recommended by the manufacturer. These batteries must be disposed of according to local ordinances and regulations.

Consult your local Digital Service Center for information and proper servicing.

ATTENTION : Risque d'explosion en cas de mauvais remplacement de la batterie. Utilisez un type de batterie identique ou équivalent à celui recommandé par le febricant. Mettez les batteries au rebut en suivant les instructions ou réglementations en viguer..

Battery Disposal

Recycle or dispose of batteries contained in this product properly, in accordance with local regulations for the battery type as marked on the battery. Prior to disposal or recycling, protect batteries against accidental short circuiting by affixing non-conductive tape across battery terminals or conductive surfaces.

If the battery is not marked, or if your require other information regarding batteries, consult your nearest Digital Service Center.

CAUTION: Keep small batteries away from children.

Real-Time Clock Battery

The following information pertains to the Real-Time Clock battery, which is a coin cell lithium battery.

WARNING: Replace with Sanyo (Part Number: CR1220 only). Use of another battery might risk fire or explosion.

CAUTION:
Battery might explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

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About This Guide

This guide describes how to operate, configure, and troubleshoot the Digital HiNote Ultra notebook computer. This guide, along with the online help in the Digital Program menu should familiarize you with all aspects of the notebook computer.

Audience

This guide is written specifically for anyone using and configuring the Digital HiNote Ultra notebook computer.

Organization

This guide contains the following:

- Chapter 1: *Introduction*—This chapter provides general information about your notebook computer. Information includes: creating a comfortable working environment, how to restart and turn off your notebook computer, security features, and getting help.
- Chapter 2: *Configuring Your Notebook Computer*—This chapter explains how to configure your notebook computer using Setup.
- Chapter 3: *Power Management*—This chapter identifies your notebook computer's power management features for extending the life of your battery pack.
- Chapter 4: *PCMCIA Utilities and Drivers*—This chapter describes how to customize your notebook computer using the supplied utilities for using PC cards or PCMCIA compliant devices.
- Chapter 5: *Connecting External Devices and the Floppy Dock*—This chapter describes how to connect an external keyboard, mouse, monitor, and printer.
- Chapter 6: *Problem Solving and Troubleshooting*—This chapter describes initial and advanced troubleshooting solutions.

- Chapter 7: *Options*—This chapter provides information about options that are available for your notebook computer. Installation procedures are also included.
- Appendix A: *Technical Specifications*—This appendix lists your notebook computer's operating specifications.
- Appendix B: *Notebook Computer Messages*—This appendix describes the Power-On Self Test (POST) and run-time error messages, including recommended corrective actions.
- Appendix C: *Device Mapping*—This appendix contains tables listing your notebook computer's memory map, I/O address map, interrupt map, and DMA map.

Digital Program Menu

Your notebook computer was supplied with a factory installed Digital Program menu that is accessible from the Windows for Workgroups Program Manager. The Digital Program menu enables you to access on-line help information on how to use your notebook computer and specific information about its features. Double-click on the appropriate Digital Program icon for additional information.

> **NOTE:** Digital recommends that you back up your factory installed software in case it is inadvertently deleted or if you need to reinstall any portion of it. Double-click on the Create Backups icon for additional information.

Conventions

Convention Example	Description
cardinfo	An italicized word or phrase represents text or commands you must enter.
`c:\windows>`	Monospaced text indicates information that your computer or software displays.
`[drive letter]`	Italic monospaced text indicates a filename or directory path you must enter.
[Enter]	Square brackets surrounding text represents a keyboard key.
[Ctrl]+[Alt]+[Del]	A + sign indicates that the keys shown should be pressed simultaneously.
1 234 567	Spaces are used in large numbers instead of commas.

Abbreviations

Abbreviation	Meaning
BIOS	Basic input/output system
CMOS	Complementary metal oxide semi-conductor
DMA	Direct memory access
DRAM	Dynamic Random Access Memory
IDE	Integrated drive electronics (internal hard disk drive interface)
IR	Infrared
ISA	Industry standard architecture
LCD	Liquid crystal display
MIC	Microphone
MS-DOS	Microsoft Disk Operating System
PCMCIA	Personal Computer Memory Card International Association
POST	Power-on self test
ROM	Read only memory
VGA	Video graphics array
Windows	Microsoft Windows for Workgroups operating environment

Special Notices

Three kinds of special notices are used in this guide to emphasize specific information.

WARNING: indicates the presence of a hazard that can cause personal injury if the hazard is not avoided.

CAUTION: indicates the presence of a hazard that might cause damage to hardware or that might corrupt data.

NOTES: are used to provide additional information.

Related Documentation

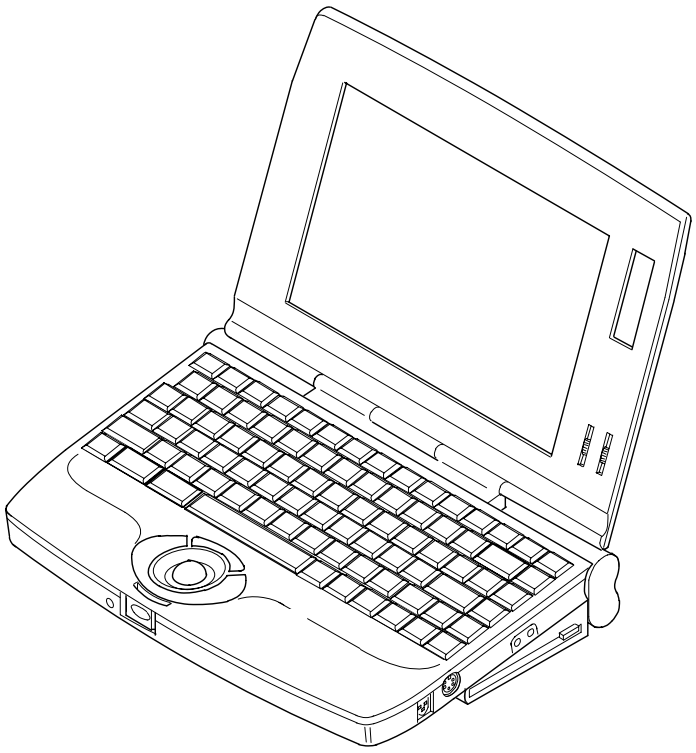
A *Quick Setup Guide* is available as a supplement to the information provided in this User's Guide.

A *When Traveling Card* is available as a supplement to the information provided in this User's Guide.

A Windows for Workgroups-based online help is available as a supplement to the information provided in this User's Guide. This online help includes an online version of this user's guide, an online version of CardView (for use with PC cards or PCMCIA devices), and an online version of additional notebook features. All help files can be accessed through the Digital Program menu.

README files come with your factory installed software. The information contained in these files can help you setup, configure, and operate your notebook computer.

Additionally, these files might contain warning or caution statements. It is important to read these statements.



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Digital HiNote Ultra with Floppy Dock

1
Introduction

The Digital HiNote Ultra is a high-performance notebook computer designed for the mobile professional. Developed using the following state-of-the-art technology, the Digital HiNote Ultra offers the best in class features for a notebook computer.

Microprocessor	Intel 486SX, Intel DX2, and Intel DX4 processors.
Power Management	Your Digital HiNote Ultra has built-in power management features that automatically switch your notebook computer into power-saving modes or allows you to set specific power saving options depending on how you use your notebook computer. Refer to Chapter 3, “Power Management” for additional information on accessing and using your notebook computer’s power saving features.

Onboard Video	Your notebook computer offers the latest in flat-panel LCD technology as well as support for external, high-resolution, variable-frequency analog monitors (both interlaced and non-interlaced operating modes).
PCMCIA Interface	Your notebook computer contains two PCMCIA slots for high-speed data transfers. You can use two Type I or II PCMCIA cards or one Type III PCMCIA card. All slots accept 3.3 V dc or 5 Vdc PCMCIA cards. Refer to the online help in the Digital Program menu and Chapter 4, "PCMCIA Utilities and Drivers," for additional information on using PCMCIA cards.
Business audio standard	Most Digital HiNote Ultra notebook computers are equipped with 16-bit business audio circuitry that supports Sound Blaster compatible software applications. These notebook computers have a built-in speaker and microphone as well as one 2-pin Line-Out or Stereo-Out jack and one 2-pin Line-In or MIC-In jack that enables you to connect headphones and other external audio devices. Business audio models also come with factory installed Microsoft Windows Sound System software. Go to the Windows Sound System program group in the Windows Program Manager for additional product information. Business audio is not available on 33 MHz models.

Infared (IR)	Your notebook computer integrates an Infrared (IR) interface. You can use this interface to transfer data between the Digital HiNote Ultra and similarly equipped devices, such as a computer, printer, or electronic organizer. Refer to the Tranxit Quick Reference Guide for more information.

The remainder of this chapter provides additional information about creating a comfortable working environment, restarting and turning off your notebook computer, using security, and obtaining help.

Providing a Comfortable Working Environment

Use the following tips to help minimize eye strain and body fatigue when operating your notebook computer.

WARNING: If you experience pain or discomfort while using your notebook computer, take a rest break. Review the information given below if the pain or discomfort continues after resuming use; stop and report the condition to your job supervisor or physician.

- Adjust your chair so that:
  - Your feet are flat on the floor; use a footrest if needed.
  - Your legs form a right angle to the floor.
  - The backs of your knees are free from the chair seat.
  - Your body weight rests on your spine while supporting the lower back region.

- Adjust your notebook computer so that:
  - Your wrists are straight and supported.
  - Keyboard and trackball or external keyboard and mouse are at elbow height.
  - Your elbows are close to your sides, with your upper arms perpendicular to the floor.
  - You maintain a neutral neck posture with the top of the display no higher than eye level.
- Adjust your display and lighting so that:
  - Light is directed away from the screen to reduce glare. Look away to distant objects frequently. Use the tilt and swivel capabilities of your LCD or external monitor to place it in the most comfortable position.
  - The screen is the correct distance for your vision.

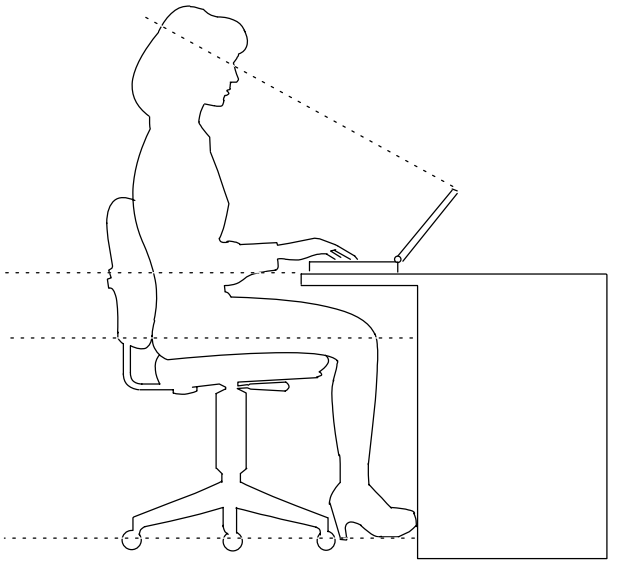


Figure 1-1. Providing a Comfortable Working Environment

Restarting Your Notebook Computer

The following describes the methods for restarting (rebooting) your notebook computer. For information on starting your notebook computer for the first time, refer to the Quick Setup Guide.

