UltraBookIIi

User Guide

TADPOLE RDI

431107302A

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UltraBookIIi User Guide

Tadpole-RDI Part # 431107302, Revision A

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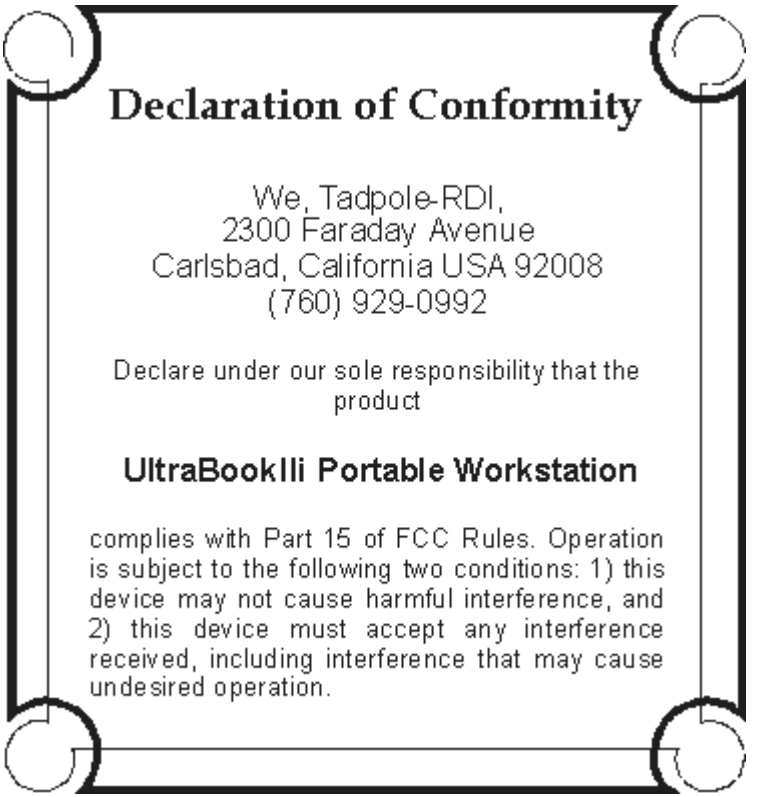
Notice Disclaimer of Warranty

Tadpole-RDI makes no representations or warranties with respect to this manual, and shall not be liable for technical or editorial omissions made herein; nor incidental or consequential damages resulting from the furnishing, performance, or use of this manual. Further, Tadpole-RDI reserves the right to make changes in the specifications of the product described within this manual at any time without notice and without obligation of Tadpole-RDI to notify any person of such revision or changes.

FCC Compliance Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception. However, there is no guarantee that interference will not occur in a particular installation.



If this equipment does cause interference to radio and 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.

Shielded Cables

Connections between the UltraBookIIi workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits.

The connection of nonshielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels that exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Modifications

Modifications to this device not approved by Tadpole-RDI may void the authority granted to the user by the FCC to operate this equipment.

DOC Class B Notice

This digital apparatus does not exceed Class B limits for radio noise emission for a digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Avis

Le present appareil num6rique ne met pas de bruits radioe'lectnques depassant les limites applicables aux appareils num6riques de la classe B prescrites dans le Reglement sur le brouillage radio6lectrique edicte' par le ministere des Communications du Canada.

Safety Precautions

***WARNING**: Hazardous voltages are present inside the UltraBookIIi workstation. To reduce the risk of electrical shock and/or personal injury, follow the operating and installation instructions carefully.*

***WARNING**: Do not attempt to recharge alkaline or other non-rechargeable batteries with the UltraBookIIi workstation's AC adapter/charger. Alkaline batteries cannot be recharged. Attempting to recharge alkaline batteries may cause personal injury and/or damage to the UltraBookIIi workstation.*

***WARNING**: To prevent fire, shock hazard, or damage to the equipment, do not expose the UltraBookIIi workstation to rain or moisture. Do not immerse the UltraBookIIi workstation in water. If water has entered the UltraBookIIi workstation cabinet, do not use the workstation until it has been inspected by Tadpole-RDI.*

***WARNING**: Do not dispose of UltraBookIIi batteries in fire. Disposal of UltraBookIIi batteries in fire may cause personal injury.*

***WARNING**: All service and upgrades to the UltraBookIIi workstation must be performed by a trained technician only. Otherwise, you may encounter personal injury and/or damage your workstation.*

Sicherheitshinweise

***WARNUNG**: Beim Betrieb der UltraBookIIi Workstation treten hohe Spannungen innerhalb des Gehäuses auf. Bitte befolgen Sie auf jeden Fall die Bedienungs- und Installationsanweisungen um jegliches Risiko einer Verletzung oder eines Personenschadens zu vermeiden.*

***WARNUNG**: Versuchen Sie auf keinen Fall, Ihre UltraBookIIi Workstation mit Trockenbatterien (Primärzellen) zu betreiben oder solche mit dem Netz/Ladegerät zu laden. Versuche dieser Art können Personen-oder Sachschaden zur Folge haben.*

***WARNUNG**: Betreiben Sie Ihre UltraBookIIi Workstation nicht bei feuchten oder nassen Umgebungsbedingungen. Falls Wasser oder Feuchtigkeit in das Gehäuse eingedrungen ist, sollten Sie Ihr Gerät vor Wiederinbetriebnahme von einem qualifizierten Servicetechniker überprüfen lassen.*

Important Safety Instructions

The following instructions pertain to the risk of fire, electric shock or bodily injury. Please read all of these instructions carefully.

1. Save these instructions for later use.

2. Follow all of the instructions and warnings marked on this workstation or included in this manual.

3. Do not use this workstation in unstable or unsupported conditions.

4. The workstation may fall, causing serious damage to the workstation and others around.

5. Slots and openings in the cabinet are for ventilation. To ensure reliable operation of the workstation, and to protect it from overheating, these openings must not be blocked or covered. Don't use this workstation on a bed, sofa, rug or other similar surface. This workstation should never be placed near an oven, a radiator, or heat register. This workstation should not be placed in a built-in installation unless proper ventilation is provided.

6. Never push objects of any kind into the workstation cabinet openings as they may touch dangerous voltage points or short out parts that could result in a fire or electrical shock. Keep liquids of any kind away from the workstation.

7. This workstation should only be connected to the AC power source indicated on your workstation system's information label. If you are not sure of the type of AC power available, consult your dealer or local power company. Only connect this workstation to a power outlet matching the power requirements of this workstation.

8. Do not allow anything to rest on the power cord. Do not locate this workstation where people will walk on the cord.

9. If you have to use an extension cord with this workstation, make sure that the total amperage rating of all equipment plugged into it does not exceed the amperage rating of the extension cord. Also, make sure that the total of all workstations plugged into the main AC power outlet does not exceed 15 amps.

10. Unplug your workstation from the main electrical power outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

11. Do not use this workstation near water.

12. This product is equipped with a 2-wire non-grounded type plug.

Battery Warning Instruction

***WARNING**: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equipment type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*

***ATTENTION**: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie de meme type ou d'un type recommande par le constructeur. Mettre au rebutles batteries usagees conformement aux instructions du fablicant.*

***VORSICHT**: Explosionsgefahr bei unsachgemässem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.*

Earthed Socket Instruction

***Caution**: Only connect this equipment to an earthed socket outlet. Apparatet ma kun tilkobles jordet stikkontakt. Apparaten skall anslutas till jordat nätuttag. Laite on liitettävä suojäkosketipistoraassian.*

ATTENTION: Debrancher avant d'ouvrir.

ATENCION: Desconecte fuerza electrica antes del servicio.

Wichtige Sicherheitsvorschriften. Unbedingt beachten.

Die nachfolgenden Anweisungen betreffen die Gefahr von Verletzungen durch elektrische Spannung, Feuer und mechanische Einwirkung. Bitte lesen sie diese Anweisungen sorgfältig.

1. Beachten Sie alle Hinweise, die am Gerät selbst angebracht oder in den zugehörigen Handbüchern vermerkt sind.

2. Stellen Sie das Gerät an einem sicheren, stabilen Arbeitsplatz auf.

3. Am Gerät angebrachte Öffnungen (Schlitze und sonstige Öffnungen) dienen der Belüftung des Gerätes. Um ein zuverlässiges Arbeiten des Gerätes zu gewährleisten und um Überhitzung zu vermeiden, müssen diese Öffnungen unbedingt freigehalten werden. Betreiben Sie das Gerät nie auf Betten, Sofas oder anderen, weichen Unterlagen.

4. Stecken Sie keine Gegegenstände (Schraubenzieher, Büroklammern, etc.) in die Öffnungen. Sie würden damit Kurzschlüsse herbeiführen, die zur Zerstörung des Gerätes führen, sich der Gefahr eines Stromschlages aussetzen oder das Gerät in Brand setzen.

5. Das Gerät darf nur an vorschriftsmässige Steckdosen mit der auf dem Gerät angegebenen Netzspannung angeschlossen werden. Wenn Sie nicht sicher sind, welche Netzspannung richtig ist, wenden Sie sich an den Lieferanten des Gerätes oder an das zuständige Elektrizitätswerk.. Bitte nur an genügend stark abgesicherte Steckdosen anschliessen, die der Leistungsaufnahme des Gerätes entsprechen.

6. Auf das Netzanschlusskabel dürfen keine Gegenstände gestellt werden.

7. Legen Sie das Netzkabel so, dass niemand darauftreten oder darüber stolpern kann.

8. Wenn Sie Verlängerungskabel benützen, müssen Sie sicher sein, dass die gesamte Leistungsaufnahme nicht grösser ist, als das Verlängerungskabel zulässt. Der gesamte Stromverbrauch aller angeschlossenen Geräte darf nicht mehr als 15A betragen.

9. Wenn Sie das Gerät reinigen, muss das Netzkabel aus der Steckdose gezogen werden.

10. Das Gerät dürfen Sie nicht in der Nähe von Wasserleitungen benutzen.

Wartung der Workstation

Wenn Ihre Workstation nicht ordnungsgemäss arbeitet, dürfen Sie nur die Einstellungen vornehmen, die im Handbuch genannt werden. Andere Einstellungen oder Veränderungen können den Rechner beschädigen oder zerstören. Umfangreiche und kostspielige Reparaturen würden notwendig werden, um das Gerät wieder betriebsfähig zu machen.

Ziehen Sie den Netzstecker aus der Steckdose und verständigen Sie den zuständigen Kundendienst bei folgenden Störungen:

1. Netzkabel ist defekt oder stark abgenutzt.

2. Flüssigkeit ist in das Gerät gelangt.

3. Das Gerät war Regen oder Leitungswasser ausgesetzt.

4. Das Gerät ist heruntergefallen oder das Gerhäuse ist beschädigt.

5. Das Gerät arbeitet nicht mehr richtig.

Achtung!

Wenn Sie das Gerät öffnen müssen (Abnahme der verschraubten Haube), ist unbedingt folgendes zu beachten:

1. Das Netzkabel muss aus der Steckdose gezogen werden und zwar bevor Sie das Gerät öffnen.

2. Die Haube muss wieder montiert und verschraubt werden. Erst dann darf das Netzkabel wieder eingesteckt werden.

P Preface

Welcome to the *UltraBookIIi User Guide*. This manual contains valuable information about using your new UltraBookIIi.

Conventions in this User Guide

The following conventions are used in this Guide:

Procedures

Procedures are numbered.

Example:

1. Turn on your workstation.

Notes

Notes precede information that requires special attention.

Example:

For your convenience, you can use your UltraBookIIi's on-board LCD or attach an external monitor.

Warnings and Cautions

Information of a hazardous nature is shown as indented and preceded by warning/caution icon.

Example:

Warning: *Disconnect all AC power and remove the battery prior to performing any cleaning and maintenance. Personal injury and equipment damage could result if a power source is connected to the UltraBookIIi during cleaning or maintenance.*

Warnings are in italics to highlight conditions of potential personal injury. Cautions point out possible equipment damage.

Keyboard Conventions

Keyboard keys are shown in inital upper-case type.

1. Type Search and press the Enter key to have the system search for bootable devices.

Screen Messages

Screen messages appear in `Courier` type within a box.

Example:

After the UltraBookIIi passes its self-test, the following initial message appears:

```
UltraBookIIi
ROM Rev. x.xx, xx, Serial #xxxxxxx
xxMB memory installed, Keyboard Present
Ethernet address x:x:xx:x:x:xx, Host ID: xxxxxxxx
```

Variables

Variables appear as an italicized x. For example, the x's in the screen on the previous page are variables because the values shown for ROM Rev., serial number. Ethernet address, and host ID will vary from system to system.

Supplemental Documentation

For more information about the Solaris operating system, refer to the UltraBookIIi Software Installation Guide on the Tadpole-RDI Web Site. For more information on related UltraBookIIi features, refer to the other documents also on the Tadpole-RDI Web Site by visiting:

http://www.tadpolerdi.com

Notes

1 Introducing UltraBook

Before using your UltraBookIIi portable workstation, it is important to review the following topics covered in Chapter 1:

- Unpacking your UltraBookIIi components.
- A list of features for the UltraBookIIi.
- Customer Service and Support.

Introducing UltraBookIIi Components

As you unpack your UltraBookIIi, check the shipping carton and the components inside it for damage. Figure 1-1 shows the items you should find in your shipping carton.