Method	How to Invoke	Action Performed
Hard boot	Turn on your notebook computer after it has been powered down. Refer to Chapter 3, “Power Management” for switch locations.	Notebook computer goes through POST as if power is applied for the first time.
Soft boot	Pressing [Ctrl]+[Alt]+[Del].	Notebook computer goes through POST, but does not perform a memory test.

CAUTION: If you press the Reset button while your notebook computer is in suspend mode, all information contained in DRAM will be lost.

Turning Off Your Notebook Computer

> **NOTE:** The information in this section only applies if the Power button is set to **On/Off** in Setup.

Before you turn off your notebook computer, make sure you save and close all open files. If you turn the notebook computer off without saving and closing all open files, you could lose some or all of your work.

Perform the following steps when you turn off your notebook computer:

1. Close any application data files you have open.

   Most application programs prompt you to save the information before closing the application program.

2. Close any applications you have running.

   To close a Windows for Workgroups application, double click on the Control Box located in the upper left corner of the window.

3. Wait approximately 10 seconds for all disk activity to stop and then press the Power button.

   Your notebook computer either turns **Off** or goes into **Suspend** (default setting), depending on how the Power button is configured. Alternatively, you can turn your computer **Off** by pressing **[Fn] + [Power Button]**.

Notebook Computer Security

Notebook computer security is important to avoid theft or accidental loss of your computer software and hardware. The Digital HiNote Ultra provides the following levels of protection:

- User password
- Supervisor password
- Kensington security lock hole

CAUTION: Keep your password information in a safe place. You will not be able to use your notebook computer if you forget your password. If you do happen to forget your password, contact your Digital service representative.

User Password

Your notebook computer has three user password options that you can set to prevent unauthorized access to your notebook computer files. If you set a user password, you need to enter it each time your notebook computer boots, switches from **Standby** to **On**, or **Resumes** from a **Suspend** state.

Perform the following steps to set a user password:

1. Turn on your notebook computer.
2. After POST successfully completes, press **[Fn] + [F3]** to access Setup.

   The Setup main menu appears on the screen.
3. Highlight the Security Setup menu and press [Enter].
4. Highlight the Set User Password field and press [Enter].
5. Type in a four to eight character user password and press [Enter].

   To confirm, type in your user password a second time and press [Enter].
6. Highlight the User Password field and press [Enter].
7. Select the appropriate option and then press [Enter].
8. Exit Setup and reboot your notebook computer.

   Your notebook computer runs POST and then prompts you for the user password you set.

   Your notebook computer will continue to prompt you each time it powers on or resumes.

Supervisor Password

Your notebook computer has a supervisor password option that you can set to prevent unauthorized access to Setup. If you set a supervisor password, you need to enter it each time you want to access Setup. Note that the supervisor password can also serve as a user password where appropriate.

Perform the following steps to set a supervisor password:

1. Turn on your notebook computer.
2. After POST successfully completes, press **[Fn] + [F3]** to access Setup.

   The Setup main menu appears on the screen.
3. Highlight the Security Setup menu and press [Enter].
4. Highlight the Set Supervisor Password field and press [Enter].
5. Type in a four to eight character supervisor password and press [Enter].

   To confirm, type in your supervisor password a second time and press [Enter].
6. Highlight the Supervisor Password field and press [Enter].
7. Select the appropriate option and then press [Enter].
8. Exit Setup and reboot your notebook computer.

   Your notebook computer runs POST and then prompts you for the supervisor password you set if attempting to access Setup.

Kensington Security Lock Hole

You can secure your notebook computer by inserting a Kensington Security Lock into your notebook computer's lock hole.

Getting Help

The following table describes where to find help on specific topics or procedures.

If you need help regarding...	Refer to the
Installing your notebook computer	*Quick Setup Guide*
Support and ordering information	*Customer Support Card* supplied with your notebook computer.
MS-DOS	On-line MS-DOS help.
Microsoft Windows for Workgroups	On-line Windows help.
Using the keyboard, external mouse, trackball, hot keys, and LCD status panel	On-line help. From the Digital Program menu, select the appropriate icon.
System error messages	Information provided in Appendix B of this User's Guide.
Battery information	*Quick Setup Guide*
	On-line help. From the Digital Program menu, select the appropriate icon.
Installing external devices	Information provided in Chapter 5 of this User's Guide.
PCMCIA information	On-line help and CardView on-line help. From the Digital Program menu, select the appropriate icon.
	Information provided in Chapter 4 of this User's Guide.

continued

If you need help regarding...	Refer to the
Power Management	Information provided in Chapter 3 of this User's Guide.
Installing Options	Information provided in Chapter 7 of this User's Guide.
Problem Solving and Troubleshooting	Information provided in Chapter 6 of this User's Guide.
Specific software application problems or questions	Application documentation or contact the software manufacturer.
Notebook computer features, storage devices, operating systems, and notebook computer care	On-line help. From the Digital Program menu, select the appropriate icon.

2

Configuring Your Notebook Computer

Introduction

This chapter provides information on how to configure your notebook computer using Setup. However, your notebook computer is already configured with default settings that were selected for typical notebook computer use.

If you are familiar with utility programs and their uses, refer to the appropriate sections in this chapter to setup or update your notebook computer. Otherwise, carefully read and understand this chapter before attempting to modify your notebook computer's configuration settings.

Running Setup

With the notebook computer Setup, you can select and store information about the notebook computer's hardware and software in the battery-backed memory of the CMOS RAM. This information takes effect each time the notebook computer boots and can be changed each time you run setup.

Use Setup if you need to reconfigure your notebook computer, change power management settings, or after adding or removing additional memory.

To run Setup in all languages except Japanese, perform the following steps:

1. Turn on your notebook computer and wait for the completion of the power on messages.
2. Make a note of any configuration errors listed, and then press **[Fn] + [F3]** to display the Setup menu.

   Alternatively, you can press **[Fn] + [F3]** at any time while running your notebook computer and immediately enter Setup.
3. After making your changes, exit Setup by selecting the Exit option appropriate for your needs.

> **NOTE:** If you entered Setup while running an application, you can return to the same application after exiting Setup. However, some of your changes might only take effect when you reboot.

The Japanese version of CMOS is available as a MS-DOS program. When you run this program and make configuration changes, MS-DOS Setup makes changes to the hardwired version of Setup. The information stored in the hardwired version takes effect each time the notebook computer boots. Therefore, if you make a change in the Japanese Setup and save your changes, they will take effect each time your reboot the notebook computer.

To run the MS-DOS Japanese Setup:

1. Go to the MS-DOS prompt, C:>.

   If you are in Windows, you must exit from Windows and go to the C:> prompt.

2. At the C:> prompt enter:

   CD\Digital

   You are now in the Digital directory.

3. Enter the following:

   SETUP

   Your screen then displays the MS-DOS based Setup program.

4. After making your changes, exit Setup by selecting the Exit option appropriate to your needs.

Alternatively, Japanese users can at any time enter the English language version of Setup by pressing **[Fn] + [F3]**.

Updating Your Notebook Computer's Configuration

The following sections list Setup options you can update. When updating, keep the following in mind:

→ ←	Cursor keys that move the cursor to the right and left
↑ ↓	Cursor keys that move the cursor up and down
`Tab`	Moves the cursor between menu items
`ESC`	Closes the current menu
`Enter`	Accepts the current selection
`Space bar`	Selects the current option

NOTE: You can also use your trackball where appropriate.

- You can also press the key that corresponds to a menu item's highlighted letter. For example, "A" for Advanced in the Power Option, or field.
- From the Defaults menu:
  - Select "Set User Default Settings" to store the current Setup options as the user default values.
  - Select "Load User Default Settings," to set all Setup options to their user defined default values.
  - Select "Load Factory Default Settings," to set all Setup options to their factory default values.
- From the Exit menu:
  - Select "Save" to save all Setup values and exit Setup.
  - Select "Quit" to ignore any changes to the Setup configuration and exit Setup.

Power

Fields	Settings	Comments
Power	Disabled[1] Maximum battery life[2] Maximum performance Advanced	Use disable when you want to disable all power savings for maximum performance, such as when you are running your notebook computer with an International AC adapter or an application that requires all devices running. Use maximum battery life when you want to maximize the time between battery charges. Use maximum performance when you want to maximize the performance of your notebook computer while still retaining some power savings for extending the life of your battery. Select advanced when you want to choose your own power saving features. Use this option only if you have a good understanding of effects your selections have on both battery life and overall performance.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

WARNING: Use only the International AC Adapter provided with your notebook computer or an optional International AC Adapter intended for use with your notebook computer.

continued

Fields	Settings	Comments
Power button	On/Off Suspend/Resume[1][2]	This option enables you to configure the power button to function as an **On/Off** switch or a **Suspend**/**Resume** switch. With the notebook computer on and in **Suspend/Resume** mode, the notebook computer can always be powered off by **[Fn] + [Power]**.
Lid switch	Disabled - no beeps Enabled - with beeps Enabled - suspend/resume[1][2]	This option enables you to configure the lid switch as to how you want the LCD to respond when opening and closing the LCD panel. Refer to Chapter 3, "Power Management" for detailed information on configuring the lid switch.
Suspend beep	Enabled[1][2] Disabled	This option enables or disables the suspend beeps feature. If enabled, the notebook computer emits a series of warning beeps prior to switching into **Suspend** mode.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

continued

Fields	Settings	Comments
Hard disk timer	Disabled[1] 1 Min 2 Min 4 Min[2] 6 Min 8 Min 12 Min 16 Min	Allows you to disable this feature or after a set period of hard disk drive inactivity, forces the hard disk drive into its power saving state.
Standby timer	1 Min 2 Min 4 Min[2] 6 Min 8 Min 10 Min 15 Min 20 Min[1]	Allows you to disable this feature or after a set period of notebook computer inactivity, forces your notebook computer to switch to **Standby Mode**. **Standby Mode** shuts down power to the LCD and backlight, hard drive, diskettte drive, and external devices. However, the keyboard and trackball remains active for input. **Note:** the set period of inactivity is measured from **On** mode.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

continued

Fields	Settings	Comments
Suspend timer	Disabled[1] 5 Min[2] 10 Min 15 Min 20 Min 30 Min 40 Min 60 Min	Allows you to disable this feature or after a set period of notebook computer inactivity, forces the notebook computer to switch to **Suspend**. **Note:** Generally, users set this timer to a time greater than the **Standby** timer. Then the notebook computer goes into **Standby** and then into **Suspend**. For example, if you select a 4 minute **Standby** timer and 15 minute **Suspend** timer, after 4 minutes of notebook computer inactivity, your notebook computer switches to **Standby**. Then after another 15 minutes of inactivity, your notebook computer switches to **Suspend Mode**. **Suspend Mode** is similar to **Standby Mode** except all devices are powered down while the DRAM remains active. However, if you disable the **Standby** timer or set it to a time greater than the **Suspend** timer, then the notebook computer goes directly to **Suspend**.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

continued

Fields	Settings	Comments
PCMCIA socket power	On[1] Off[2] Auto	This option allows you to control power to a PCMCIA card during **Suspend**. If you are using any PCMCIA card, PCMCIA socket power should be set to **On**. This setting is necessary to preserve data and to allow the notebook computer to **Resume** on alarm. For example, with an intalled FAX modem card, an **On** setting for PCMCIA socket power means you can enable Resume on Alarm and your Digital HiNote Ultra notebook then resumes, or wakes up, on a modem ring (See Resume on Alarm in this table.). Use `Auto` if your card can automatically turn socket power **On** and **Off**. See your PCMCIA card documentation to determine if your device suports this feature.
Resume on alarm	Enabled Disabled[1] [2]	This option enables or disables the resume on alarm feature. Enabling this option forces the notebook computer to **Resume** from a **Suspend** state as a result of an internal real-time clock. Several organizational applications contain clock settings that you can set to beep you at specific times. These can activate this feature when resume on alarm is enabled.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

continued

Fields	Settings	Comments
Resume on modem ring	Enabled[1] [2] Disabled	This option enables or disables the resume on modem ring feature. Enabling this option forces the notebook computer to **Resume** from a **Suspend** state as a result of a modem ring. PCMCIA socket power must be on for this function to work with PCMCIA devices.
APM support	Enabled[1] [2] Disabled	Enabling this option causes your notebook computer to wait for Microsoft's APM to request the notebook computer to **Suspend**. APM is Microsoft's Advanced Power Management program, which is part of the MS-DOS operating system. Note that it might take some time for APM to request a **Suspend**. Also note that the APM might never issue this request depending on usage or settings. Disabling this option causes the notebook computer to switch to **Suspend** based on specific timer settings without waiting for APM. If you find that your notebook computer fails to respond to power management settings, such as failing to **Suspend** after 10 minutes, set APM support to "Disabled."

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

System

Fields	Settings	Comments
Set date	Current date	Sets your notebook computer to a specified date.
Set time	Current time	Sets your notebook computer to a specified time.
Boot sequence	Floppy disk then hard drive[1] [2] Hard drive then floppy disk	Setting the floppy disk then hard drive option causes your notebook computer to first try to boot from the floppy disk drive and then from the hard disk drive. Setting the hard drive then floppy disk option causes your notebook computer to first try to boot from the hard drive and then from the floppy disk drive.
PCMCIA boot	Enabled Disabled[1] [2]	Enabling this option causes your notebook computer to boot from an installed PCMCIA card and then from the device set in "Boot Sequence." For example, suppose you select "Enabled" and choose floppy disk then hard drive for the boot sequence. The notebook computer then boots first from the PCMCIA card. Failing to find a PCMCIA card, it boots from the floppy disk drive. If it fails to find a diskette in the drive, it boots from the hard drive. Disabling this option causes your notebook computer to boot from the device set in "Boot Sequence."

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

continued

Fields	Settings	Comments
Quick boot	Enabled Disabled[1] [2]	Enabling this option speeds up your notebook computer boot sequence by skipping certain diagnostic tests. If you want to test fully your notebook computer's hardware each time it boots, disable this option.
Num lock	On Off[1] [2]	Turns on or turns off the numeric keypad keys each time your notebook computer boots.
Trackball	Enabled[1] [2] Disabled	Setting this option to "Enabled" means your trackball is operating. Disable this option if you are using a serial mouse. If you are using a PS/2 mouse and find it is not responding, disable the trackball.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

Device

Fields	Settings	Comments
Serial port	Disabled COM 1 (3F8h - IRQ4) [1] [2] COM 3 (2E8h - IRQ4)	Enables or disables any desired onboard serial port at the specified address.
IR port	Disabled COM 2 (2F8h - IRQ4) [1] [2] COM 4 (2E8h - IRQ3)	Enables or disables any desired onboard IR port at the specified address.
Audio	Disable IRQ5 [1] [2]	Enables or disables your notebook computer's audio feature.
	Disable DMA channel 1 [1] [2]	
Parallel port	Disabled LPT1 (378h - IRQ7) [1] [2] LPT2 (278h - IRQ5)	Enables or disables any desired onboard printer port at the specified address.
Parallel port mode	Standard Bi-directional (PS2) [1] [2] Enhanced parallel port (EPP) Extended capabilities port (ECP)	Standard - Port is used for sending information out. Use this mode when using the port to connect to a standard printer Bi-directional - The port works as a PS/2 compatible mode where it can send and receive data. If you select this option, make sure that the device you are attaching supports bi-directional mode. EPP and ECP provide for better throughput through the port. If you use these settings your device must support EPP or ECP, respectively. **Note:** Make sure your printer supports any mode chosen other than Standard. Refer to your printer's documentation for additional information.

[1] Factory default setting when operating with an International AC Adapter.
[2] Factory default setting when operating with the Battery Pack only.

Security

Fields	Settings	Comments
Set user password	Refer to Chapter 1 for detailed information on how to set this password	This option enables you to create a password that must be entered prior to operating the notebook computer each time it boots, switches from **Standby** to **On**, or **Resumes** from a **Suspend** state.
Set supervisor password	Refer to Chapter 1 for detailed information on how to set this password	This option enables you to create a password that must be entered prior to accessing Setup. The supervisor password can also serve as a user password where appropriate.

(1) Factory default setting when operating with an International AC Adapter.
(2) Factory default setting when operating with the Battery Pack only.

Defaults

Fields	Settings	Comments
Set user default settings		Stores all Setup options as the user default values.
Load user default settings		Sets all Setup options to their user defined default values.
Load factory default settings		Sets all Setup options to their factory default values.

Exit

Fields	Settings	Comments
Save		Saves all Setup values and exits Setup.
Quit		Ignores all changes to Setup values and exits Setup.

3
Power Management

Introduction

Good power management practices can help maximize notebook computer operation while under battery power. Generally, you can use your notebook computer for approximately 3½ hours at full power between battery charges. However, depending on how you set certain built-in power saving features, you can significantly increase this amount.

If you are using your notebook computer with the International AC Adapter, you can forego most of the power saving features and use your notebook computer as you would any desktop or deskside computer.

If you are not an advanced user, start by using the power management settings that were provided by the factory. After using your notebook computer for a period of time, if a factory setting does not fit your specific needs, follow the instructions given in the remainder of this chapter to change any setting accordingly.

Setting Power Management Features

You access your notebook computer's power saving features using Setup or through a Windows for Workgroups-based power management menu. To access features using Setup, simply press **[Fn] + [F3]** any time your notebook computer is powered up. To access features using Windows for Workgroups, simply double-click on the power management icon located in the Program Manager.

If your unsure about what power saving features best fit your needs, a maximum, minimum, or disabled option can be set using Setup (or through Windows for Workgroups). Setting any of these three options automatically configures your notebook computer for the option selected.

> *Refer to Chapter 2, "Configuring your Notebook Computer," for additional information on setting these options.*

If you choose to set your own power saving features, read and understand the information that follows. Depending on your specific needs, certain options need to be set to maximize battery life.

Battery and Performance Hot Keys

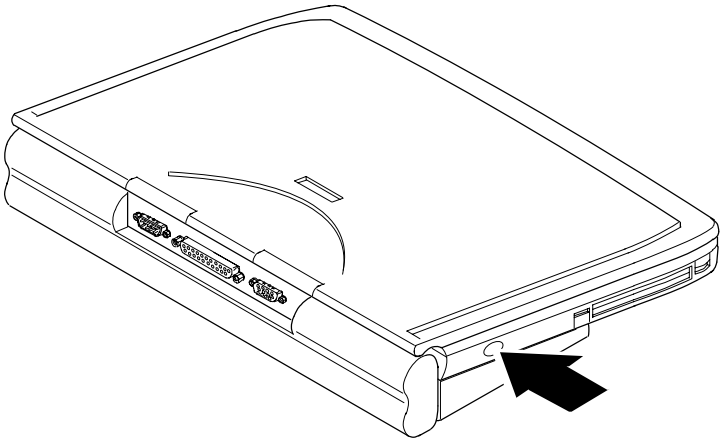
Selecting either of these two options overrides any power saving settings selected in Setup or Windows for Workgroups.

If you want	Mode	Comments
Maximum battery life	[Fn + F1]	Maximizes battery life by lowering the CPU speed. Use this hot key function when your notebook computer is in **On** mode. This hot key function works when your Power button is configured for either **On**/**Off** or **Suspend**/**Resume**.
Maximum performance	[Fn + F2]	Maximizes performance, but places more drain on the battery (increases CPU speed). This hot key function works regardless of how the Power button is configured.

Power Button

The power button is located at the left side of your notebook computer and can be configured to operate in two different modes using the options available in Setup.

Refer to Chapter 2, "Configuring your Notebook Computer" for additional information on selecting either configuration.



DEC00327-2

Figure 3-1. Power Button Location

Suspend/Resume

Setting the power button to **Suspend**/**Resume** enables you to place your notebook computer in a low-power state to conserve battery power.

While in suspend, your notebook computer appears to be off, however, all data is saved in DRAM for up to two weeks (when the battery starts from a fully charged state).

Resume is a transition state in which the notebook computer goes to **On** after a few seconds. After this transition, the application you were previously working on appears where you left off. For example, if you were working in a word processing program when your notebook computer switched to **Resume**, your cursor will appear in the exact spot you left it when your notebook computer returns to **On**.

To switch your notebook computer from **Suspend**/**Resume** back to **On** (full power), either press the power button or raise the lid (if the lid switch is set to **Suspend**/**Resume**).

Refer to the Lid Switch description later in this chapter.

On/Off

Setting the power button to **On**/**Off** enables you to completely power up or power down your notebook computer.

Lid Switch

This switch, operates by opening or closing the lid and can be configured to operate in three different modes:

1. **Suspend**/**Resume** toggle switch. Your notebook computer switches from **Suspend** to **On** when you open the lid and from **On** to **Suspend** when you close the lid.

   To set this mode, select the `Enabled - Suspend/Resume` setting in the “Lid Switch” field of Setup.

2. Disables the LCD and initiates a FAST_BEEP sequence when the lid is closed.

   To set this mode, select the `Enabled - Beeps on Closing` setting in the “Lid Switch” field of Setup.

3. Only disables the LCD when the lid is closed.

   To set this mode, select the `Disabled - No Beeps` setting in the “Lid Switch” field of Setup.

> **NOTE:** You generally select “Disabled - No Beeps” when using an external monitor.

Reset Button

Pressing the reset button turns your notebook computer Off (A, Figure 3-2).

Pressing [Fn] + [Power button] also shuts the notebook computer **Off** regardless of any power management option selected in Setup or Windows for Workgroups.

CAUTION: Make sure you save all data before pressing the reset button. Pressing the reset button clears all data in memory.