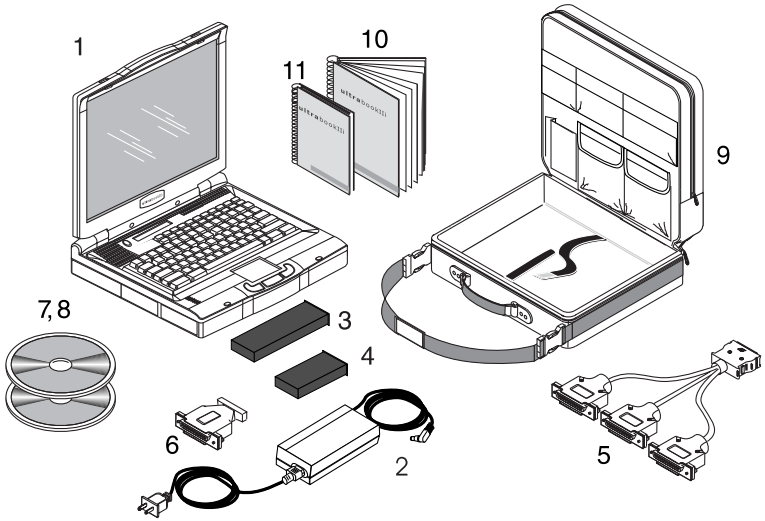


Figure 1-1 UltraBookIIi Components

If either the shipping carton is damaged or the UltraBookIIi components are missing or damaged, please contact your shipper or dealer immediately.

Each carton contains:

1. UltraBookIIi portable workstation
2. AC adapter and power cord
3. Rechargeable battery pack
4. Removable hard drive
5. I/O break-out cable
6. J13W3-to-VGA adapter
7. Solaris 2.x or higher compact disc
8. Tadpole-RDI software compact disc
9. Carrying case
10. *UltraBookIIi User Guide* (this manual)
11. Solaris Software Installation Guide

Optional UltraBookIIi Accessories:

- Optional external floppy drive (not shown)
- Optional CD-ROM drive (not shown)
- Optional fax/modem PCMCIA card (not shown)

Introducing UltraBookIIi Features

Your new UltraBookIIi includes the following features:

- An UltraSPARC-IIi-compatible motherboard, running at 400 MHz with a 2 MB data and instruction cache
- 256 MB of high-speed RAM, upgradeable to 1 GB
- 14.1 inch display with 1024 x 768 resolution, supporting a 256K-color palette and 64-shades of gray
- A full-size 97-key SUN Type-5 compatible keyboard with 12 function keys
- An integrated three-button trackpad
- A status LCD that displays system status icons
- Up to three removable hard disk drives (HDDs) of varying capacity

Depending on your configuration, you may have two removable HDDs and one removable battery.

- Audio input and output jacks that support:
  - Stereo headphones, for private listening
  - Line Out, for connection to external stereophonic devices
  - Line In, for connection to external stereo audio sources
  - Mono/stereo microphone, for connection to an external microphone
- Internal monophonic speaker
- 2 PCMCIA Type I or Type II cards, or 1 Type III slot

- A connector for an optional low-profile external floppy disk drive
- A 68-pin Ultra/Fast-Wide SCSI port
- Two RS-232C serial ports for connecting an external keyboard or mouse
- A port for connecting an AC power adapter
- A J13W3 port for attaching an optional external monitor
- A standard RJ45 port that supports both 10-Base T and 100-Base T twisted pair Ethernet connections
- A single 50-pin port and I/O break-out cable (supplied) that supports two serial and one parallel cable for connecting industry-standard TIA/EIA-232-F and Centronics devices

For more information about the features listed here, see Appendix A of this guide.

For tips on using the features listed here, see Chapter 3 of this guide.

Customer Service and Support

If the information presented in this guide does not meet your needs, or you have questions, you may contact Tadpole-RDI's Customer Service and Support staff.

North America
7:00 AM to 6:00 PM PST
Tel: 1-800 734-7030
Fax: (760) 930-0762
E-mail: support@tadpolerdi.com

Europe
9:00 AM to 5:00 PM GMT
Tel: +44 1223 428200
Fax: +44 1223 428201
E-mail: support@tadpolerdi.com

Before you call, have the serial number for your UltraBookIIi nearby. This number appears on the bottom of the UltraBook.

If you received an error message, it will also help if you write down the following information:

1. Serial number of your system.
2. The exact description of the problem.
3. The task you were performing when you encountered the problem.
4. The command you typed when the error occurred. You may want to check the command line to make sure you did not make a mistake.
5. The directory you were in. You can use "pwd" to obtain this information.
6. The account you were using. You can use "whoami" to obtain this information.
7. Version of the operating system you are using. You can use "uname -a" or "more /etc/release" to obtain this information. Refer to page 6-9 for details about these commands.

Notes

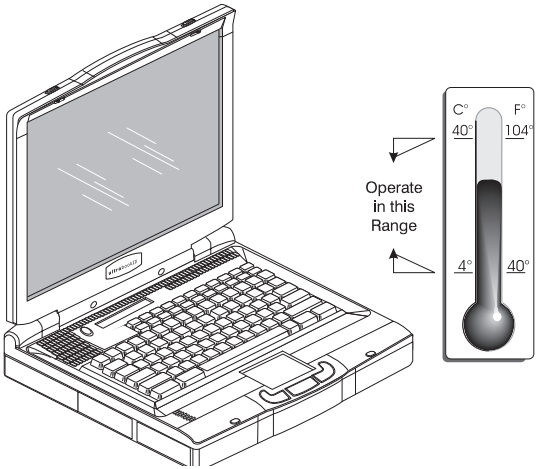
2 Quick-Start

Quick-Start provides a brief, pictorial introduction to get you started. The next chapter, Using UltraBookIIi, describes more detailed information about these features. A few minutes spent on these two chapters will ensure you get the most out of UltraBookIIi. For more detailed hardware descriptions, see Appendix A of this manual.

Quick-Start

By the end of these eight steps, you'll be ready to start working with your UltraBookIIi.

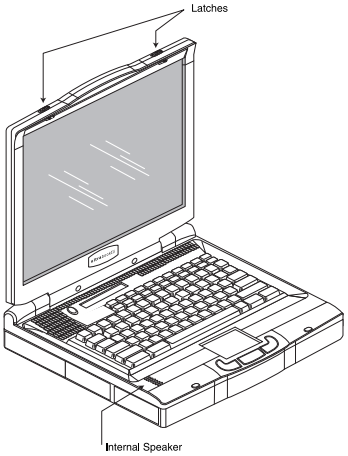
Step 1: Check the ambient air temperature.



Caution: If your workstation has been exposed to temperature extremes (variations of more than 10 degrees of temperature or 10 percentage points of humidity), you will need to stabilize the

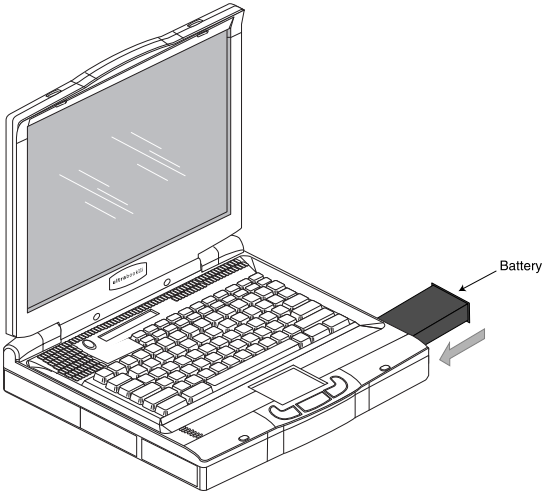
workstation's temperature. Let your UltraBookIIi adjust to room temperature before proceeding. As shown in Step 1, the operating temperature range is 4° to 40° C.

Step 2: Open the UltraBookIIi



Open the UltraBookIIi display screen by sliding the display cover latches as shown in Step 2.

Step 3: Install the Lithium-Ion battery.

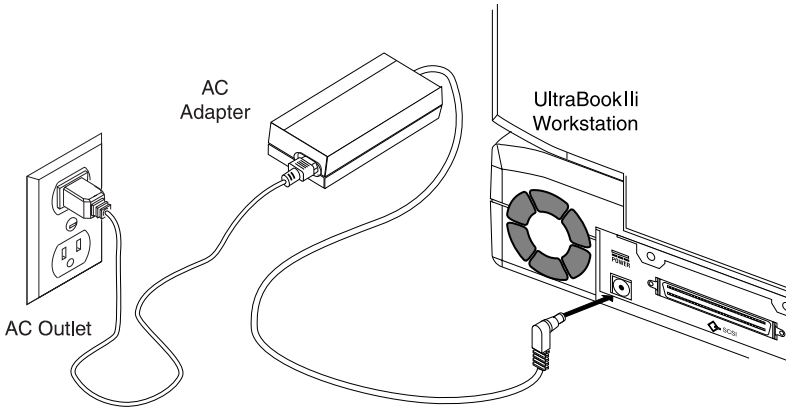


Insert the battery pack into the bay. Push in until you hear it click into place. The battery bay is located on the same side of the unit as the PCMCIA and parallel and serial ports.

Warning: Never use alkaline batteries with the UltraBookIIi. Alkaline batteries cannot be recharged and may explode if you try to recharge them. Only use the Lithium-Ion battery supplied with the system.

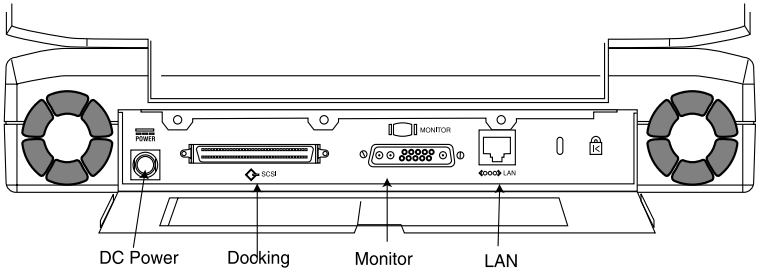
Warnung: Versuchen sie auf keinen Fall, Ihre UltraBookIIi workstation mi Trockenbatterien (Primarzellen) zu betreiben oder solche mit dem Netz/ Ladegerat zu laden. Versuche dieser Art konnen Personen-oder Sachsaden zur Folge Haben.

Step 4: Plug in the AC power adapter.

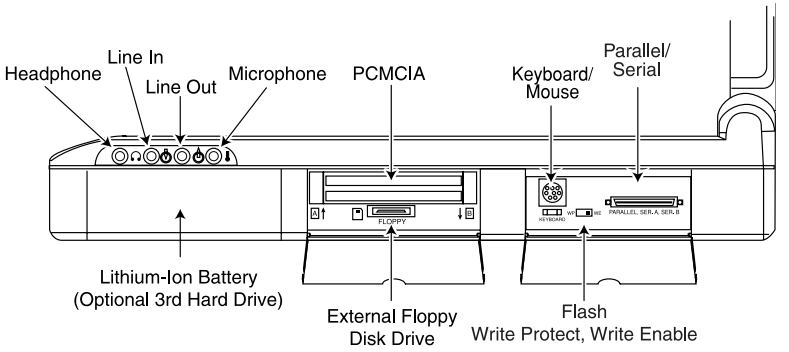


This shows connecting the AC adapter for AC power operation. The battery need not be installed for AC operation. Your AC adapter may look slightly different than the one pictured here. For more detailed instructions on plugging in the AC adapter, see page 3-3.

Step 5: Open the UltraBookIIi back and side panels.



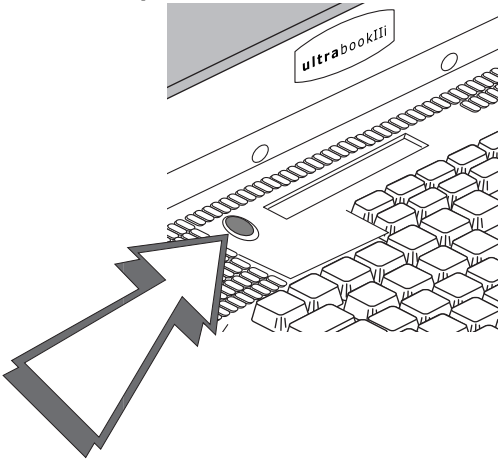
Step 5 continued.



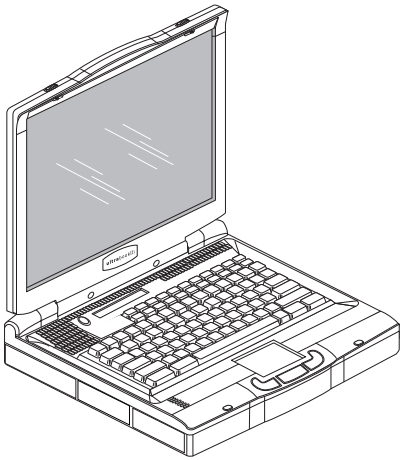
Step 5 shows the back panel. Although the UltraBookIIi is completely self-contained, the back panel provides access for connecting the workstation to a wide variety of external devices, including Ethernet networks. Lower the cover plate and connect the external device to the appropriate connector. For serial or parallel connections, use the supplied I/O break-out cable. For Ultra/Fast-Wide SCSI connections, use the SCSI port shown in Step 5. See Chapter 2 for more on connections.

Turn on all external devices, then turn on your UltraBookIIi, as shown in Step 6.

Step 6: Turn the power switch on.



Step 7: View the initial system screens.



After the self-tests have been successfully completed, an initial message appears. Then system messages scroll as the operating system loads.

If the system is booted with the factory software load intact, the Common Desktop Environment (CDE) login banner appears. Log on at this time and follow the prompts.

Step 8: Log on to the system

If the factory software load is altered, the CDE may not appear. If this is the case, after the last system message, the screen displays the login prompt and you can log into the system. At this point, you may start your application.

This concludes Quick-Start. The next chapter, Using UltraBookIIi, provides more detailed information about the Quick-Start tasks.