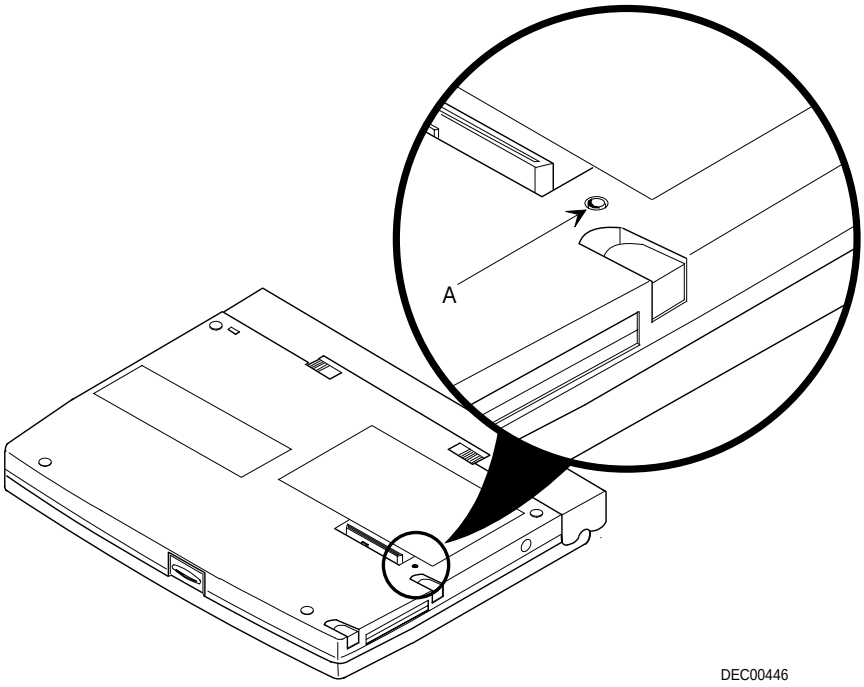


Figure 3-2. Reset Button Location

Suggested Settings

Setup Field	Suggestion	Comments
Power Button or Lid Switch	Suspend/Resume	Depending on how your notebook computer went into **Suspend**, you must either press the power button or raise the cover to switch it back to **On**. Note that it takes a few seconds for your notebook computer turn back on.
Standby Timer	4 Minute Standby Timer	Your notebook computer switches to **Standby** based on an inactivity time period selected in Setup. While in **Standby**, any trackball or keyboard movement will instantaneously switch your notebook computer back to where you left off. Note that longer **Standby** settings put more drain on the battery than shorter **Standby** settings. However, if you take short breaks between working sessions, shorter **Standby** settings might be cumbersome.
Suspend Timer	15 Minute Suspend Timer	Depending on how your notebook computer went into **Suspend**, you must either press the power button or raise the cover to switch it back to **On**. Note that it takes a few seconds for your notebook computer turn back on. Also, if you have the **Standby** timer set, your notebook computer will switch to **Standby** before switching to **Suspend** as shown in Figure 3-2.

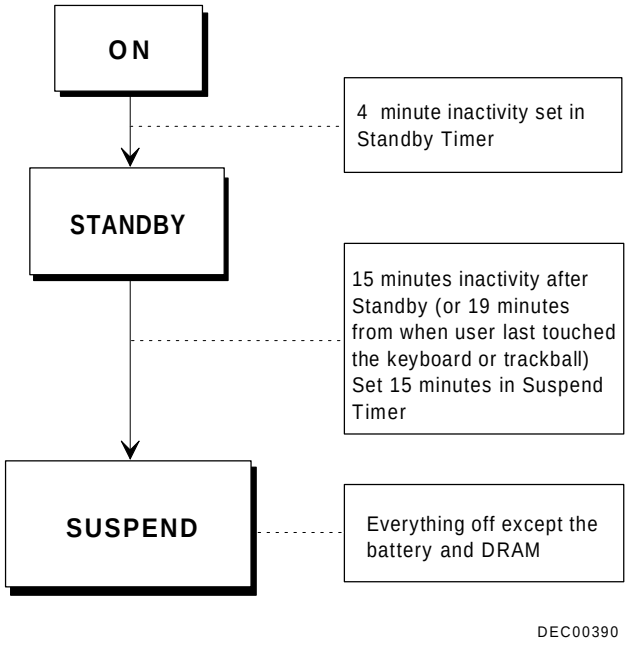


Figure 3-3. Power Management States (Factory Default Timer Settings)

Specialized Cases

Setting	Situation	Comments
PCMCIA Socket Power in **Suspend** set to **On**	Using a PCMCIA FAX/modem	PCMCIA power is on and waiting for a FAX modem ring. In this mode, the PCMCIA FAX modem can operate unattended. However, this causes drain on the battery.
Resume on modem ring set to "Enabled" in Setup	Using a PCMCIA FAX/modem	The PCMCIA modem card is set to **Suspend** but turns on when the modem rings.
Power Button **On**/**Off**	Installing or removing memory or a hard disk drive	Power button must be set to **On**/**Off** in Setup to perform these functions. The reset button can also be used.

4

PCMCIA Utilities and Drivers

Introduction

The supplied PCMCIA utilities and MS-DOS-based drivers enable you to setup and configure your notebook computer for use with a variety of PCMCIA cards. If you are unfamiliar with utilities, device drivers, and their uses, read and understand the information provided in this chapter as well as the information provided in the PCMCIA online help file. The PCMCIA online help file can be accessed from the Digital Program.

> *For PCMCIA troubleshooting information, refer to Chapter 6, "Problem Solving and Troubleshooting."*

The remainder of this chapter describes how to use the following PCMCIA utilities and MS-DOS-based drivers supplied with your Digital HiNote Ultra:

- CardView Utility — this Windows for Workgroups-based utility enables you to identify and allocate the proper notebook computer resources (memory, IRQs, I/O ports, etc.) to make a PCMCIA card operate. CardView also notifies you of changes to your notebook computer, such as when a PCMCIA card is inserted or removed. In addition, CardView provides PCMCIA vendor information once a PCMCIA card is installed.
- CARDINFO Utility — this MS-DOS-based utility enables you to view the status of your PCMCIA slots.
- CSALLOC Utility — this MS-DOS-based utility enables you to identify and allocate the proper notebook computer resources (memory, IRQs, I/O ports, etc.) to make a PCMCIA card operate.
- PCMCIA MS-DOS-based Drivers — these factory-installed device drivers enable you to use your PCMCIA slots and run PCMCIA utilities.

Using PCMCIA Utilities

While running under Windows for Workgroups, always use CardView to allocate notebook resources, to make CardView work, and to view the status.

Refer to the CardView online help in the Digital Program.

If CardView fails to recognize your PCMCIA card and provide status about the card, exit out of Windows and run CARDINFO from the DOS prompt.

Use CARDINFO to tell you about the status of your PCMCIA card when running under MS-DOS. Also use CARDINFO when CardView failed to recognize a card. Refer to CARDINFO in this chapter for instructions on how to run CARDINFO.

If CARDINFO fails to recognize your card and/or provide card status, exit out of CARDINFO and run CSALLOC. CSALLOC automatically reallocates your notebook computer resources to allow it to recognize the PCMCIA card. Refer to CSALLOC in this chapter for instruction on how to run CSALLOC.

If a PCMCIA card still does not work, refer to Chapter 6, “Problem Solving and Troubleshooting.”

CardView

CardView is a user-friendly graphical interface that enables you to access and customize your notebook computer’s PCMCIA subsystem through a menu-driven interface. To access CardView, double click on the CardView icon in the Digital Program menu.

CARDINFO

If you are unable to configure a PCMCIA card using CardView, you can use CARDINFO to scan PCMCIA slots and list important information about any installed PCMCIA card. Run CARDINFO if you need to:

- Know the types of PCMCIA cards you have installed
- Know what notebook computer resources are allocated
- Turn off or turn on power to a PCMCIA slot that contains a card
- Display manufacturer and product information about any installed PCMCIA card
- Know the drive letter for an ATA hard disk or ATA flash disk PCMCIA card
- Know the last error that occurred after inserting a PCMCIA card

To run CARDINFO

1. Turn on or reboot your notebook computer.
2. At the DOS prompt, go to the CardSoft directory that was created for you at the factory.
3. Type:

   cardinfo

   Your notebook displays information similar to the following:

```
Slot 0
Card Type = Token Ring
Manufacturer = <card vendor name>
Product Name = Token Ring

Slot 1
Slot 1 is empty
```

4. Exit CARDINFO following the instructions on your LCD.

CSALLOC

CSALLOC is a DOS-based utility program used to scan your notebook computer for available memory, I/O ports, and interrupts (IRQs). This utility also writes the scanned information to file CSALLOC.INI.

The CSALLOC.ini file is automatically created each time you run CSALLOC. As a result, CSALLOC needs to be run each time you change memory, I/O port, or IRQ settings. To run CSALLOC:

1. Turn on or reboot your notebook computer.
2. At the DOS prompt, go to the CardSoft directory that was created for you at the factory.
3. To scan notebook computer resources type:

   csalloc /s
4. To display notebook computer resources type:

   csalloc /d

   Resources marked with an (R) are reserved for use by PCMCIA cards or another notebook computer component.

   Resources marked with an (A) are already allocated for use by CardSoft.

   Resources marked with an (S) are shared resources that operate together without causing conflicts.
5. To create a new CSALLOC.INI file type:

   csalloc /g
6. Reboot your notebook computer to initiate the CSALLOC.INI file.

PCMCIA MS-DOS Drivers

The following device drivers have been factory installed for you along with the correct device driver CONFIG.SYS statements (these statements also appear in the correct order). Do not add or remove any of these drivers.

```
SSCIRRUS.EXE
CS.EXE
CSALLOC.EXE
ATADRV.EXE
MTSRAMDRV.EXE
MTDDRV.EXE
CARDID.EXE
MS-FLASH.SYS
```

Keep a diskette copy containing your CONFIG.SYS file in case your notebook computer's hard disk drive ever fails. Then you can copy the CONFIG.SYS file to your new hard disk drive.

5

Connecting External Devices and the Floppy Dock

Introduction

You can connect external devices directly to your Digital HiNote Ultra notebook computer. The external connectors and ports can be accessed at the rear of the notebook computer. If necessary, flip the Battery Pack down to access the connectors and ports. The remainder of this chapter describes how to connect external devices to these connectors and port and describes how to connect a Floppy Dock.

Figure Legend	Description
A	VGA port
B	Printer port
C	Serial port

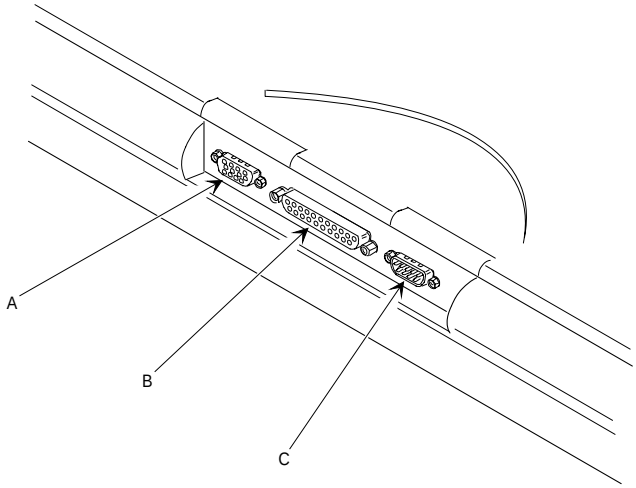


Figure 5-1. External Port Locations

Connecting an External PS/2 Mouse

1. Rotate the mouse cable connector until the arrow marking is on top.

   This marking indicates the keyway (notch) on the mouse cable connector is aligned with the keyway at the notebook computer's socket.

2. Plug the mouse cable connector into the socket.

> **NOTE:** You can only connect an external mouse or an external keyboard. You cannot connect both simultaneously. You might, however, use the serial port to connect a serial mouse. Be sure your mouse supports the port to which you connect. If you do use a serial mouse port, you must disable the trackball using Setup. Contact your Digital sales representative for further information.

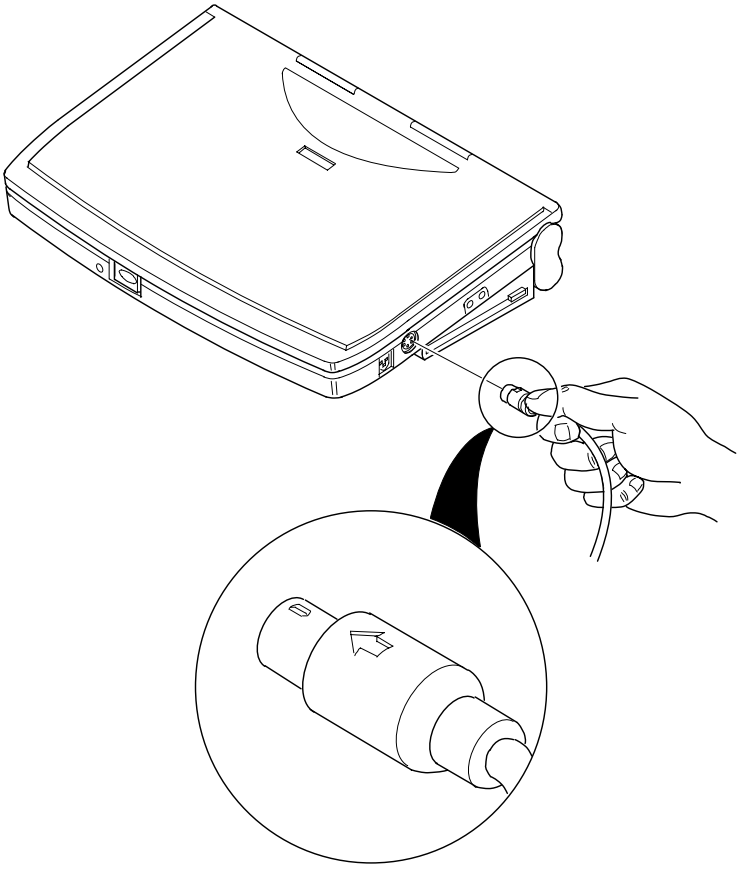


Figure 5-2. Connecting a Mouse

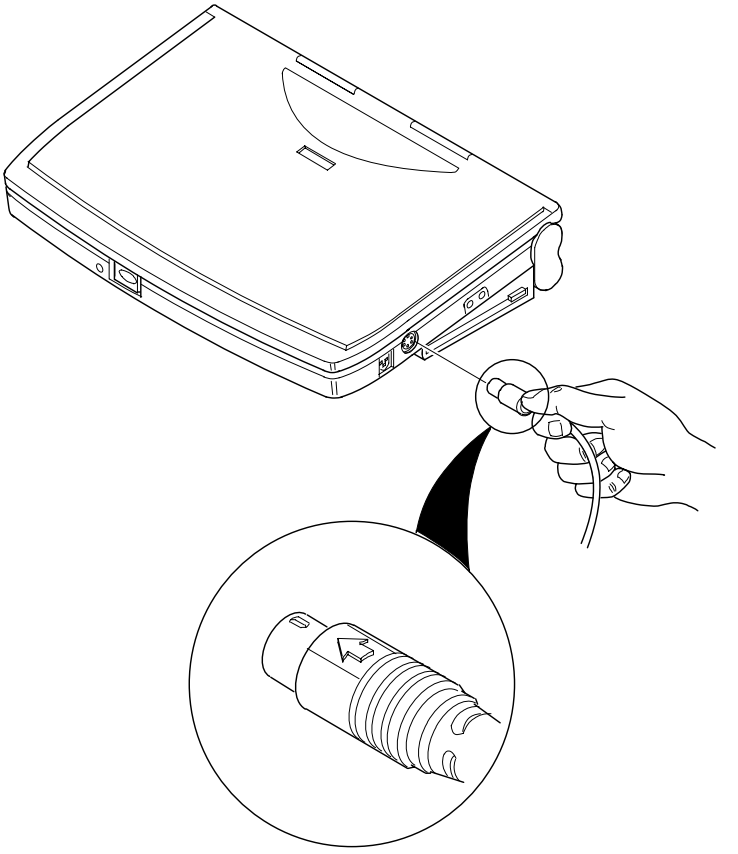
Connecting an External Keyboard

1. Rotate the keyboard cable connector until the arrow marking is on top.

   This marking indicates the keyway (notch) on the keyboard cable connector is aligned with the keyway at the notebook computer's socket.

2. Plug the keyboard cable connector into the socket.

> **NOTE:** You can only connect an external mouse or an external keyboard. You cannot connect both simultaneously. You might, however, use the serial port to connect a serial mouse. Be sure your mouse supports the port to which you connect. If you do use a serial mouse port, you must disable the trackball using Setup. Contact your Digital sales representative for further information.



DEC00357-2

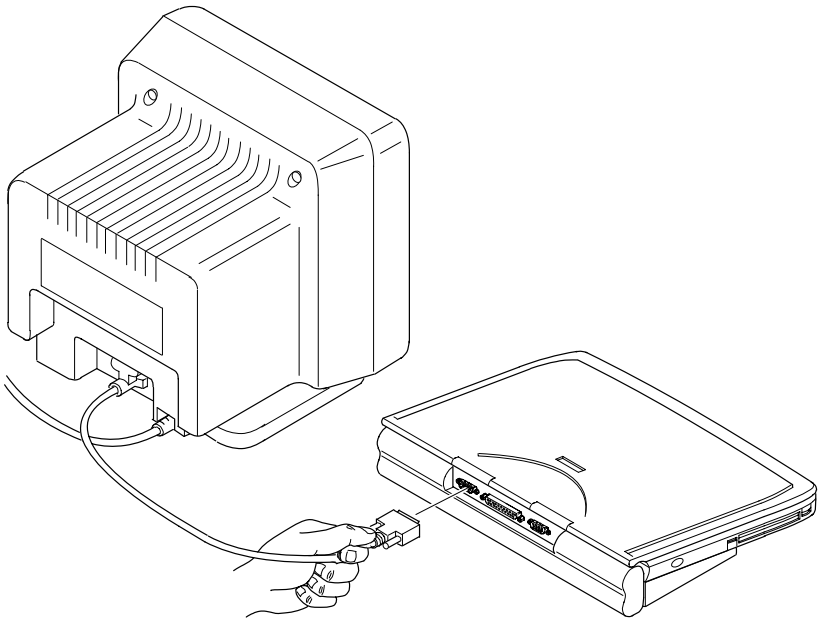
Figure 5-3. Connecting a Keyboard

Connecting a Monitor

1. Connect and fully tighten the monitor signal cable to the VGA connector at the rear of the notebook computer.
2. Connect to an appropriate wall outlet the monitor's power cord, which is at the rear of the monitor.
3. Turn the monitor on.
4. Press **[Fn] + [F4]** until the monitor displays or both the monitor and the notebook computer LCD screen display.

   Note that all 33 MHz models support only CRT or LCD display. They do not support simultaneous display.

CAUTION: Make sure the monitor is turned off before making the wall outlet connection.



DEC00358-2

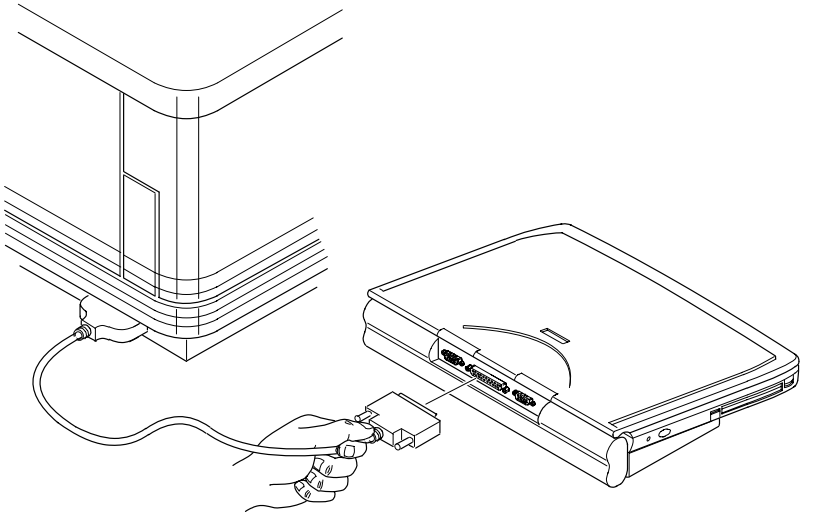
Figure 5-4. Connecting a Monitor

Connecting a Printer

1. Connect and fully tighten the printer signal cable to the parallel (LPT) port connector at the rear of the notebook computer.
2. Connect to an appropriate wall outlet the printer's power cord, which is at the rear of the printer.

   Refer to your printer's documentation for configuration information and to Windows for Workgroups online help for general information about printers.

CAUTION: Make sure the printer is turned off before making the wall outlet connection.

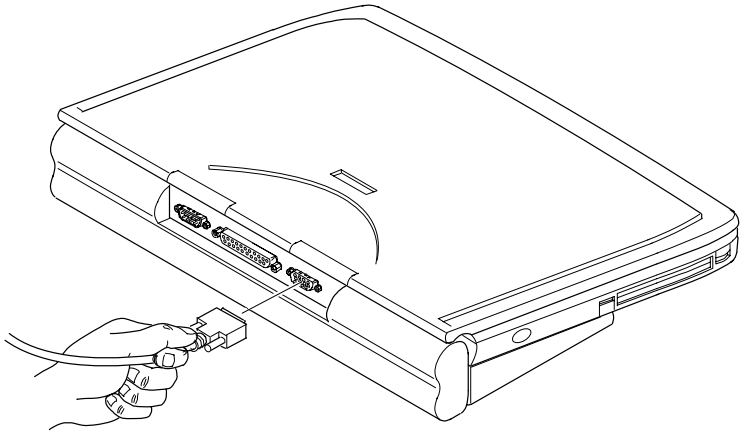


DEC00358-3

Figure 5-5. Connecting a Printer

Connecting a Serial Device

Connect a serial device, such as a serial modem, to the serial port connector as shown.



DEC00327-3

Figure 5-6. Connecting a Serial Device

Connecting the Floppy Dock

A Floppy Dock comes with your notebook computer and contains a 3½-inch diskette drive. To connect the Floppy Dock:

1. Turn off your notebook computer and close the lid.
2. Carefully turn your notebook computer over to gain access to the Floppy Dock connector.
3. Slide the compartment door open.

> **NOTE:** The compartment door must be closed when the Floppy Dock is not installed.

4. Insert the two Floppy Dock hooks into the clips next to the Battery Pack and then press into place (A, Figure 5-7).
5. Swing the Floppy Dock down onto the notebook computer.

6. Press the Floppy Dock into place.
7. Secure the Floppy Dock to your notebook computer using the thumbscrew (B, Figure 5-7).
8. Turn your notebook computer right-side up, raise the lid, and continue operation.