3 Using UltraBookIIi

This chapter provides more detailed information about the Quick-Start tasks described in Chapter 2. A few minutes spent here will ensure you get the most out of UltraBookIIi.

Setting Up

The UltraBookIIi is designed to provide many years of error-free operation. The workstation will last longer by following these guidelines:

- Position the UltraBookIIi so you can easily access the connectors on the back and side panels.
- The area should be free of obstructions, allowing you to open the display screen completely, without hindrance.
- Adequate ventilation is required for the UltraBookIIi. Do not cover or block the ventilation slots or fans on the case.

Never spray or directly apply strong cleaners or solvents to the UltraBookIIi case or LCD.

Opening the Display Cover

The display is located on the inside of the top cover. When you are not using the UltraBookIIi, the cover should remain closed. This protects the display against damage.

To open the display cover:

1. Slide the two display cover latches outward to the left and right sides of the unit (see Figure 3-1).

2. Gently raise the cover to its full, upright position.

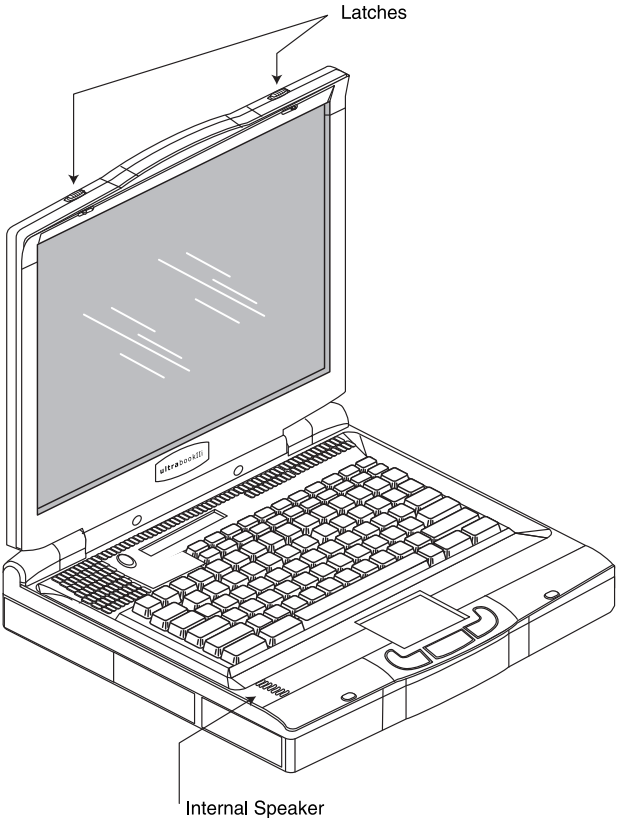


Figure 3-1 Raising the Display Cover

You can adjust the screen up to 27 degrees from vertical for a better viewing angle. Use the backlight intensity keys on the integral keyboard to adjust the brightness of the backlight to achieve the best viewing conditions.

To close the display cover:

1. Gently pull the cover forward and down.

2. Carefully press the back of the cover down toward the keyboard until both case latches "click" into their closed positions.

At this point, you can connect the UltraBookIIi to your selected optional equipment and power up the workstation.

Providing Power

The UltraBookIIi can operate from an AC power adapter or a rechargeable Lithium-Ion battery pack.

Using an AC adapter

You may use AC power to operate the UltraBookIIi. The battery need not be installed for AC operation.

To power the UltraBookIIi from AC power:

1. Locate the UltraBookIIi near a grounded AC outlet.

2. Make sure the outlet is not controlled by a wall switch, which can cause the workstation to be turned off accidentally.

Warning: *Use only the supplied AC adapter with the UltraBookIIi. Do not use an AC adapter designed for use with another product.*

3. Plug the connector from the AC adapter into the power input socket on the UltraBookIIi. Then plug the AC cable plug into a nearby AC outlet.

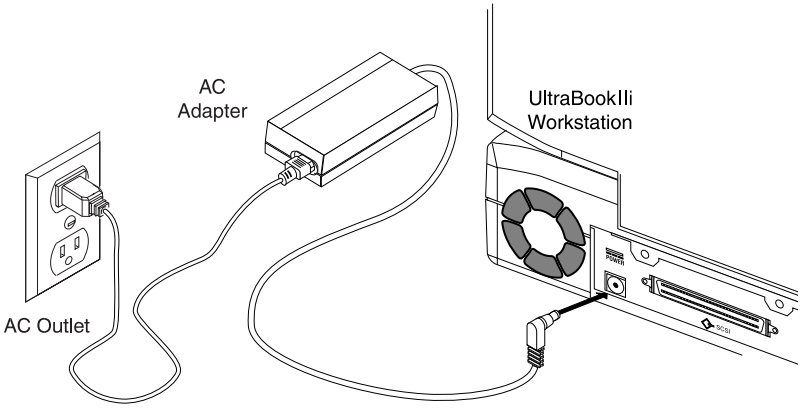


Figure 3-2 Connecting to AC Power

The AC adapter can be plugged into a 100 – 240-Volt source at 50 – 60 Hz. The AC adapter will automatically adjust to the AC input voltage and frequency. The only requirement is that the AC adapter/charger must correctly fit the AC outlet.

To unplug the AC Adapter: Unplug the AC cable from the AC outlet. Then slide the connector from the AC adapter out of the power input socket on the UltraBookIIi.

After installing a new battery pack, use the AC adapter to recharge the battery pack. It takes about 3 hours to recharge a new battery when the UltraBookIIi is turned off. After fully charging the battery pack, you can operate the UltraBookIIi for about 1 hour, depending on your configuration and application.

NOTE

UltraBookIIi includes three device bays, which may be occupied by one of several devices. If the device bay on the right side of the unit (the same side as the PCMCIA and parallel and serial ports) is occupied by a hard disk drive, you will not be able to run UltraBookIIi on battery power.

To install the battery pack:

NOTE

The battery can be installed with the UltraBookIIi powered on or off.

Insert the battery pack in the bay. Push in until you hear it click into place. The battery bay is located in the same side of the unit as the PCMCIA and parallel and serial ports.

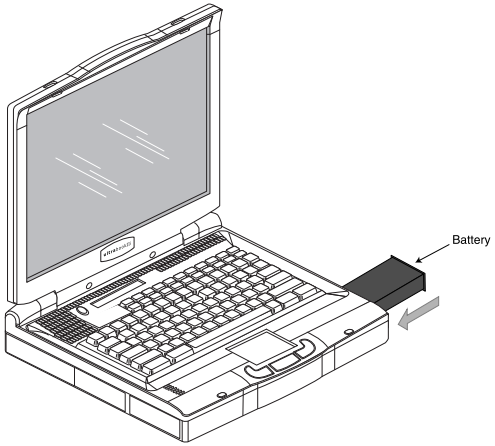


Figure 3-3 Installing the Battery Pack

To remove the battery pack:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Turn the UltraBookIIi over.

3. Press the battery latch (see Figure 3-4) away from the battery.

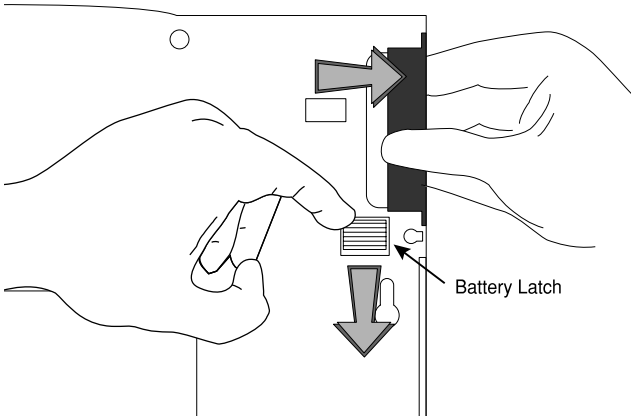


Figure 3-4 Removing the Battery Pack

4. Grasp the battery's faceplate and gently pull it out of the battery bay.

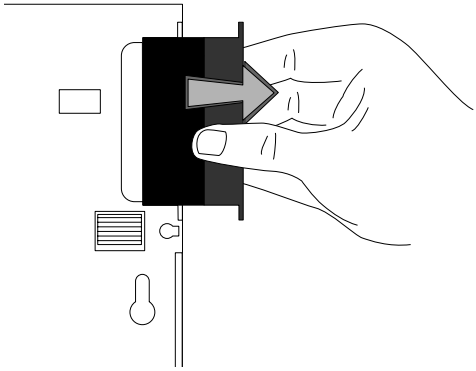


Figure 3-5 Removing the Battery Pack (cont'd)

Operating UltraBookIIi

Before turning on your UltraBookIIi workstation and beginning your day, you will need to prepare the workstation. This includes acclimating the workstation to its environment and starting its operating system.

Starting UltraBookIIi

To ensure long life and ease of operation, you need to follow a few general guidelines when starting up and shutting down your UltraBookIIi workstation.

Caution: Failure to start up and shut down the UltraBookIIi workstation properly can damage important system files and may affect your product warranty.

To start the UltraBookIIi:

1. Make sure the UltraBookIIi is at room temperature before powering up. This is particularly important when the workstation is brought from a very cold environment into a warm room. In such cases, moisture can condense on and inside the workstation and cause problems. Allow at least two hours for the UltraBookIIi's temperature to stabilize after bringing it from a very cold or very warm environment before proceeding.

2. (Optional) If you will be using the UltraBookIIi on an Ethernet network, you will need to:

    a. Contact the person responsible for your computer network (the Network Administrator) to obtain the following applicable information:

        - A host name that does not duplicate an existing host name
        - An IP address

- An optional Network Information Service (NIS) domain name
- A user account and password if using NIS
- An Ethernet cable
- A connection to the desired Ethernet network

b. Connect the Ethernet cable to the 10-Base T/ 100-Base T Ethernet connector.

3. Make sure that all cables attached to peripherals (such as printers, mouse, monitor, or SCSI devices) are securely plugged into the correct connectors. Pay particular attention to the two serial ports: check that the device intended for attachment to port A is not accidentally plugged into port B.

4. Make certain that each device is plugged into an AC outlet or power strip.

5. If you are using SCSI devices, please refer to Using the Ultra/Fast-Wide SCSI Port later in this chapter for more information. You may also need to consult your SCSI device documentation.

6. Use the UltraBookIIi's power switch to turn on your workstation.

The UltraBookIIi begins its self-test diagnostics and starts to boot. It is normal for the screen to be blank for up to 20 seconds before displaying the following initial message:

```
UltraBookIIi
ROM Rev.x.xx, Serial #xxxxxxx
xx MB memory installed, Keyboard Present
Ethernet address x:x:xx:x:x:xx, Host ID: xxxxxxxx
```

A variety of system messages will be displayed on the screen as Solaris continues to boot. After the last system message, the screen will display the "hostname console login" prompt.

```
hostname console login:
```

If the UltraBookIIi does not respond when the power switch is turned on, refer to Chapter 4 of this guide for troubleshooting suggestions.

After powering-up the UltraBookIIi for the first time, you are ready to configure your workstation. Consult your system administrator for details.

Restarting UltraBookIIi

Restarting an UltraBookIIi that has been halted and powered down is a simple procedure.

To restart the UltraBookIIi:

1. Verify that cables from all connected peripheral devices, such as SCSI devices or an external monitor, are connected to the appropriate connectors on the back of the UltraBookIIi.

2. Power-up the peripherals before powering-up the UltraBookIIi (see the peripheral manuals for more information).

3. Turn on the UltraBookIIi.

   The UltraBookIIi begins its self-test diagnostics and starts to boot. It is normal for the screen to be blank for up to 20 seconds before displaying the following initial message:

```
UltraBookIIi
ROM Rev.x.xx, Serial #xxxxxxx
xx MB memory installed, Keyboard Present
Ethernet address x:x:xx:x:x:xx, Host ID: xxxxxxxx
```

Various system messages will appear on the screen during the boot process. After the last system message, the screen will display the “host name console login” prompt, where “host name” is the one you entered when you configured the UltraBookIIi:

```
hostname console login:
```

4. Enter your user ID at the “hostname console login” prompt and press Enter.

   The following prompt appears:

```
Password:
```

5. Enter your password at the “Password” prompt and press Enter.

Shutting UltraBookIIi Down

Before turning off your UltraBookIIi for the day, save your work, close all programs and databases, and shut down its operating system. You may also want to power down any peripheral devices you have connected to the UltraBookIIi.

Using RDIuts

If you have RDIuts installed on your UltraBookIIi, this power management software will automatically close your programs and databases and shut down the operating system safely.

RDIuts is installed with the other system software at the factory, but if you have reloaded Solaris or repartitioned the hard disk drive, you will need to reload RDIuts or manually shut down your programs and operating system each time you are finished for the day.

Caution: If you are not certain RDIuts is installed on your workstation, DO NOT simply turn off the power to your workstation as this can damage or destroy critical operating system files and data. Failing to

properly shut down the operating system and workstation can also damage attached peripheral devices as well as the workstation itself.

To check if RDIuts is installed:

1. At the "#" prompt, type

   ```
   pkginfo | grep RDIuts.
   ```

2. If RDIuts is present, this command will return the following information:

```
system   RDIuts   Tadpole-RDI UltraBook-IIi Utilities for Solaris 7
```

3. If RDIuts is not present, the "#" prompt will return with no response. Contact your system administrator if you need assistance reloading RDIuts from the VWA Install CD-ROM or downloading it via FTP from www.tadpolerdi.com.

To shut down the UltraBookIIi safely if RDIuts is NOT installed:

1. Save your work and close any application or database that may have work in progress.

2. At the "#" prompt, type `init 0` to shut down the operating system.

3. Press the power switch.

4. Power down peripherals as needed.

To shut down the UltraBookIIi with RDIuts installed (normal shutdown):

1. Save your work.

2. Press the power switch.

3. Power down peripherals as needed.

Moving UltraBookIIi

1. If you want to move the UltraBookIIi after shutting down, disconnect all cables and connectors (including the AC adapter cable) from the UltraBookIIi.