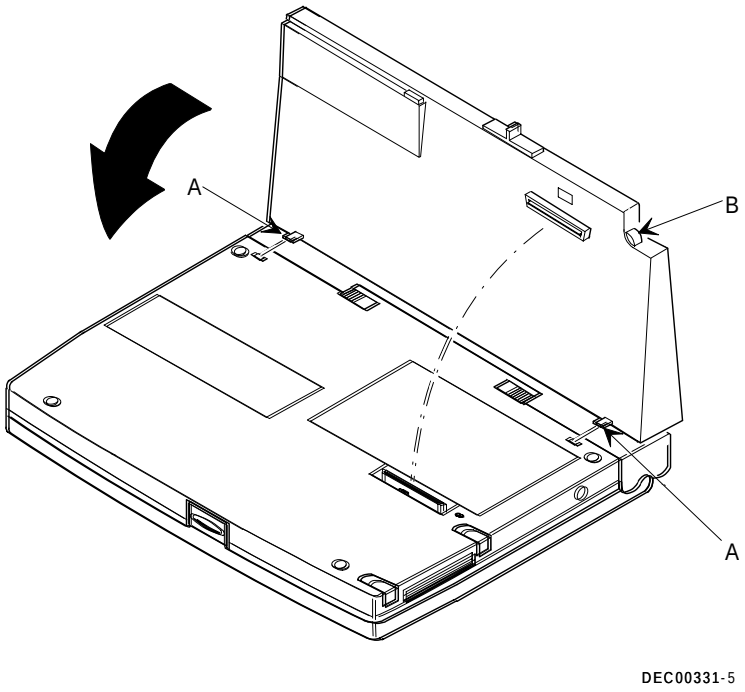


Figure 5-7. Connecting the Floppy Dock

6

Problem Solving and Troubleshooting

This chapter provides initial troubleshooting procedures and the following troubleshooting tables listing specific problems, probable causes, and recommended actions to take if your notebook computer fails after you configure it or after you install optional hardware or software.

- Notebook Computer Troubleshooting
- PCMCIA Troubleshooting
- LCD Troubleshooting
- Audio and IR Troubleshooting

Refer to Appendix B, "Notebook Computer Messages," for a list of error messages that might appear during normal operation.

Refer to the documentation supplied with additional options if you are experiencing problems with specific options that you have installed.

Initial Troubleshooting

If your notebook computer beeps, it might be operating normally and is only trying to notify you of a condition. Check the beep table in this chapter for information about these beeps. If the beeps do not match those given in this chapter, refer to Appendix B, “Notebook Computer Messages,” for beep codes.

If there are no beeps and you are experiencing a problem with your notebook computer, follow these initial troubleshooting steps.

1. Are you running your notebook computer using the Battery Pack or with an International AC Adapter?

   Running with the Battery Pack:

   Check that your Battery Pack is charged by connecting your International AC Adapter.

   If the amber light goes on, your Battery Pack is charging. You can either use your notebook computer while the Battery Pack is charging or wait until it is fully charged.

   If the amber light fails to go on, go to "Running with the International AC Adapter."

   Running with the International AC Adapter:

   Check that your International AC Adapter is properly connected and the connections are secure.

2. Press [Ctrl] + [Alt] + [Del] to soft boot your notebook computer.

   If your notebook computer fails to boot, turn it off, wait a few seconds, and then turn it back on.

3. When you reboot, does your notebook computer display any error messages?

   If yes,

   Refer to Appendix B, "Notebook Computer Messages," and correct the error.

   If no,

   Proceed to step 4.

4. Turn your notebook computer over and press the reset button. Refer to Chapter 3, for button location.

5. When installing PCMCIA cards did your notebook computer sound two short beeps?

   If yes,

   The PCMCIA card was installed correctly.

   If no,

   Refer to the PCMCIA troubleshooting table provided later in this chapter and to Chapter 4, "PCMCIA Utilities and Drivers."

6. Check that all the necessary video, printer, and application device drivers are properly installed.

   Refer to the documentation that was provided with the applicable device or application for information on device drivers and how to install them.

7. Run Setup to ensure that your notebook computer is appropriately configured.

   Refer to Chapter 2, "Configuring your Notebook Computer."

8. Check the troubleshoot tables in this chapter and follow the suggested actions. When using these tables, match your notebook computer's problem to the problem listed in the tables.

9. Contact your Digital service representative.

   NOTE: If you need to return your notebook computer or a failed component, pack it in its original container and return it to an authorized Digital representative or call your service representative for assistance and recommendations.

Notebook Computer Troubleshooting

Problem	Possible Cause	Action
No response when the notebook computer is turned on while running on battery power.	Battery pack is discharged.	Charge the Battery Pack.
	Defective Battery Pack.	Replace Battery Pack.
	Notebook computer hung.	Open the keyboard assembly, press the reset button, close the keyboard assembly, and press the Power button.
	Main logic board failure.	Contact your Digital service representative.
No response when the notebook computer is turned on while connected to an external power source.	International AC or Auto Adapter is not connected properly.	Make sure either adapter is properly connected to the notebook computer and to the ac power source.
	No power from the external power source, such as a wall outlet.	Check the external power source by connecting another device to it. If the external power source still does not work, try another power source.
	Main logic board failure.	Contact your Digital service representative.
Application software or files failing to load with an out of memory error message.	Insufficient notebook computer memory.	Install an optional memory module.
		If you are not using PCMCIA cards, comment out the driver statements in your CONFIG.SYS file. This will prevent the drivers from being loaded into memory.

WARNING: There is danger of explosion if a Battery Pack is incorrectly replace. You must replace the Battery Pack with the same or equivalent type recommended by the manufacturer. Depending on your locality, your notebook computer's Battery Pack might be considered hazardous waste. Make sure you follow any state or local statue in disposing of an old Battery Pack.

continued

Problem	Possible Cause	Action
Notebook computer operates incorrectly after installing an optional memory module.	Memory module installed incorrectly.	Remove memory module and reinstall.
	Memory module failed.	Replace memory module.
Notebook computer does not boot from the hard disk drive.	Operating system software is not installed on the hard disk drive.	Install the appropriate operating system.
	Hard disk drive is not correctly formatted or the requested partition does not exist.	Format the hard disk drive or partition the hard disk drive using the backup version of the operation software you created.
	There is no software on the requested partition.	Install software on the requested partition.
		See drive type label on drive or consult drive documentation.
	"Drive A" is selected from the "First Boot" option in Setup.	Remove the diskette from drive A.

WARNING: Turn the power to OFF before removing the memory access cover. If your Power button is configured for **Suspend/Resume**, you must reconfigure the Power button to OFF in Setup or press the Reset button to turn the power OFF.

continued

Problem	Possible Cause	Action
Notebook computer does not boot from the diskette drive.	For Japanese users: did not run MS-DOS based version of Setup.	Run the MS-DOS based version of Setup (Refer to Chapter 2).
	"Drive C" is selected from the "First Boot" option in Setup.	Enable "Drive A" via Setup. Press **[Fn] + [F3]** to enter Setup.
	Diskette does not contain system files.	Insert a diskette with the correct system files.
	Diskette drive is empty.	Insert a diskette that contains an operating system.
	Diskette is worn or damaged.	Try another diskette.
	Diskette drive failed.	Contact your Digital service representative.
Target diskette drive cannot read or write information.	Diskette is not formatted or formatted incorrectly.	Format the diskette.
	Diskette is worn or damaged.	Try another diskette.
	Diskette is write-protected.	Slide the write-protect switch so the hole is not visible.
	Diskette drive is empty.	Insert a diskette.
	Diskette drive failed.	Contact your Digital service representative.
No response to keyboard commands.	Keyboard is defective.	Contact your Digital service representative.
	Notebook computer is hung.	Turn your notebook computer over, press the reset button, and then press the Power button.
Notebook computer locks up.	User or Supervisor password forgotten.	Contact your Digital support help line.
Cursor moves erratically across the LCD.	Trackball needs cleaning.	Refer to the trackball on-line help contained in the Digital Program Menu.

If Your Notebook Computer Beeps

Problem	Possible Cause	Action
Notebook computer sounds a sequence of three beeps every 15 seconds.	Notebook computer entered a “Low Battery” condition.	Connect the notebook computer to an external power source and charge the battery.
Notebook computer sounds a sequence of three beeps every second.	Notebook computer entered a “Battery Very Low” condition.	Save your work and immediately connect the notebook computer to an external power source. If an external power source is not available, save your work and then allow your notebook computer to enter its Suspend mode.
Notebook computer sounds a sequence of five beeps.	A “CPU Extreme Temperature Alert” condition was detected.	Your notebook computer will automatically shutdown after it beeps. Remove your notebook computer from the extreme temperature area.

PCMCIA Troubleshooting

Problem	Possible Cause	Action
PCMCIA card does not work.	Notebook computer not turned on.	Turn notebook computer on.
	Card improperly inserted.	Insert the card label-side up. Card is inserted properly if you hear two short beeps. If not, refer to specific card troubleshooting later in this section.
	Card not supported.	Contact your Digital service representative.
	Device drivers missing or improperly installed.	Refer to Chapter 4, "PCMCIA Utilities and Drivers."
Modem card does not work from CardView (single beep).	Card improperly configured or configuration conflict.	Select the configuration option in CardView and run the configure modem option. Select configure and the insertion slot number of the faulty card. Change the COM port setting so there is no conflict.
Modem card does not work in CardSoft (double beep).	Communications software improperly configured.	Refer to your communications documentation and change the settings of the software to match those shown in the CardSoft display.

continued

Problem	Possible Cause	Action
Network card does not work (single beep).	Configuration error or card not supported.	If you are in CardView, exit Windows for Workgroups and enter at the DOS prompt: *cardinfo /v* Locate the latest error message in the list and then write down the entire message that appears after the = sign. Return to CardView and select the network card configuration menu in CardView. Change the value of the item causing the latest error.
Network card does not work despite a double beep, which indicates that the network card was properly recognized and configured by your notebook computer.	Network incompatibility.	Further adjustments might need to be made depending on your network configuration. Refer to your network documentation. Contact your service representative.

continued

Problem	Possible Cause	Action
SRAM card does not work (single beep).	Missing device driver(s).	Make sure the MTDSRAM.EXE driver is properly installed on your hard disk drive. If not, reinstall it using your backup diskettes. Make sure the SRAMDRV.EXE or MEMDRV.EXE drivers are properly installed on your hard disk drive. Check your CONFIG.SYS file and make sure the SRAMDRV.EXE or MEMDRV.EXE device driver statements appear and are in the correct order. Refer to Chapter 4 for additional information. If problems still persist, contact your Digital service representative.

continued

Problem	Possible Cause	Action
SRAM card does not work (double beep).	Incorrect drive letter assigned.	Remove SRAM card and boot your notebook computer. Note the drive letter information displayed on the LCD. Insert the SRAM card and then type the correct drive letter at the DOS prompt.
	SRAM card not formatted.	Insert the SRAM card and then type: *format [drive letter]:* to format the SRAM card. If problem still persist, call your Digital service representative.
ATA card does not work (single beep).	Card not supported.	Contact your Digital service representative.
ATA card does not work (double beep).	Missing device driver(s)	Check your CONFIG.SYS file and make sure the ATADRV.EXE or MEMDRV.EXE device driver statement appears and is in the correct order. Refer to Chapter 4 for additional information. Contact your Digital service representative.

LCD Troubleshooting

WARNING: High voltages exist inside the Liquid Crystal Display (LCD) enclosure (notebook computer's screen display). To prevent electrical shock, do not open the LCD enclosure. If the LCD needs repair, return it to your Digital service representative.

Problem	Possible Cause	Action
Power is on, but there is no LCD display.	LCD brightness and contrast incorrectly set.	Adjust the LCD brightness and contrast using slide levers next to the LCD display. (CT models have only a brightness lever.) Refer to the on-line help contained in the Digital Program.
	Notebook computer switched to **Suspend**.	Press the Power button.
	Notebook computer LCD Timer Setting went into effect.	Press a key on the keyboard or move the trackball cursor.
	Notebook computer running in CRT mode.	Press **[Fn] + [F4]** until the LCD screen displays.
	Screen saver utility installed.	Press a keyboard key or click on the trackball.