2. Close and latch the rear panel cover, then fold the display cover down and close and latch the case.

3. You can now move the UltraBookIIi to a new location, reconnect, and restart.

Using UltraBookIIi Features

This section contains operational tips and other information unique to the UltraBookIIi feature set. For more detailed information on a listed feature, refer to Appendix B, “UltraBookIIi Specifications”.

Removing Hard Disk Drives

The UltraBookIIi comes equipped with up to three removable hard disk drives.

To remove a hard disk drive:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.
2. Turn the UltraBookIIi over.
3. Press the hard disk drive latch (see Figure 3-6) away from the drive.

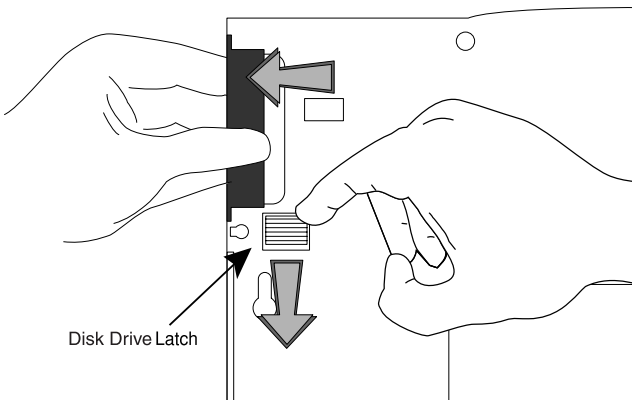


Figure 3-6 Removing the Hard Disk Drive

4. Grasp the drive's faceplate and gently pull it out of the drive bay.

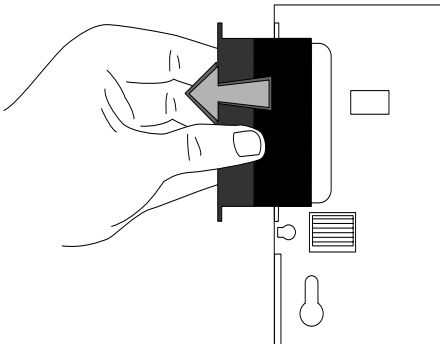


Figure 3-7 Removing the Hard Disk Drive (cont'd)

To insert a hard disk drive:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Insert the drive into the drive bay.

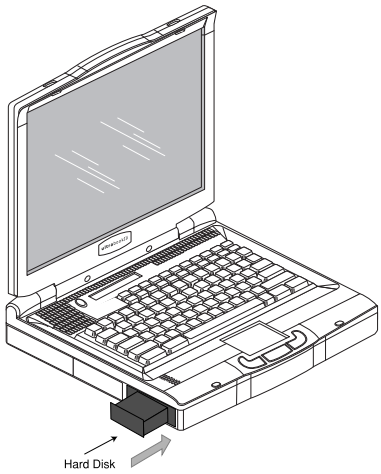


Figure 3-8 Installing a Hard Disk Drive

3. Press gently until you hear the drive click into place.

Recording with the External Microphone

To use this microphone to record:

1. Make sure the recording source is sufficiently close to the microphone (1 to 2 ft).

2. Unplug any external audio input devices connected to the UltraBookIIi.

Ejecting PCMCIA Cards

The eject buttons work each slot independently. To eject a card, push the applicable PCMCIA eject button. The card will release and slide out.

Using an External Keyboard or Pointing Device

- When the UltraBookIIi is on and an external keyboard is connected, the system returns to OBP. Typing **go** and pressing Enter returns you to the Sun operating system.
- An external keyboard and the on-board keyboard can both be used for typing, along with a single pointing device (mouse or trackpad).
- The integrated trackpad is disabled whenever an external pointing device is used.

Using an External Display

To connect an external monitor:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. To connect a Sun-type external monitor, connect it directly to the UltraBookIIi's external video port. Refer to Appendix E, External Monitor Matrix, for more information.

3. For other monitors, attach a J13W3-to-VGA adapter to the UltraBookIIi's external video port. Then connect the external monitor to the other end of the adapter. Refer to Appendix E, External Monitor Matrix, for more information.

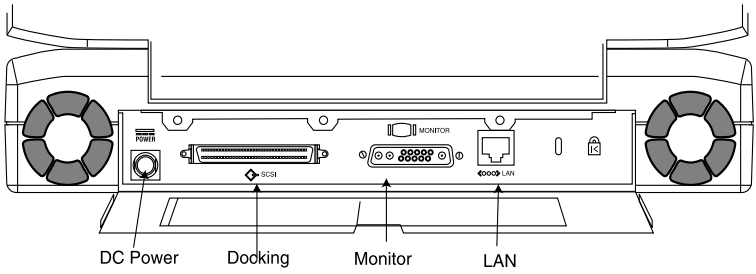


Figure 3-9 UltraBookIIi Rear Access port

Connecting an Ethernet Cable

To connect the UltraBookIIi to an Ethernet network:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Set it on a work surface near the Ethernet twisted-pair cable or transceiver/MAU.

3. Attach a twisted-pair cable to the UltraBookIIi's 10-Base T/100-Base T Ethernet connector (see Figure 3-9).

Using the Serial/Parallel Port

The UltraBookIIi back panel has a 50-pin connector housing two serial ports and a parallel port (see Figure 3-10).

To access serial and parallel ports:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Turn off the serial devices you will be connecting to it.

3. Connect the male end of the I/O break-out cable to the UltraBookIIi's 50-pin connector on the side panel.

4. The other end of the I/O break-out cable has two 25-pin connectors for attaching serial devices and a parallel connector for attaching parallel devices (see Figure 3-10). Make the appropriate serial and parallel connections.

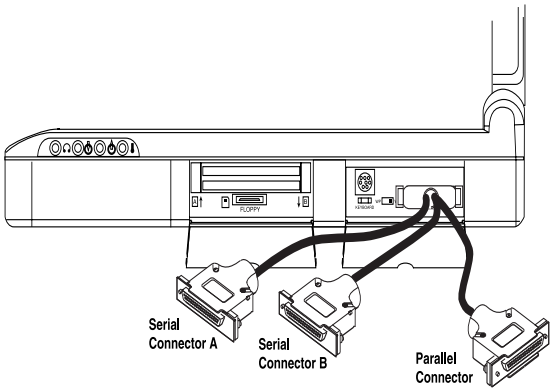


Figure 3-10 Serial and Parallel Connections

For a list of pin assignments for the UltraBookIIi connector and I/O break-out cable, refer to Appendix C.

The two serial ports are designated A and B on the I/O break-out cable. When you connect serial devices to the I/O break-out cable, make sure the device intended for port A is plugged into the port A connector and the device for port B is plugged into the port B connector.

Using the Ultra/Fast-Wide SCSI Port

The UltraBookIIi back panel has an Ultra/Fast-Wide SCSI port (see Figure 3-11). For more detailed technical information on the SCSI port, refer to Appendix A, Hardware, page A-19.

To access the SCSI port:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Turn off the SCSI device(s) you will be connecting to it.

3. Connect the male end of the SCSI cable to the UltraBookIIi's SCSI connector on the rear panel.

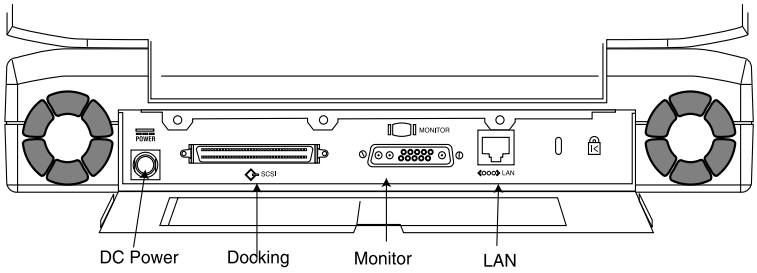


Figure 3-11 UltraBookIIi Rear Access port

4. Make the appropriate connection to your SCSI device(s), daisy-chaining and terminating as required. See Terminating Devices Attached to the SCSI Port later in this section.

For a list of pin assignments for the UltraBookIIi Ultra/ Fast-Wide SCSI port, refer to Appendix C.

Terminating Devices Attached to the SCSI Port

Due to termination requirements and bus loading, follow the configuration guidelines discussed in this section and in your SCSI device documentation.

Daisy-chained SCSI devices—Termination must occur after the last SCSI device. Check the SCSI device manual to see if the device is to be powered on before the restarting of the UltraBookIIi.

External SCSI devices—Use an active terminator with the appropriate connector.

SCSI Bus—External devices can have a maximum SCSI bus length of 2 meters and must have active termination installed at the last device on the external bus.

If SCSI devices are connected to the UltraBookIIi, install an active SCSI bus terminator on the last SCSI device only; otherwise you may experience erratic performance/ operation. The UltraBookIIi provides 5 VDC termpwr for SCSI terminators.

Caution: External devices can have a maximum SCSI bus length of 2 meters and must have active termination installed at the last device on the external bus.

Starting Order

Turn on peripherals such as SCSI devices or a monitor before starting the UltraBookIIi. Refer to the instructions that came with the peripherals for more information about starting order.

Any SCSI devices not turned on when you start the UltraBookIIi will not be recognized. If this occurs, shut down the UltraBookIIi according to the instructions on page 3-10, then turn on the SCSI devices and start the UltraBookIIi again.

Upgrading Memory (RAM)

UltraBookIIi can support up to 1 GB of random access memory (RAM). To upgrade RAM, add or replace RAM modules, available from Tadpole-RDI or authorized dealers in 128 MB, 256 MB, and 512 MB sizes.

Warning: *Be sure to wear a grounding strap when upgrading memory. If you do not, you may damage the UltraBookIIi and risk voiding your warranty.*

To add a new memory module:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Unplug the AC adapter/charger and remove the battery pack from the system.

3. Turn the UltraBookIIi over.

4. Using a small Phillips screwdriver, remove the memory access cover as shown in Figure 3-9.

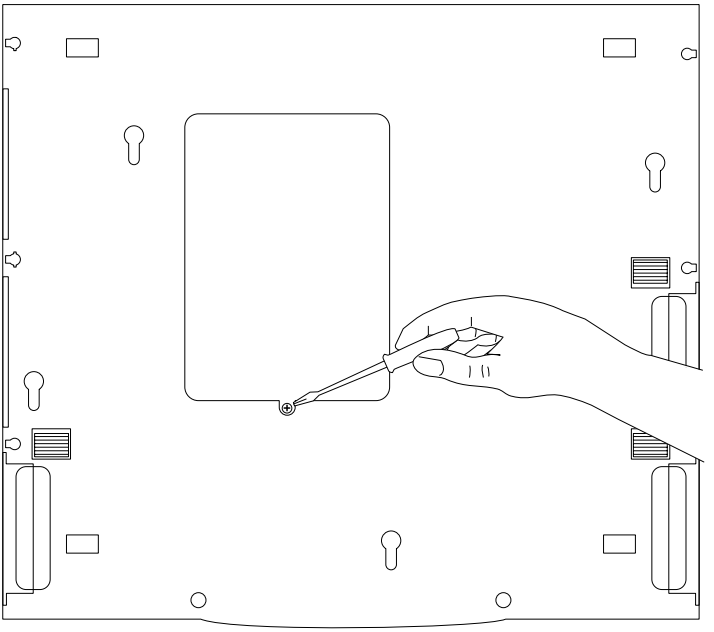


Figure 3-9 Removing the Memory Cover

5. Using a Phillips screwdriver, remove existing mounting screws before inserting memory board.

6. Insert the new module in the available slot (as shown in Figure 3-10) pressing gently but firmly until it is fully seated in the connector.

7. Using a small Phillips screwdriver, insert and tighten the mounting screws that came with the system.

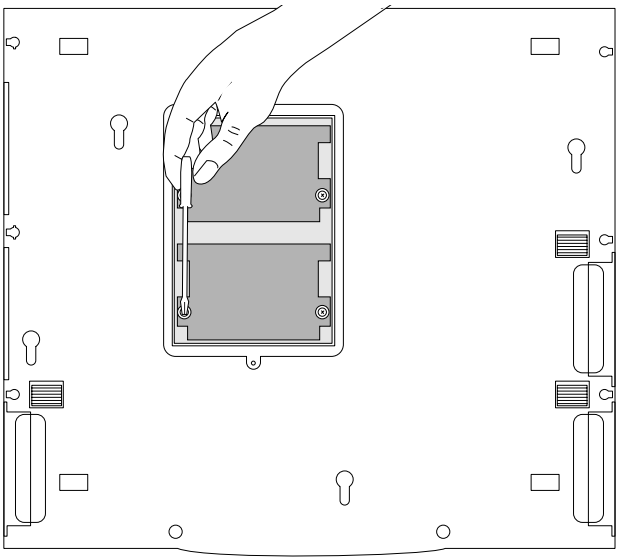


Figure 3-10 Installing the Memory Module

8. Replace the memory access cover and tighten screw.

To replace or upgrade existing memory modules:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.

2. Unplug the AC adapter/charger and remove the battery pack from the system.

3. Turn the UltraBookIIi over.

4. Using a small Phillips screwdriver, remove the memory access cover as shown below.

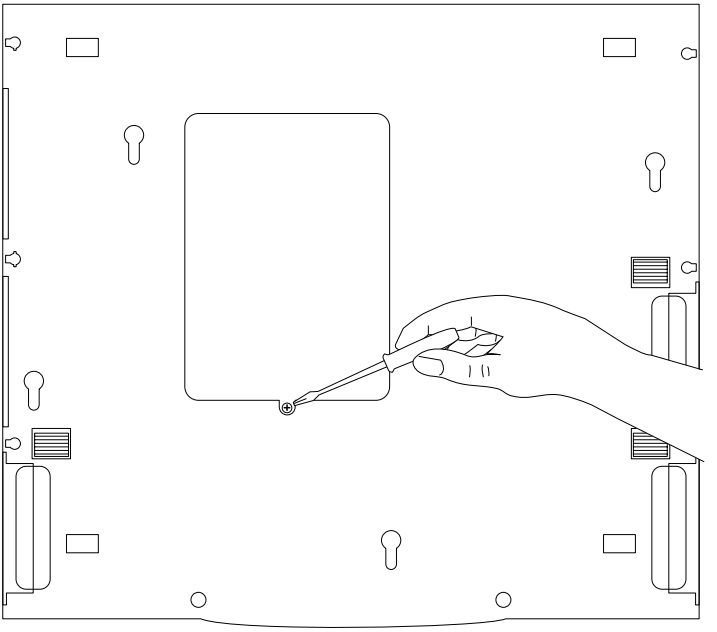


Figure 3-11 Removing the Memory Cover

5. Remove the memory module(s) using one of the procedures described on the following pages.

Caution: Do not place the screwdriver against any printed circuits, individual memory module chips, or points of contact other than those shown in the following illustrations. Prying at other points of contact may damage your memory modules or the main system board and void your warranty with Tadpole-RDI.

   a. Using a small Phillips screwdriver, remove the mounting screws on the memory module(s) you are replacing.

b. Using a small flat-tip screwdriver, pry gently upward against the outer edges of the system's memory module, as shown in Figure 3-12.

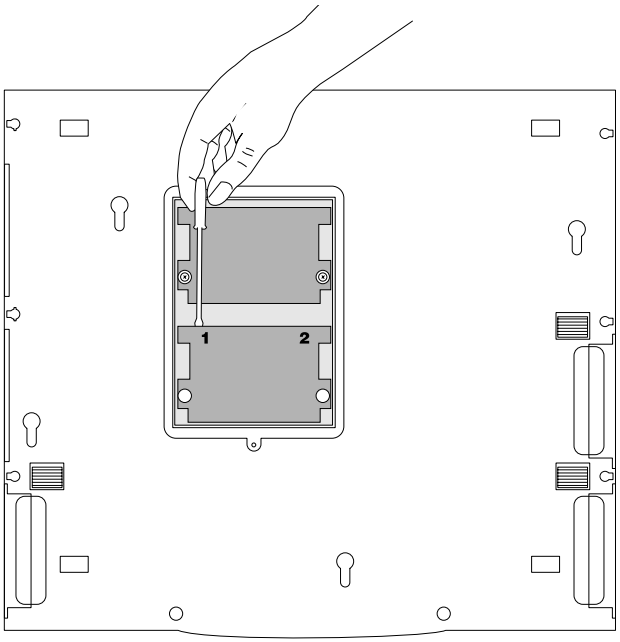


Figure 3-12 Removing the Secondary Memory Module

c. Grasping the memory module by its outer edges, carefully lift the memory module away from its RAM connector and the unit.

Caution: Pry gently upward at the leverage points shown in Figure 3-12 and Figure 3-13 or you may damage your memory modules or the main system board and void your system warranty. The leverage points are numbered and you must pry gently upward in the order shown to remove the memory modules without damaging them.

d. (Optional) Using a small flat-tip screwdriver, pry gently upward against the outer edges of the system's memory module until the memory module is free of its RAM connector, as shown in Figure 3-13.

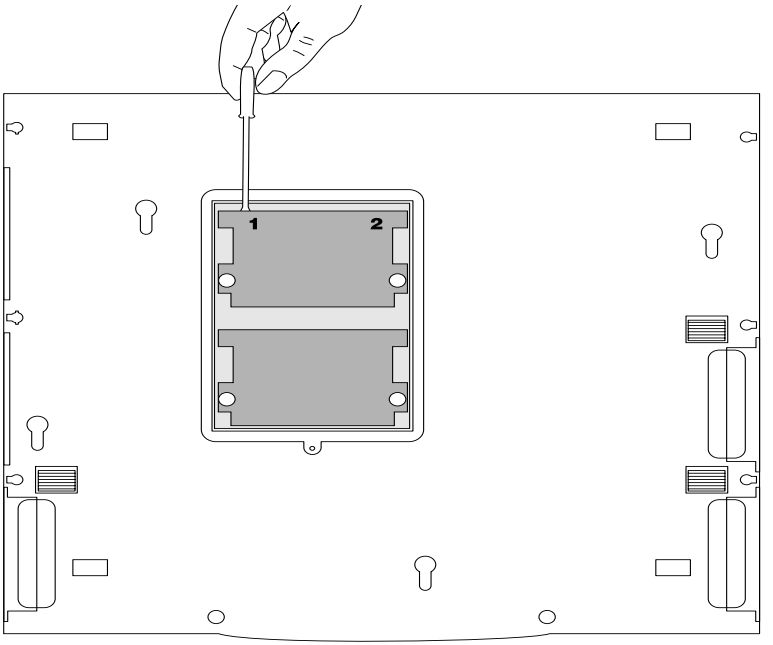


Figure 3-13 Removing the Main Memory Module

e. Grasping the memory module by its outer edges, carefully lift the memory module away from its RAM connector and the unit.

f. Replace the memory module(s) as described on page 3-21.

g. Install the memory mounting screws.

If you have only one memory module installed, use this procedure to remove it.

If you are installing or upgrading only one main memory module, install it in the position of the memory module shown in Figure 3-14 (the memory slot closest to the rear of the unit).

a. Using a small flat-tip screw driver, pry gently upward against the outer edges of the system's memory module until the memory module is free of its RAM connector, as shown in Figure 3-14.

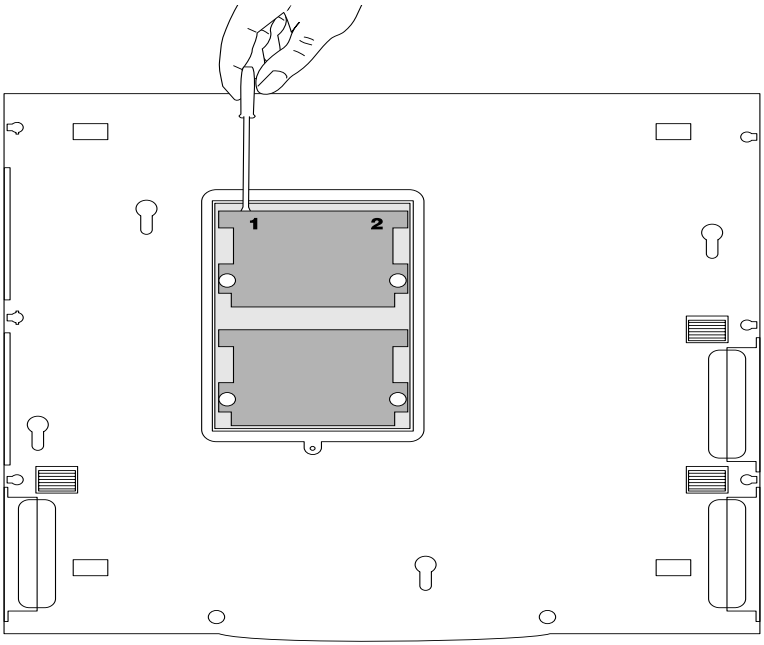


Figure 3-14 Removing the Main Memory Module

Caution: Pry gently upward at the leverage points shown in Figure 3-14 or you may damage your memory modules or the main system board and void your system

warranty. The leverage points are numbered and you must pry gently upward in the order shown to remove the memory modules without damaging them.

b. Grasping the memory module by its outer edges, carefully lift the memory module away from its memory connector and the unit.

c. Replace the memory module as described on page 3-21.

4 Maintaining UltraBookIIi

It is important to maintain the UltraBookIIi. This chapter provides information for cleaning, packing, and storing the workstation, and battery maintenance.

Warning: *Any service and upgrades to the UltraBookIIi which require opening and removing the unit's case must be performed by a trained technician only. Otherwise, you may encounter personal injury, damage the UltraBookIIi, and void your warranty.*

WARNUNG: *Das Öffnen des Gehäuses zum Zwecke der Reparatur oder zum Wechseln/ Hinzufügen von Modulen darf nur von einem qualifizierten Servicetechniker durchgeführt werden. Es besteht Gefahr durch Elektroschock. Durch unsachgemässe Behandlung kann ihre UltraBookIIi Workstation beschädigt werden, ausserdem erlischt dadurch die Garantie.*

Caution: *Changes or modifications to the UltraBookIIi not expressly approved by Tadpole-RDI could void your authority to operate UltraBookIIi.*

If the product does not operate normally, adjust only those controls that are covered by the operating instructions. Unplug the UltraBookIIi from the power outlet and call Customer Service under any of the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the workstation or it has been exposed to rain or water.

- If the workstation has been dropped or the case has been damaged.
- If the workstation exhibits a distinct change in performance for the worse.
- If the display is cracked.

Stop! *After your warranty period, if you ever have to remove the main system unit cover, observe the following precautions:*

The power supply cord must be unplugged and the battery pack removed from the system before the main system unit cover is removed. (Separe le cordon d'alimentation et puls enleve le couverde.)

Once removed, the cover must be replaced and screwed in position before the power supply is plugged back in. (Apres le couverde a encleve, visse le couverde en place et remettre le cordon d'alimentation.)

Cleaning The UltraBookIIi

As a portable workstation, the UltraBookIIi may collect dust and dirt, requiring occasional cleaning.

To clean the UltraBookIIi:

1. Shut down the UltraBookIIi according to the instructions on page 3-10.
2. Unplug the AC adapter/charger and remove the battery pack from the system before cleaning.
3. Once the UltraBookIIi is turned off, you may clean the cases and key tops with a soft cloth dampened only with mild soap and water.

Caution: Never use any water or water-based products on the display panel. Use only a dry, soft cloth. Screen damage could result.

4. Avoid getting any liquid directly on the UltraBookIIi. Moisten a lint-free cloth with cleaner and use the damp cloth to clean the case.

5. Use cotton-tipped swabs, moistened with cleaner, to clean key tops, slots, and recesses. Do not use liquid cleaner on connectors or metal contacts. Use only a commercial contact cleaning spray on such parts.

Caution: Never use flammable or organic cleaning solvents or abrasive cleaners to clean the UltraBookIIi. Such cleaners will damage the case's finish.

6. Use a commercial floppy disk drive cleaning kit to clean the floppy disk drive. Follow the kit manufacturer's instructions carefully.

7. Do not use liquid cleaners on the interior of the UltraBookIIi. Accumulated dust may be blown out of the interior using dry, low-pressure compressed air. Always wear eye protection when using compressed air to blow out dust.

Packing and Shipping

To pack the UltraBookIIi for shipment:

1. Disconnect all cables from connectors on the UltraBookIIi rear panel. Do not pack the UltraBookIIi with cables still attached to connectors.

2. Verify the connector panel on the back of the UltraBookIIi and the battery compartment are closed.

3. Close and lock the display cover.

4. Pack the UltraBookIIi in the **original** shipping container. Follow the instructions printed on the container for proper packing order and configuration.

Caution: Damage caused by shipping the UltraBookIIi workstation in containers other than the original shipping container is **NOT COVERED BY THE WARRANTY. KEEP AND USE THE ORIGINAL SHIPPING CONTAINER**.

If the original materials are unavailable, contact Tadpole-RDI customer service for a new container. The original shipping containers are specifically designed for the UltraBookIIi workstation.

5. Ship with any commercial carrier.

Storage

If you intend to store the UltraBookIIi longer than 60 days:

1. Make a complete backup copy of the contents of the hard disk(s).

2. Fully discharge and remove the battery pack (see Battery Pack Maintenance). Do not store the UltraBookIIi for extended periods with the battery pack installed.

3. Disconnect all cables and pack the UltraBookIIi as described in Packing and Shipping earlier in this guide.

When you want to start using the UltraBookIIi again:

1. Give the UltraBookIIi enough time to stabilize at room temperature before operating. This is particularly important when the workstation is brought from a very cold environment into a warm room. In such cases, moisture can condense on and inside the workstation and can cause problems. Allow at least two hours for the workstation temperature to stabilize after bringing it from a very cold or very warm environment before proceeding.

2. Reinstall the battery pack and charge it for three hours without operating the UltraBookIIi before attempting to operate the UltraBookIIi on battery power.

Low Battery Shutdown

The UltraBookIIi's battery is uniquely designed to provide the longest possible duration. As with any battery, however, prolonged use will require the battery to be recharged. Typically, battery power lasts up to 1 hour, depending on the type and number of processes you are performing.

To prolong battery use, use the brightness push-buttons (**FN Bri+**/**Bri-**) on the integral keyboard to reduce the brightness of, and the power consumption by, the LCD.

As battery power decreases, the UltraBookIIi performs a sequence of events, described in the table on the next page. During this sequence, the UltraBookIIi provides constant messages and an audible alarm informing you of the battery's current status. If you have CDE or OpenWindows running, PowerTool also appears, which displays the current battery voltage. See the note regarding user privileges on page 5-3. If you desire, you can use the PowerTool to turn off the alarm.

The Duration column in the table on the next page reflects approximate times during typical operating activities and conditions.