Audio and IR Troubleshooting

Problem	Possible Cause	Action
Sound is not working	Incorrect IRQ and DMA channel selected.	Run Setup and set the correct IRQ and DMA channel (IRQ5 and DMA channel 1).
	Drivers are not loaded.	In the Windows Main Menu, select the Control Panel icon. Select the Drivers icon and ensure the ESS Sound chip is selected. If not, select the Add button and choose the ESS Sound chip.
	Audio volume needs to be increased.	Press **[Fn] + [F7]** to turn on the internal audio feature.
File does not transfer.	Your IR port is over a meter (3 ft) away from the desktop computer's IR accessory.	Position your notebook within a meter (3 ft) or less.
	IR port is not on the same plane with your desktop computer's IR accessory.	Make sure your notebook computer's IR port is in a direct line with your target computer's IR accessory. Refer to your target computer's IR documentation for more information.

7
Options

Introduction

You can purchase the following Digital HiNote Ultra options to use with your Digital HiNote Ultra notebook computer:

- Car Adapter
- Optional Battery Pack
- Battery Charger with International AC Adapter
- International AC Adapter
- Expansion Dock
- Additional Memory (4 MB, 8 MB, or 16 MB)
- Carry Cases (Nylon Travel Case and Executive Leather Portfolio)

The remainder of this chapter describes how to install and use the Car Adapter, Battery Charger with International AC Adapter, Expansion Dock, and additional memory.

Installing the Car Adapter

The optional Car Adapter allows you to power your notebook computer using dc power from your car's cigarette lighter.

To use your Car Adapter to power your notebook computer:

1. Connect the adapter's dc power connector to your notebook computer.

WARNING: Use only the supplied International AC Adapter.

2. Connect the adapter's cigarette lighter connector to the car's cigarette lighter.

NOTE: You must have power going to the cigarette lighter connector. This situation occurs when the car is running and in some cars occurs when the car is not running. Other cars require that you turn the ignition key to accessary to power the cigarette lighter connector.

Installing the Battery Charger with International AC Adapter

The optional Battery Charger allows you to charge a Battery Pack without installing the Battery Pack at the rear of your notebook computer. This is helpful for charging spare Battery Packs or for charging a battery quickly while using your notebook computer.

To use the Battery Charger:

1. Connect the International AC Adapter to the Battery Charger and then to an appropriate power source (such as a wall outlet).

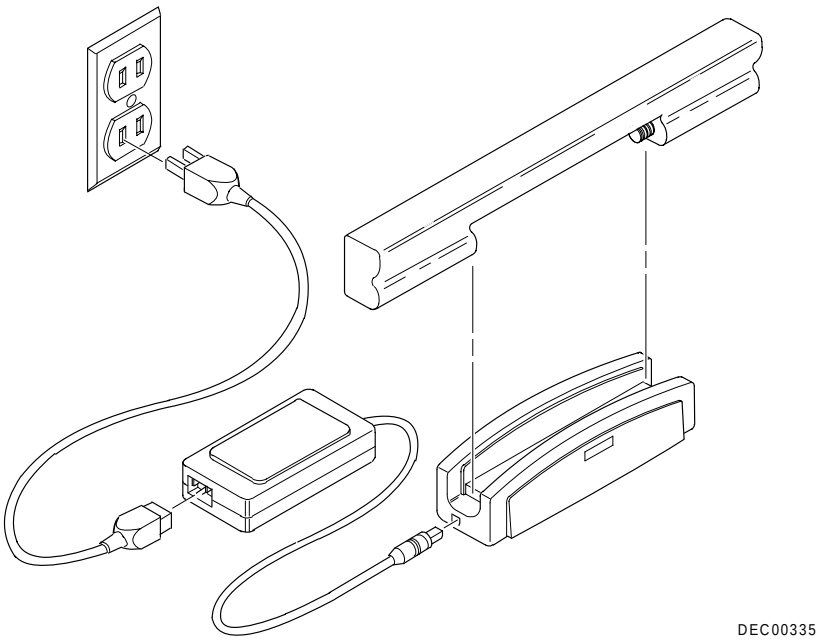


Figure 7-1. Connecting the Battery Charger

NOTE: Make sure that the supplied power cord can be plugged into the power outlet. If not, contact your authorized Digital reseller or sales representative to obtain the correct power cord.

2. Insert a Battery Pack in the Battery Charger. An amber light on the Battery Charger indicates that the Battery Pack is charging; this light goes out when the Battery Pack is fully charged. (A fully drained Battery Pack takes about two hours to charge.)

WARNING: There is danger of explosion if a Battery Pack is incorrectly replace. You must replace the Battery Pack with the same or equivalent type recommended by the manufacturer. Depending on your locality, your notebook computer's Battery Pack might be considered hazardous waste. Make sure you follow any state or local statue in disposing of an old Battery Pack.

Installing the Expansion Dock

This option replaces the Floppy Dock that came with your notebook computer. The Expansion Dock contains a diskette drive and an additional PCMCIA slot. To install this option:

1. Turn off your notebook computer and close the lid.
2. Carefully turn your notebook computer over to gain access to the Expansion Dock connector.
3. Slide the compartment door open.

   NOTE: The compartment door must be closed when the Expansion Dock is not installed.

4. Insert the two Expansion Dock hooks into the clips next to the Battery Pack and then press into place (A, Figure 7-2).
5. Swing the Expansion Dock down onto the notebook computer.
6. Press the Expansion Dock into place.
7. Secure the Expansion Dock to your notebook computer using the thumbscrew (B, Figure 7-2).
8. Turn your notebook computer right-side up, raise the lid, and continue operation.

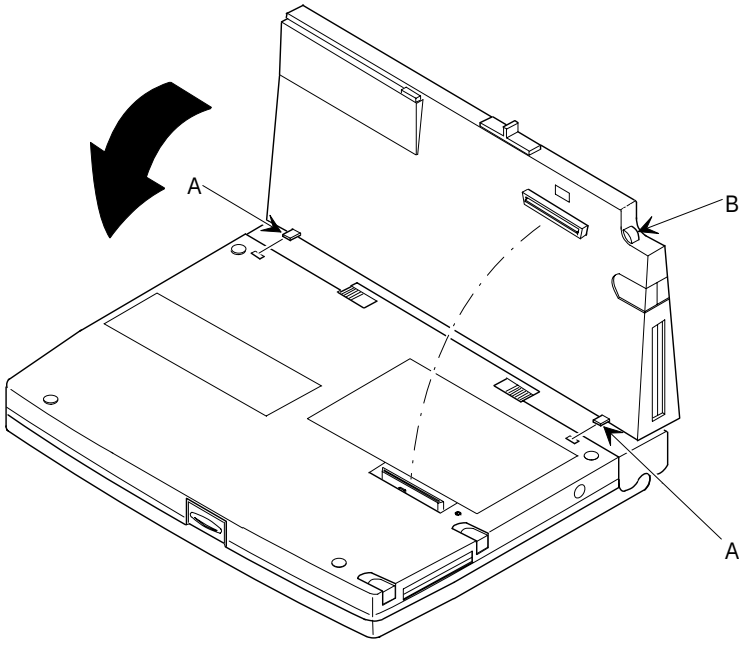


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Figure 7-2. Installing the Expansion Dock

Installing Memory

Three memory options are available for your notebook computer: A 4 MB, 8 MB, or 16 MB memory module. These modules can be installed into a compartment located underneath your notebook computer. To install a memory module:

CAUTION: Before turning off your notebook computer, make sure the power button is set to the **On/Off** option in Setup, or you can press the reset button. Failure to do so might damage the notebook computer or memory module.

1. Turn off your notebook computer and close the lid.
2. Carefully turn your notebook computer over.
3. Remove the memory module compartment cover.
4. Install either memory module as shown.
5. Replace the compartment cover.

WARNING: The compartment cover must always be installed.

6. Turn your notebook computer right-side up, raise the lid, and then run Setup to configure it for the additional amount of memory.

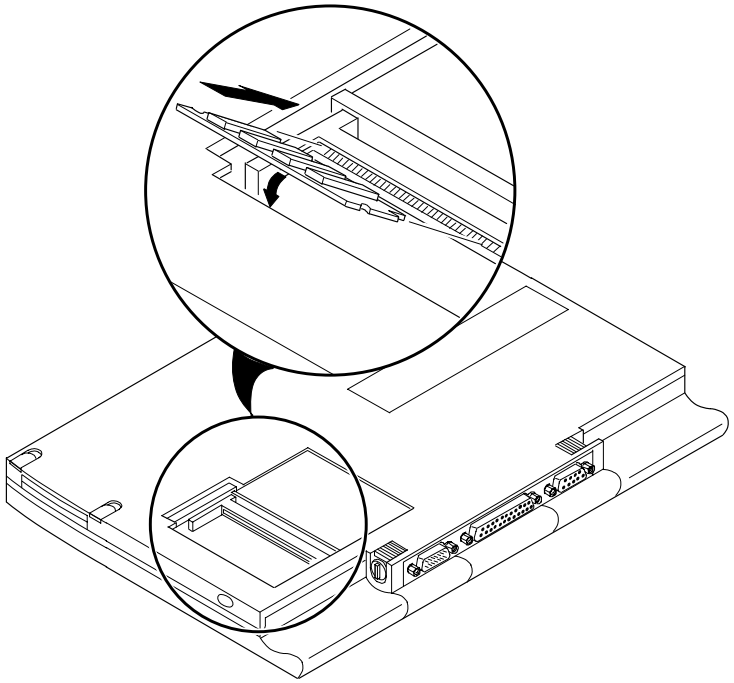

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Figure 7-3. Installing a Memory Module

A

Technical Specifications

This appendix provides information about the technical characteristics of your Digital HiNote Ultra.