Battery Status	Duration (Estimated)	System Actions	Actions You Can Perform
Fully charged	Up to 1 hour	None	None required
Low battery condition	10 - 15	Warning message displayed on the Console. Audible warning sounds. If OpenWindows is running, PowerTool window pops up, displaying battery capacity.	Attach AC adapter, or save and begin exiting processes. To complete jobs currently running, use dimmer switch to lower the LCD intensity and save battery power. Use the PowerTool to turn off the alarm, if desired.
Critical battery condition	2 minutes	Power management daemon starts system shutdown sequence, after which it enters PROM Monitor (OBP).	Solaris shutdown cannot be interrupted. Attaching AC adapter will still require you to boot the UltraBookIIi after the shutdown.
Power Shutdown	1-2 minutes	System remains in OBP until battery power is exhausted, causing automatic power shutdown.	Connect the AC adapter and reboot the UltraBookIIi.

Battery Pack Maintenance

When operating the UltraBookIIi from battery power, pay particular attention to:

1. Low battery warning —When the battery reaches the end of its charge, a “battery low” message appears, a beeping alarm sounds, and a PowerTool window appears if CDE or OpenWindows is running. These indications mean you have approximately 15 minutes to complete your work before the battery charge is exhausted.

2. When this occurs, follow the proper procedure to shut down the UltraBookIIi quickly and safely, or connect the AC adapter to maintain system operation. The UltraBookIIi will continue to remind you about the low battery status if you continue to use battery power.

Refer to Chapter 3, Shutting UltraBookIIi Down, for more information on shutting down the UltraBookIIi.

- Swapping battery packs—One way to obtain maximum use out of the UltraBookIIi's portability is to pre-charge one or more rechargeable battery packs before operating the workstation from battery power. For example, you may purchase additional battery packs, charge them, and carry them with you into the field. As each battery pack becomes discharged, bring the UltraBookIIi to a halt, then remove the discharged pack and replace it with one that is fully charged.

If you shut down the UltraBookIIi to swap batteries, you must follow proper shutdown procedures; otherwise, important system files may be corrupted.

- Replacing battery packs—When lithium-ion batteries reach the end of their service life, they indicate their impending failure by providing shorter and shorter intervals of service between recharging and finally by failing to hold a charge. When this occurs, you must replace the worn out battery pack with a new one. Replacement battery packs can be obtained from an UltraBookIIi representative.

Caution: Worn battery packs should be discarded in accordance with the disposal requirements for your area.

5 Power Management

Understanding the PowerTool

The UltraBookIIi PowerTool allows you to control the power management behavior of your system. The main program dialog provides an overview of critical power management areas, including available battery capacity, estimated battery time remaining, current processor speed, and LCD status.

Figure 5-1 shows the main PowerTool dialog.

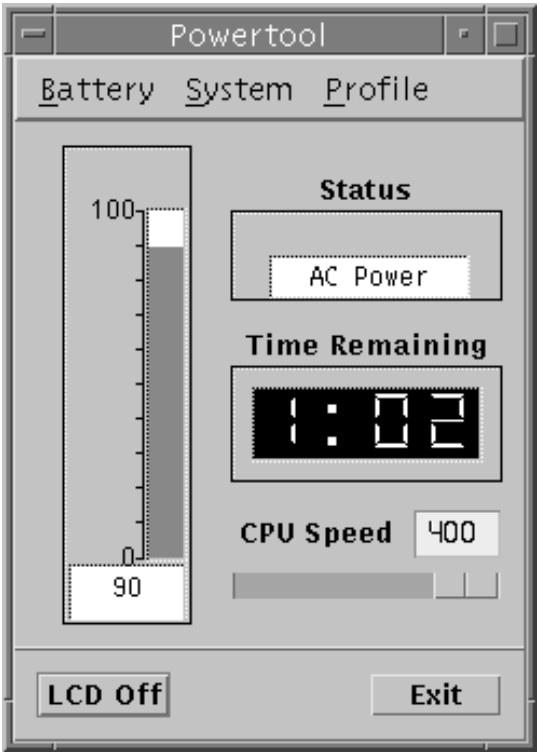


Figure 5-1 PowerTool GUI

The PowerTool is installed as /usr/openwin/bin/powertool when you install the power management utility.

By default, the PowerTool is configured to pop up automatically when the low battery condition configured in /etc/pm/pm.cf is reached. However, you can run the PowerTool at any time using:

- RDI Icon Application Pop Up Menu
- CDE by executing the command /**usr**/**openwin/bin/powertool**
- OpenWindows

Non-privileged users need to execute the command **xhost +** after OpenWindows has started for the PowerTool to pop up automatically during low battery conditions. This command grants other utilities (such as the PowerTool) access to the screen. Refer to the xhost(1) man page for more information.

Caution: If power to the UltraBookIIi is suddenly turned off and there is no available battery power, the unit's power management features will not be able to perform a graceful shutdown, which may damage important system files. For more information on shutting UltraBookIIi down, see page 3-10.

PowerTool Fields

The main PowerTool dialog, shown in Figure 5-1, provides access to all PowerTool power management features. The system displays this dialog if you invoke the PowerTool under OpenWindows or if the system reaches a low-power condition.

This dialog includes the following power management features:

- Fuel Gauge
- Status
- Time Remaining
- CPU Speed
- LCD Off

Fuel Gauge

Capacity shows remaining battery power available to the system. Capacity displays in cumulative increments of 100%. This field is for reference only.

Status

Status displays the current status of the system, **AC Power**, **Battery**, **Calibration**, or **Failure**. This field is for reference only.

Time Remaining

Time Remaining displays the estimated battery time available to the system. The system estimates time remaining in minutes. This field is for reference only.

If the system is on AC and a battery is present, then the time remaining is an estimation of how much time the system would have if it switched to battery at the current capacity. This estimation is based on the last time the system was used with the battery.

CPU Speed

CPU Speed displays the current processor speed.

LCD Off

Pressing **LCD Off** blanks (turns off) the main LCD display panel and locks the keyboard. Press this button to reduce power consumption by turning off the main LCD display panel during critical computations. This feature also prevents you from inadvertently interrupting a lengthy process by blocking unwanted keyboard input. Press one of the buttons of your pointing device to turn the LCD display panel back on.

The LCD display panel will not power up again until user input is detected from one of the buttons of your pointing device. Normal keyboard input and mouse movement *will not* power up the display panel. This functionality is designed to conserve critical computational resources where screen display is not immediately required and prevent interruptions to critical computations.

Exit

Pressing **Exit** allows you to quit or halt the PowerTool dialog.

After installing a new battery pack, use the AC adapter to recharge the battery pack. It takes about 3 hours to recharge a new battery when the UltraBookIIi is turned off. After fully charging the battery pack, you can operate the UltraBookIIi for about 1 hour with a single battery, depending on your configuration and applications.

PowerTool Menus

The PowerTool menus provide access to additional power management features.

- Battery
- System
- Profile

Battery

The Battery menu provides access to the battery management, battery priority, and calibration features.

Battery Management

The Battery Management dialog indicates if the battery is installed, including capacity, state and availability to the system. Battery capacity is shown in bargraph and numerical form by the indicator displayed.

If a battery is not being discharged or charged, the battery state is shown as **Idle**, unless a battery requires calibration. If a battery requires calibration, the word **Calibrate** is displayed beneath the battery indicator.

Batteries requiring calibration should be recalibrated at your earliest opportunity. Battery calibration requires connection to AC power. Refer to page 5-8 for instructions.

The Battery Management dialog also allows you to immediately query the system to update existing battery management information by pressing **Reprobe**. The PowerTool continually monitors and queries the workstation for the most up to date battery information.

You can reach this dialog by opening the main Battery pull-down menu and selecting Battery Management from the PowerTool dialog.

Figure 5-2 shows the Battery Management dialog.

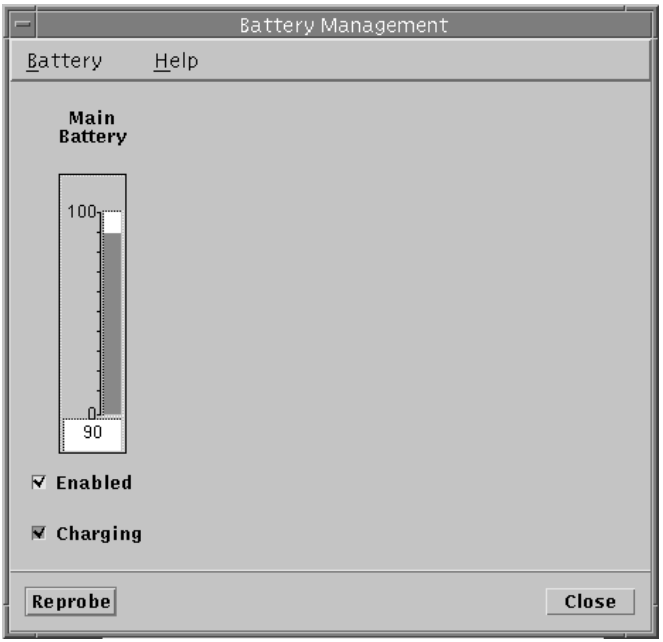


Figure 5-2 Battery Management

Battery Priority

The Battery Priority dialog allows you to establish a first choice priority of use for the battery modules installed in your system. Making a selection here directs the system to use a specific battery module before all others when running on battery power. You can reach this dialog by opening the main Battery menu and selecting Battery Priority from the PowerTool dialog.

Figure 5-3 shows the Battery Priority dialog.

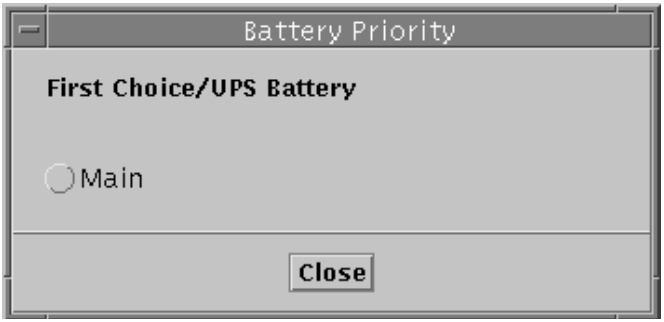


Figure 5-3 Battery Priority

Calibration

The Calibration dialog allows you to calibrate a specific battery for use with the Power Tool Fuel Gauge shown in Figure 5-1. You can calibrate the main system battery by pressing **Calibrate** at the Calibration dialog. You can reach this dialog by opening the main Battery menu and selecting Calibration from the PowerTool dialog.

Figure 5-4 shows the Calibration dialog.

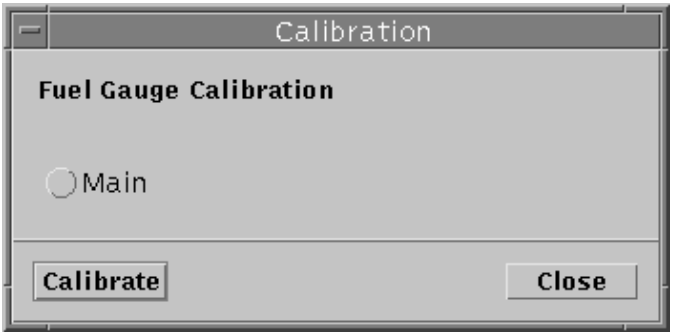


Figure 5-4 Calibration

System

The System menu provides access to PowerTool system control features, including audible warnings, screen blanking, powering down and system suspension behavior, and system speaker settings. You can also restore system control defaults at this dialog by pressing **Restore Defaults**. You can reach this dialog by opening the System menu and selecting System Control from the PowerTool dialog.

Figure 5-5 shows the System Control dialog.

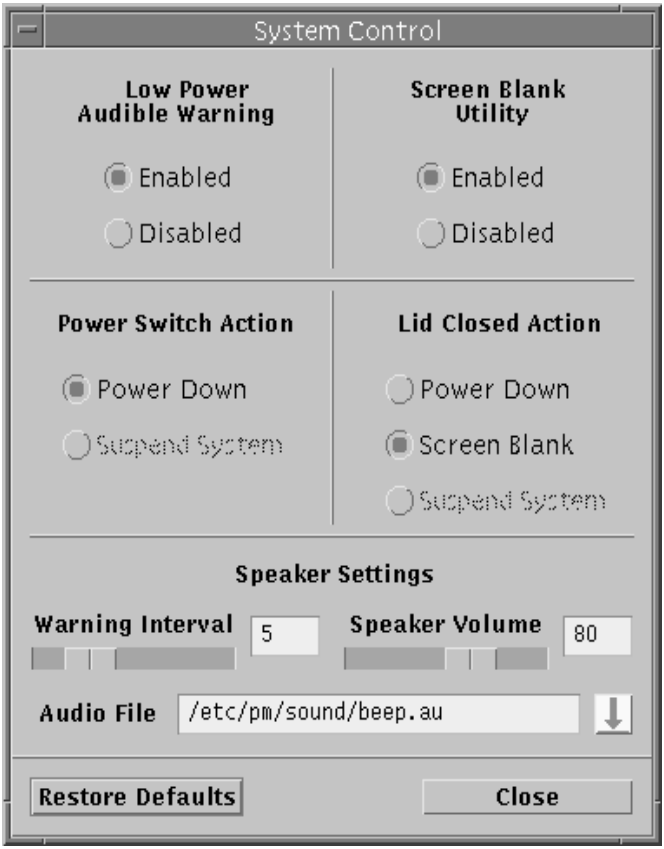


Figure 5-5 System Control

Profile

The PowerTool Profile menu provides access to the system power management profile. The power management profile is easily reviewed or changed by using the Power Management Profile dialog. Pressing **Details** allows you to set details specific to your power management profile and the section of that profile you want to change. Pressing **Restore Defaults** allows you to restore the system defaults to your power management profile. You can reach this dialog by opening the Profile menu and selecting Power Management Profile from the PowerTool dialog.

Figure 5-6 shows the Power Management Profile dialog.

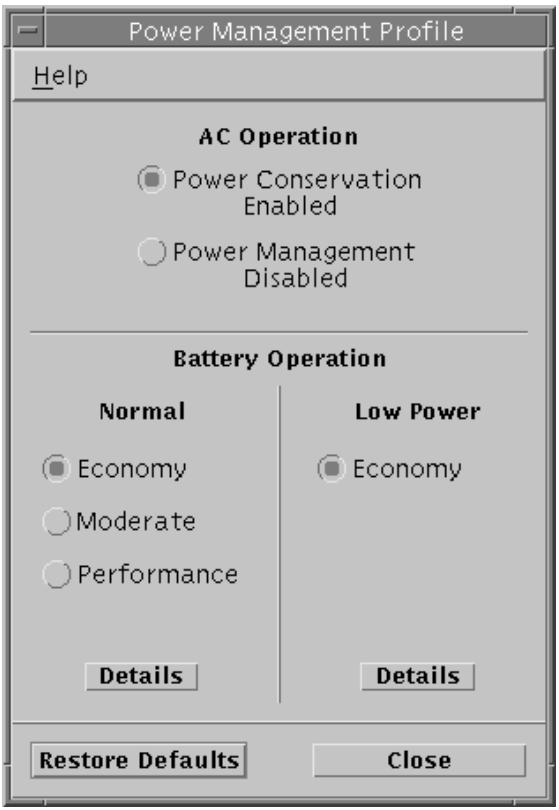


Figure 5-6 Power Management Profile

Figure 5-7 shows the details dialog for the Low Power section of the Power Management Profile dialog.

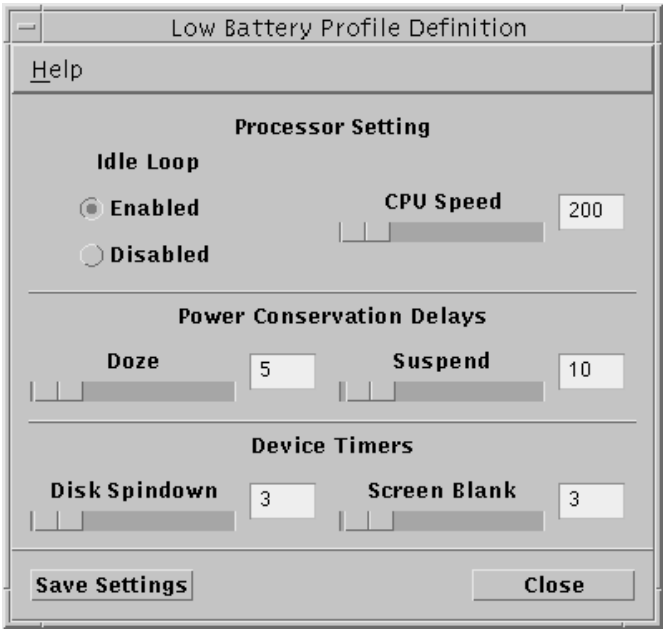


Figure 5-7 Low Battery Profile Definition

Power Conservation Delays are not supported at this time. This feature will be supported in future releases of the PowerTool software. Contact your authorized Tadpole-RDI representative for current updates and related product information.

The PowerTool Configuration File

The following shows the contents of the Power Management Configuration file distributed on the VWA CD.

Caution: Tadpole-RDI does not recommend modifying or changing the PowerTool Configuration file. Modifying this file can seriously degrade workstation performance.

Power Management Configuration File

```
# SCCS ID "@(#)pm.cf            1.12 -- MODIFIED 12 Apr 1995 11:45:05"
# Configuration file for the RDI 'pmd' (Power Management Daemon)
# and Powertool GUI interface.
#
#   Legend:1 = ON/ENABLED, 0 = OFF/DISABLED
#
#     Battery Operation Mode Settings
#
#                   Disk                    SCrn    Idle
#            MHZ    Timer    Doze  Suspend  Blank   Loop
#
E_DEF        200    3        5  10 3        1
M_DEF        300    5        10 30 5        1
P_DEF        440    10       30 60 10       0
C_DEF        XXX    X        X  XX X        X
LC_DEF       XXX    X        X  XX X        X
#
# = System Control
#
#     - Low Power Audible Warning
#
AUDIO          1
#
#     - Screen Blank Utility
#
SCREEN_BLANK   1
#
#     - Power Switch Action
#     - Exhausted Battery Action (uses same button action)
#       Valid are POWER_DOWN, SCREEN_BLANK and SUSPEND
#       for BUTTON_ACTION and LID_ACTION
#
BUTTON_ACTIONPOWER_DOWN
#
#     - Lid Close Action
#
LID_ACTIONPOWER_DOWN
#
#     - Volume to play the audible file at (0 to 120):
#
VOLUME      80
#
#     - Delay between Audible Warnings
#
AUDIBLE_TIMER5
#
#     - File to use for audible warning
#
```

Power Management Configuration File

```
SOUNDFILE/etc/pm/sound/male.au
#
#      - Action Definitions
#
SUSPEND      /usr/openwin/bin/rdi-suspend
POWER_DOWN /etc/pm/power-off
#
# = Power Management Profile
#
#      - AC Power Conservation Measures
#
POWER_CONSERVATION  0
#
#      - AC Power Conservation Parameters
#
AC_OP        440    10     30    60      10     0
AC_SAVE_OP   200    10     30    60      10     0
#
#    - Battery Operation
#       Choices: E- Economy, M - Moderate, P - Performance
#
BATTERY_OPERATION    E
LOW_BATTERY_OPERATION     E
#
#             --- Noconfigurable Parameters ---
#

# The remaining options below can not be set via the PowerTool
# and must be changed by hand.  CAUTION:  These settings are
# not recommended to be changed.
#
#      Battery levels in percentage (%):
#            Warning Shutdown
#
BLEVELS        15      5
#
# Intervals to sample available battery power
#
#             Normal  Warning
BATTERY_TIMER  15      5
#
# When power gets into the Low Battery Interval execute:
#
WARN_ACTION/usr/openwin/bin/powertool -iconic
```

Notes

6 Troubleshooting

Use the suggestions in this chapter to diagnose and correct typical problems you may encounter.

To help you find the relevant information quickly, refer to the following Quick Fix Table.

Starting and Booting

Symptom: The UltraBookIIi will not power up from the AC adapter.

Make sure that:

- The power-on icon  is displayed on the Status LCD after pushing the power button.
- The AC adapter is securely plugged into the UltraBookIIi's power input socket, and the AC adapter's power cord is securely plugged into both the AC adapter and the AC outlet.
- Power is available at the outlet (use a lamp to test it).

Symptom: The UltraBookIIi will not power-up from the battery.

Make sure that:

- The power-on icon  is displayed on the Status LCD after pushing the power button.
- The battery pack is correctly installed in the battery compartment. Refer to pages 3-5, 4-7, and A-21 for complete information.
- The battery pack is fully charged.

Symptom: The UltraBookIIi will not access the Ethernet.

Make sure that:

- The server is properly operating and the Ethernet link is functioning.
- The RJ45 or twisted-pair cable is securely plugged into the UltraBookIIi connector.
- The workstation's operating system is correctly configured for the network, if this is a new network node.

Symptom: The UltraBookIIi will not boot from the hard disk drive.

If the hard drive activity icon  :

- Does not display, indicating a hard disk problem exists, contact Tadpole-RDI Customer Service and Support.
- Displays, but the UltraBookIIi fails to boot, boot from the Solaris CD-ROM and restore the boot file. If this fails the boot files may be corrupted and you may have to reload the operating system.
- Displays, but the UltraBookIIi fails to boot, boot from the CD-ROM for further diagnostics.

Symptom: The UltraBookIIi halts during boot and displays the following messages:

```
boot device:/PCI Bus/le@0,00000 File andargs:
lost carrier (transceiver cable problem?)
ARP/RARP send failed.
Check Ethernet cable and transceiver.
Lost carrier (transceiver cable problem?)
ARP/RARP send failed.
Check Ethernet cable and transceiver.
```

a. The UltraBookIIi is trying to boot from an Ethernet server that is either not connected or unavailable. Hold down the **Stop** key and press **A**.

b. At the "OK" prompt, type: `boot disk`.

c. If Step b above fails, type: `set-defaults` to set the workstation to the default, then try step B once more.

Symptom: The UltraBookIIi stops booting for several minutes and displays the following message:

```
Starting RPC and net services:
```

The system then displays one of the following error messages:

```
hme0: no carrier transceiver cable problem
```

-OR-

```
NIS: server not responding to domain "???"; still trying
```

a. The UltraBookIIi is configured to use an NIS server that is not connected or is unavailable. Hold down the **Stop** key and press **A**.

b. At the "OK" prompt, type: `boot -s`. Several system messages appear, followed by the "#" prompt (the single user prompt).

c. At the "#" prompt, type
```
mv /var/yp  /var/yp-
```
or
```
mv /var/nis  /var/nis-
```
and
```
cp /etc/nsswitch.files /etc/nsswitch.conf
```

d. At the "#" prompt, type `exit` and press **Enter**.

Blank LCD Display Panel

Symptom: The LCD display panel goes blank and the system will not respond to the keyboard or to moving the pointing device.

- If the LCD Off feature has been activated in the PowerTool power management system, press one of the buttons of your pointing device to reactivate the LCD display panel. Refer to page 5-4 for more information about LCD Off.
- The LCD display will also be blank if the UltraBook has shut down automatically due to low battery capacity or user inactivity. Refer to Chapter 5 for more information on Power Management.
- A blank LCD display may also indicate a system failure if the system does not behave normally after shutting down and restarting.

Battery Operation

Symptom: Low battery warning occurs when the workstation is started or shortly after power-up.

a. Connect the AC adapter, shut down the system according to the instructions on page 3-10, and recharge the battery for 3 hours, then try using the UltraBookIIi again.

b. If recharging fails to correct the problem, test the AC adapter by removing the battery pack from the UltraBookIIi and trying to operate from the adapter only.

c. Try to calibrate the battery. For more information about battery calibration, see "Calibration," on page 5-8.

d. If the AC adapter is working and the battery still fails to hold a charge, replace the battery pack.

Replacement battery packs can be obtained from an UltraBookIIi representative.

Caution: *Never use alkaline batteries in the UltraBookIIi. This can be very hazardous and severe damage may occur to the workstation.*

Warnung: UltraBookIIi wird mit einem aufladbaren nickel cadmium akku ausgelifert. Versuchen sie auf keinen fall, ihre UltraBookIIi workstation mit trockenbatterien (primarzellen) zu betreiben oder solche mit dem konnen personen-oder sachsaden zur folge haben.

SCSI Port

Symptom: External SCSI device fails to function.

Make sure that:

- Active termination is installed on the last connected SCSI device. Otherwise, you may experience erratic performance/operation.
- The SCSI device is connected to an AC outlet and energized.
- The SCSI cable is properly connected and functioning.
- The SCSI device can be probed
  `ok probe-scsi`

Ethernet

Symptom: The UltraBookIIi fails to access Ethernet.

1. Check for the Ethernet icon ⟪⟷⟫ in the status LCD display.

2. If you have the "console" window active, the Ethernet cable can be removed or inserted any time. When inserted, the speed and duplex conditions of the connection are displayed.

3. If you access the twisted-pair connector, make sure the twisted-pair cable is securely connected to the UltraBookIIi connector.

4. At the "#" prompt, type `ifconfig -a` and look for `hme0` and press **Enter** to verify the Ethernet connection. Your display should show a list of active flags, one of which must be "up". You should also see your Internet address.

   If `hme0` does not appear, try typing the following commands at the "#" prompt:

   ```
   ifconfig hme0 plumb
   ifconfig hme0 IPADDR up
   ```

5. Type `ping -s <hostname>` and press **Enter** to verify your connection to the host. The display should show the following information continuously:

   - "64 bytes returned"
   - Your Internet address
   - One ICMP sequence number
   - The round-trip time it takes data to travel from the workstation to the host and back

If <hostname>is not in your host file, use an IP address.

To stop this information from scrolling, hold down the **Ctrl** key and press **C**.

6. Run `watch-net` at OBP as low level hardware port check.

Serial Ports

Symptom: Serial device fails to function.

- Check that the device is connected to the correct serial port. Verify the port assignment by connecting the device cable to the other serial port and retrying the serial port.
- Port parameters may be configured incorrectly for the application or attached device. Refer to the manual that came with your application or device for more information.

External Video Port

Symptom: External monitor display remains blank.

- Check the monitor connection to the UltraBookIIi. If you use an external monitor, be sure that your monitor cable uses a Sun 13W3 type connector. A J13W3-to-VGA adapter is required to connect non Sun-type external monitors to the UltraBookIIi.
- Check Appendix E for the correct combination of external monitor and OBP commands. UltraBookIIi will support only selected monitor resolution and refresh rates. Check the external monitor manual to make sure the monitor is compatible with the UltraBookIIi output.

- Be sure to provide the correct OBP-PCI-Bus-probe-list parameters to enable or disable the external monitor. Refer to Appendix E.

External Keyboard/Mouse Port

Symptom: The external keyboard or mouse fails to work.

- Make sure that the external keyboard or mouse is securely plugged into the appropriate UltraBookIIi connector.

Customer Service and Support

If the troubleshooting information in this chapter does not resolve the problem, you may contact Tadpole-RDI's Customer Service and Support staff.

North America
7:00 AM to 6:00 PM PST
Phone (800) 734-7030
Fax (760) 930-0762
Email: support@tadpolerdi.com

Europe
9:00 AM to 5:00 PM GMT
Tel: +44 1223 428200
Fax: +44 1223 428201
E-mail: support@tadpolerdi.com

Before you call, have the UltraBookIIi serial number nearby. This number appears on the bottom of the UltraBookIIi.