- Notebook computer specifications
- International AC adapter
- Lithium Ion battery pack
- Environmental compatibility

Notebook Computer Specifications

Feature	Specification
Type/speed	486SX, DX2, DX4
Wait state	0 at 33 MHz
Internal cache	8 KB

Attributes	Specification
ISA bus clock	8.33 MHz
ISA data I/O	8-bit and 16-bit
Main logic board DRAM	For DSTN and Mono versions: 4 MB standard (expandable to 8, 12, or 20 MB, using an optional 4, 8, or 16 MB memory module) For TFT versions: 8 MB standard (expandable to 12, 16, or 24 MB, using an optional 4, 8, or 16 MB memory module)
Video memory	512 KB for PC-70 and PC-71 1 MB for other notebook computers
Flash ROM BIOS size	256 KB

Dimension	Specification
Width	216 mm (8.5 in.)
Length	280 mm (11 in.)
Height, incl. feet	25.4 mm DSTN and mono (1.0 in.) 30.5 mm TFT (1.2 in.)
Weight (excluding floppy wedge)	Mono: 1.59 kg (3.523 lbs) DSTN: 1.75 kg (3.88 lbs) TFT: 1.8 kg (4.012 lbs)

Attributes	Specification
Operating temperature[1]	10 °C to 40 °C (50 °F to 104 °F)
Non-operating temperature[1]	-20 °C to 60 °C (-4 °F to 140 °F)
Operating humidity (noncondensing)	20% to 80% relative humidity, maximum wet bulb 33 °C (91 °F)
Non-operating humidity (noncondensing)	5% to 95% relative humidity, maximum wet bulb 35 °C (95 °F)
Altitude	
Operating	-60 m to 3 040 m (-197 to 9 975 ft) maximum
Nonoperating	-60 m to 12 160 m (-197 to 39 895 ft) maximum
Shipping vibration	IAW Federal Standard 101, method 5019
Shock	
Operating	10 G, 11 ms halfsine
Nonoperating	100 G, 11 ms halfsine

[1] Notebook computer and International AC Adapter

International AC Adapter

Dimension	Specification
Height	3.2 cm (1.26 in.)
Depth	6.0 cm (2.36 in.)
Width	12.1 cm (4.78 in.)
Weight	0.40 kg (0.90 lbs) with cables

Rated Voltage Range	Maximum Range	Rated Input Current	Operating Frequency Range	Output Rating
100 V ac - 120 V ac	90 V ac - 135 V ac	0.4 A	47 Hz - 63 Hz	11 V dc @ 2.4 A
220 V ac - 240 V ac	180 V ac - 264 V ac	0.2 A	47 Hz - 63 Hz	

Lithium Ion Battery Pack[1]

Dimension	Specification
Height	21.5 mm (0.85 in.)
Depth	39.4 mm (1.55 in.)
Width	279 mm (11.0 in.)
Weight	300 g (0.67 lb)
Voltage	7.2 V dc nonimal
Capacity	3300 mAh
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Long-term storage temperature	-20 °C to 45 °C (-4 °F to 113 °F)
Shelf life	30 days

[1] Also available as an additional option.

CAUTION: Depending on your locality, your notebook computer's battery pack might be considered hazardous waste. Make sure you follow any state or local statute to properly dispose of an old battery pack.

Acoustics - Preliminary declared values per ISO 9296 and ISO 7779

	Sound Power Level L_{WAd}, B (Operator Position)		Sound Pressure Level L_{pAm}, dBA (Operator Position)	
Product	**Idle**	**Operate**	**Idle**	**Operate**
Digital HiNote Ultra with 170 MB IDE	3.5	4.1	26	33
Digital HiNote Ultra with 240 MB IDE	3.9	4.4	33	36
Digital HiNote Ultra with 340 MB IDE	3.6	4.1	27	33

[Current values for specific configurations are available from Digital representatives
1 B = 10 dBA.]

Environmental Compatibility

This product has been designed and manufactured to achieve environmental compatibility including:

Use of Brominated Flame Retardants In Enclosure Parts

The thermoplastic enclosures do not contain polybrominated diphenylether (PBDE) as a flame retardant additive and therefore, they are not suspected to emit toxic dibenzofuran and dibenzodioxin gases.

Use of PVC In Enclosure Parts

The plastic enclosures are not using rigid PVC but a modified Polyphenylene-oxyde, NORYL PX4400, and a standard ABS, CYCOLAC DFS, both from General Plastics (GEP).

Use of Asbestos

Digital Equipment Corporation does not use asbestos in any form in the manufacturing of its products. The use of asbestos in Digital's products is prescribed by our internal design standard EL-00136-00.

EL-00136-00 "Digital Policy on Government-Regulated Materials in Digital Products."

Ozone Depleting Substance (ODS)

This product is in full compliance with the labeling requirements in the Clean Air Act Amendments of 1990 (USA). It does not contain nor is it manufactured with a Class 1 ODS, as defined in title VI Section 611 of that act.

B

Notebook Computer Messages

Introduction

This appendix lists the Digital HiNote Ultra messages you might see or hear when you turn on power. The computer messages are grouped as follows:

- POST and boot computer messages
- Beep codes
- Error handling

POST and Boot Messages

The POST displays two types of messages to alert you to errors in hardware, software, and firmware or to provide operating information about your notebook computer. Messages with a prefix FATAL alert you to a hardware failure. Following a FATAL message, the notebook computer emits a series of audible beeps and then locks up. Messages with a prefix WARNING alert you to a configuration error. Following a WARNING message, the prompt `Press F1 to continue` is displayed. Your notebook computer will stop until `F1` is pressed.

The following table lists a general grouping of notebook computer messages. In addition, each message is accompanied by text describing the message and in most cases, a recommended solution to the problem.

> **NOTE:** Italics indicate variable parts of a message such as memory addresses, hexadecimal values, and so on. These messages can differ at each occurrence.

POST and Boot Messages

Fatal Message	Description/Solution
`Faulty refresh circuit`	Reset factory defaults and reboot.
`ROM checksum incorrect`	Reset factory defaults and reboot.
`CMOS RAM test failed`	Reset factory defaults and reboot.
`DMA controller failed`	Reset factory defaults and reboot.
`Interrupt controller failed`	Where nnnn is the amount of extended memory (in kilobytes) that tested successfully.
	Reset factory defaults and reboot.
`Faulty DMA page registers`	A walking bit read/write of the 16 DMA controller page registers starting at location 80h failed.
	Reset factory defaults and reboot.
`RAM error at location nnnn`	Power your notebook computer off and then on.
`Wrote:yy Read:zz`	Reset factory defaults and reboot.
`Clock not ticking correctly`	The real time clock is not ticking.
	Reset factory defaults and reboot.
`No bootable floppy drive 0 installed`	Power down the notebook computer and check all connections. Run Setup.
	Reset factory defaults and reboot.
	Replace the diskette drive.
`Keyboard controller failure`	The keyboard or keyboard controller might have failed.
	Reset factory defaults and reboot.
`Keyboard failure`	The keyboard or keyboard controller might have failed.
	Reset factory defaults and reboot.

continued

Warning Message	Description/Solution
CMOS failure - Run Setup	Run Setup. Reset factory defaults and reboot.
CMOS checksum invalid - run Setup	Run Setup. Reset factory defaults and reboot.
No interrupts from timer 0	Reset factory defaults and reboot.
Unexpected amount of memory - Run Setup	Run Setup. Reset factory defaults and reboot.
Time/Date corrupt - Run Setup	Run Setup and set the correct time and date. Reset factory defaults and reboot.
Floppy disk track 0 failed	Run Setup. Check all connections. Reset factory defaults and reboot.
Floppy controller failed	Run Setup. Reset factory defaults and reboot.
Hard disk error	Run Setup. Reset factory defaults and reboot.
Hard disk failure	Run Setup. Reset factory defaults and reboot.
Hard disk not configured - Run Setup	Run Setup. Check all connections. Reset factory defaults and reboot.
Hard disk controller error	Run Setup. Check all connections. Reset factory defaults and reboot.
Hard disk controller failure	Run Setup. Check all connections. Reset factory defaults and reboot.

Beep Codes

If the POST finds an error and cannot display a message, the computer's speaker emits a series of beeps to indicate the error.

For example, a refresh circuitry is faulty beep code emits a short (S), short (S), short (S), pause (P), short (S), long (L), short (S), and pause (P) sequence.

The following table lists the beep codes when the notebook computer encounters a fatal error. Fatal errors (errors that lock up your computer) are generally the result of a failed main logic board or some other add-on component (DIMM, BIOS, notebook computer battery, etc. If you cannot resolve problems using the troubleshooting procedures in Chapter 6, contact your Digital service representative.

Refer to Chapter 6, “Problem Solving and Troubleshooting,” for beep codes that sound when your Battey Pack is low and while using PCMCIA cards.

Beep Code	Error Message
S,S,S,P,S,S,L,P	DMA page registers are faulty.
S,S,S,P,S,L,S,P	Faulty refresh circuit (see POST and boot messages)
S,S,S,P,S,L,L,P	ROM check sum incorrect (see POST and boot messages)
S,S,S,P,L,S,S,P	CMOS RAM test failed (see POST and boot messages)
S,S,S,P,L,S.L,P	DMA controller faulty (see POST and boot messages)
S,S,S,P,L.L.S,P	Interrupt controller failed (see POST and boot messages)
S,S,S,P,L,L,L,P	Keyboard or keyboard controller failed
S.S,L,P,S,S,S,P	Video controller failed
S,S,L,P,S,S,L,P	No memory found or memory controller failed

C
Device Mapping

This appendix provides a series of tables listing mapping and address information related to computer memory and various main logic board devices (keyboard controller, interrupt controller, DMA controller, etc.).

Your computer's memory and address locations are allocated at the factory to operate within a standard PC environment. However, due to the number of optional devices that are available, sometimes memory and address locations need to be changed. For example, some network PCMCIA cards require a specific memory location. If that location is already allocated, a memory conflict results and the PCMCIA card will not operate as expected. Note that some memory, I/O and interrupt locations can be changed using the BIOS Setup utility. Refer to Chapter 2, "Configuring Your Computer," for additional information.

CAUTION: Before changing any memory or address location, refer to the documentation supplied with the optional device or software application and make sure adequate information is available. If not, contact the option or software manufacturer for further information.

Memory Map

Range	Function	Notes
0h to 9FFFFh	Base memory	640 KB
A0000h to BFFFFh	Video RAM	128 KB
C0000h to CBFFh	VGA BIOS	32 KB
CC000h to CFFFFh	Plug and play BIOS	16 KB
D000h to DFFFFh	BIOS extension ROM (AT bus usage)	96 KB
E0000h to EFFFFh	PCMCIA card access	48 KB
F0000h to FFFFFh	Notebook computer BIOS	64 KB

I/O Address Map

Range (hexadecimal)	Function
000 - 00F	DMA controller A
020 - 021	Master interrupt controller
024	Index register
026	Data register
040 - 043	Interval timer
060 - 06F	Keyboard controller
070 - 07F	Real-time clock (RTC), NMI
080 - 08F	DMA page register
0A0 - 0A1	Slave interrupt controller
0C0 - 0CF	DMA controller B
0F0	Clear math coprocessor
0F1	Reset math coprocessor
0F8 - 0FF	Math coprocessor
1F0 - 1F7	IDE controller
278 - 27A	LPT2
2E8 - 2EF	COM4
2F8 - 2FF	COM2
378 - 37A	LPT1
3B0 - 3DF	Mono VGA registers
3BC - 3BE	LPT3
3C0 - 3DF	Mono VGA
3D0 - 3DF	Color VGA registers
3E8 - 3EF	COM 3
3F0 - 3F7	Diskette controller
3F6 - 3F7	IDE controller (alt status, device address)
3F8 - 3FF	COM1
46E8	VGA enable register

Notebook Computer Interrupt Levels

Priority	Interrupt Controller	Interrupt Number	Interrupt Source
1	1	IRQ0	Timer tick
2	1	IRQ1	Keyboard controller
	1	IRQ2	Cascade interrupt
3	2	IRQ8	Real-time clock (RTC)
4	2	IRQ9	Reserved
5	2	IRQ10	Reserved
6	2	IRQ11	Reserved
7	2	IRQ12	Mouse interrupt
8	2	IRQ13	Math coprocessor
9	2	IRQ14	Hard disk drive
10	2	IRQ15	Reserved
11	1	IRQ3	Infrared = COM2
12	1	IRQ4	COM1, COM3
13	1	IRQ5	Sound
14	1	IRQ6	Diskette drive
15	1	IRQ7	LPT1, LPT2, LPT3

DMA Channel Assignment

Channel	Controller	Function
0	1	Not used
1	1	Sound
2	1	Diskette controller
3	1	ECP (optional)
4	2	Cascade DMA
5	2	Not used
6	2	Not used
7	2	Not used

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