If you received an error message, it will also help if you write down the following information:

1. Serial number of your system.
2. The exact description of the problem.

3. The task you were performing when you encountered the problem.

4. The command you typed when the error occurred. You may want to check the command line to make sure you did not make a mistake.

5. The directory you were in. You can use “pwd” to obtain this information.

6. The account you were using. You can use “whoami” to obtain this information.

7. Version of the operating system you are using. You can use one or both of the two following commands to obtain different types of version information.

    - Use **uname -a** to obtain release information including the exact patch.

```
SunOS xxxxxxx x.x Generic_xxxxxx-xx sun4u SUNW,Ultra-x_x
```

    - Use **more /etc/release** to obtain release information including the release date on the install CD.

```
                Solaris 7 x/xx xxxxx_xx_xxxxx_xx SPARC
     Copyright xxxx Sun Microsystems, Inc.  All Rights Reserved.
                        Assembled xx xxxxx xxxx
```

Notes

A Detailed Hardware Description

This chapter provides a detailed description of the UltraBookIIi hardware.

Physical Packaging

The UltraBookIIi provides a slim, clamshell-style package, while maintaining full workstation capability. The UltraBookIIi laptop form-factor weighs 7.5 pounds and has a footprint of 11 inches deep by 13 inches wide.

The keyboard is forward mounted in the base section of the UltraBookIIi and the base section is sloped to provide a comfortable palm rest for wrist support during extended use. The center positioning of the 66 mm x 55 mm integrated touchpad allows right- or left-handed usage.

The textured case of the UltraBookIIi provides non-slip carrying and scratch resistance. The hinged lid assembly allows 120° swivel for various viewing positions. The UltraBookIIi may operate with the lid closed when an external monitor and keyboard are attached.

CPU Technology

The system motherboard is a dual-sided, 12.4-inch by 10.6-inch PCBA. This PCBA contains the processor complex, and several embedded I/O controllers. Dual-sided surface mount technology and BGA (Ball Grid Array) packaging reduce physical requirements and improve reliability.

The basic motherboard architecture is based on the Sun Ultra AXi reference design. The Sun Ultra AXi reference design consists of a Sun UltraSPARC-IIi processor and processor complex. The processor complex includes an external cache RAM, system data buffers, and clock generator.

The processor complex supports the system processor and administers the UPA (UltraSPARC-IIi Port Architecture) bus. Joining the UPA bus to the system's dual PCI buses is the APB chip. This makes the Sun Ultra AXi architecture unique among Sun architecture by allowing it to use the PCI bus as its main I/O bus.

A PCIO connects the PCI bus to low-level I/O functionality, including the E-bus and the Ethernet media access layer. The Ethernet media access layer bridges the Ethernet MDO layer with the Media Independent Interface (MII) layer.

The E-bus is a low-level peripheral interface providing connection to the flash boot memory, NVRAM, and PSM bus interface. The PSM bus provides connection to the system's intelligent power supply module.

A RIC chip (Reset Interrupt Controller) handles the timing necessary to support power-on reset of the motherboard. The RIC chip also manages the interrupts generated on the motherboard for further processing by the UPA bus and the system processor.

An embedded EIDE controller provides all hard disk capability and access.

SPARC Compatibility

The 400 series UltraBookIIi uses a SPARC-compatible motherboard, based on the Sun UltraSPARC-IIi processor, and runs at 400 MHz, depending on your configuration. The 400 series UltraBookIIi also uses the Sun LSI chipsets for compatibility. As a result, any hardware or peripheral device compatible with Sun workstations is fully compatible with the UltraBookIIi.

UltraBookIIi 400

The UltraBookIIi 400 CPU uses the Sun UltraSPARC-IIi processor operating at 400 MHz. The 521-pin BGA device resides on the motherboard.

The UltraSPARC-IIi processor chip houses both the IU and FPU functions, as well as first level caches. These caches contain 16 KB for data and 16 KB for instructions. The UltraBookIIi includes an integrated 2 MB external cache.

The processor interfaces directly with the memory subsystem and the PCI Bus.

At 400 Mhz, the CPU delivers 17.9 SPECint95 and 20.6 SPECfP95.

Flash Memory

The UltraBookIIi includes 1 MB of flash memory for use during system bootup. Also included is a Flash Write-Protect and Write-Enable (WP/WE) switch located between the external keyboard/mouse connector and the parallel/serial port. This enables you to write enable or write protect the system boot memory, for system updates as needed.

Caution: Tadpole-RDI suggests that you keep this switch in the Write-Protect (WP) position during normal operation

System Memory

Memory on the UltraBookIIi is accessed through a 288-bit data path. UltraBookIIi memory includes ECC protection. The memory subsystem supports memory of 60 ns access time.

The UltraBookIIi accepts 128 MB, 256 MB, and 512 MB expansion modules using the following 64 MBit DRAM configurations:

- 4 M x 16
- 8 M x 8
- 8 M x 16

The UltraBookIIi comes with a minimum memory configuration of 256 MB. System main memory is provided through plug-in expansion modules. Additional memory upgrades provide a maximum configuration of 1 GB.

Three versions of the main memory module are available, each providing a different amount of system memory. Memory modules are user-installable and must be installed in equivalent pairs.

Valid Memory Configuration	Memory Modules Required
256 MB	2 x 128 or 1 x 256
512 MB	2 x 256 or 1 x 512
1 GB	2 x 512

All memory modules must be installed in equivalent pairs. If you attempt to mix 128 MB modules with 256 MB or 512 MB modules, the UltraBookIIi will not function.

Display Technology

The UltraBookIIi 400 series workstations support high resolution 1024 x 768 LCD panels. The UltraBookIIi can also come equipped with the Creator 3D graphics options. The Creator 3D graphics options support refresh rates of 120 Mhz or higher and require an external monitor for display resolutions greater than 1024 x 768 pixels.

Standard Display Controller

The standard UltraBookIIi display controller is a PCI controller based on the ATI 3D RAGE LT with a 4 MB frame buffer. The standard controller conforms to the ATI MACH 64 architecture standard. This controller is a multi-functional and multi-resolution display. The display controller drives the internal display panel first and then provides output to an attached external monitor, supporting a maximum color density of 256K or 64 shades of gray at 1024 x 768 pixels. The standard display controller supports a maximum refresh rate of 76 Hz.

Active Matrix Display

The UltraBookIIi is configured with one of two display screens:

- ATI
- Creator 3D Graphics

Both are 14.1 inch 1024 x 768 active matrix color LCD. This display type supports 256 colors from a palette of 262,144 colors plus 64 shades of gray scale. It has a 60 Hz refresh rate.

The display has a response time of 80 ms and also makes use of two brightness push buttons to optimize display viewing. The brightness push button, **FN Bri-** and **Bri+** , are located on the UltraBookIIi's keyboard. Both display panels use active matrix TFT technology. The LCD draws approximately 3 watts.

As an added convenience, the UltraBookIIi provides a J13W3 port on the back panel for attaching an external monitor, as shown in Figure A-8.

External Monitor Support

Sun-type or other self-sensing monitors with J13W3 connectors plug directly into the external video port on the UltraBookIIi back panel, as shown in Figure A-8.

If you have a different type of monitor, check your monitor manual and Appendix E for compatibility and use the included adaptor to connect the monitor.

When using the internal LCD, an external syncing monitor can also be attached, allowing simultaneous LCD and monitor operation. For non-Sun or non-self-sensing monitors you will need a J13W3-to-VGA adapter. If external non-syncing monitors are used, the internal LCD will not operate during external monitor operation (it will be blanked).

The UltraBookIIi supports simultaneous on-board and external video device display using VESA standard 1024 x 768 x 60Hz mode and timing.

The UltraBookIIi supports the following external monitor standards:

- SVGA (800 x 600)
- XGA (1024 x 768)
- Sun (1152 x 900)
- SXGA (1280 x 1024)
- Frame rates, 60 Hz, 72 Hz, 76 Hz

For more information on using external monitors, see Appendix E.

Creator 3D Display Controller (Optional)

The UltraBookIIi can be configured with a Sun Creator 3D display controller for two or three dimensional computer aided drawing or modeling (CAD/CAM). The Sun Creator 3D graphics options provide accelerated 24-bit color. The UltraBookIIi provides a high-performance output jack for 3-D glasses in place of a hard disk device bay, if the Creator 3D Graphics option is installed.

The Sun Creator 3D Graphics option requires the use of a high-performance, high-resolution external monitor for display resolutions greater than 1024 x 768. You can use the Creator graphics option with the attached LCD panel for display resolutions of 1024 x 768.

If the Creator 3D Graphics option is installed, you can equip the UltraBookIIi with a maximum of two hard disk drives or one hard disk drive and one battery module.

Status Liquid Crystal Display (LCD)

A single LCD panel below the main display shows current system status and activity. The status LCD indicator uses symbols to show the state of various system functions and conditions as described in the following table.

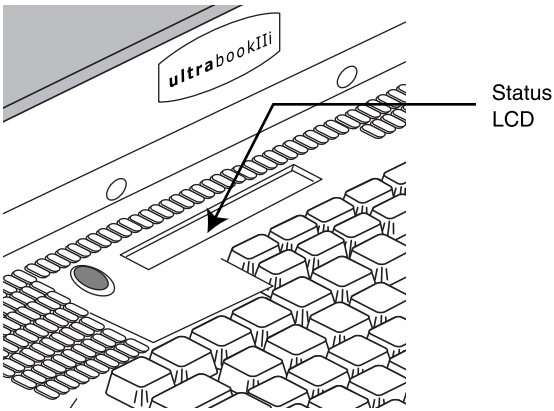
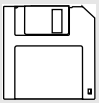
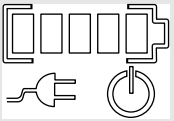


Figure A-1 Status LCD

The Status LCD provides a running status on the following items and conditions:

- Hard disk
- Floppy disk
- Network
- External Monitor
- Caps Lock
- Compose
- Battery
- AC cord
- Power Button
- Over temperature indicator

Symbol	Condition
	Hard disk
	The hard disk activity symbol displays during hard disk use, e.g., during read/write operations and other conditions where hard disk activity is required.
	Floppy disk
	The floppy disk activity symbol displays during floppy disk use, e.g., during read/write operations and other conditions where floppy disk activity is required.
	Network
	The network activity symbol displays during network use. This symbol continues to display as long as you are connected to a networked environment.
	External Monitor
	The external monitor symbol displays after you have connected the workstation to an external monitor or other display device, e.g., LCD projection panel. This symbol continues to display as long as you are connected to an external display device.
	Key Lock Status
	This symbol displays after you press the Caps Lock key on the keyboard. It continues to display until the key is pressed again and released. 
	This symbol displays after you press the Compose key on the keyboard. It continues to display until the key is pressed again and released. 

Symbol	Condition
	Power Status
	 This symbol appears during normal battery use and operating conditions. During normal battery use, the battery symbol displays percentage of available capacity in percentile segments of 20% each. It continues to display as long as battery power is in use or until the current battery process terminates. When the battery is charging, the outer edges of the symbol blink to indicate a charging state.  This symbol appears when AC power is in use, e.g., when using the workstation's AC adapter.  This symbol appears after you push the power button to turn on the workstation. It continues to display until the power button is pressed again to turn off the workstation.
	Over Temperature
	This symbol appears during two operating conditions, over temperature and critical high temperature. When the operating temperature is outside of acceptable parameters, the symbol displays and flashes to warn you of this condition. If the temperature continues to exceed acceptable parameters, the over temperature symbol turns a solid color and the workstation shuts down.  **Caution**: Do not allow the UltraBookIIi to reach a state of critical high temperature—this will damage the unit.

Input-Output Devices

Input-output devices are supported through device bays and access panels. The UltraBookIIi has three device bays and three access panels.

Device bays are cavities in the unit into which you can install modular devices such as a hard disk drive or a single lithium-ion battery. Two device bays are located on the left side of the unit and are reserved for hard disk drive modules. The third device bay is located on the right side of the unit and is configured at the factory to accept either a lithium-ion battery module or a hard disk drive. Empty disk modules are available for empty or unused device bays.

Access panels consist of ports, connectors, and switches hidden behind three fold-down panel doors. Two access panels are located along the right side of the unit. The third access panel is located to the rear of the unit. Audio devices are supported through a series of input and output jacks located directly above the third device bay.

The UltraBookIIi accepts the following removable device modules:

- Removable hard disk drives
- Lithium-ion battery module

Hard Disk Storage

The UltraBookIIi uses low-profile, high performance, 2.5-inch removable hard drive modules with an integrated EIDE controller conforming to ATA-4 PIO mode 4 and multi-word DMA modes 0, 1, and 2 specifications. These drives require a 5V input and dissipate approximately 2 Watts of power.

Hard disk modules can be installed in either of the two left-side device bays if the unit is not configured for the Sun Creator 3D graphics options.

If the UltraBookIIi is configured at the factory to support a hard disk drive in the front-most, right-side device bay, this hard disk drive replaces the unit's removable battery module and you cannot use battery power.

Of the two left-side device bays, the device bay closest to the front of the workstation is reserved for the system's primary boot device. If you have only one hard disk, install it in this slot.

You cannot install a hard disk drive in the rear-most, left-side device bay if your configuration supports the Creator 3D graphics display option. A ventilation faceplate covers the secondary device bay on the left side of the workstation, allowing a maximum of two hard disk drives.

External Floppy (Optional)

The UltraBookIIi supports an optional 3.5-inch 720 KB/ 1.44 MB external floppy disk drive via a standard 15-pin floppy drive connector. The external floppy drive provides media ejection via a manual push button. It does not provide software eject.

The floppy drive supports both 720 KB, Double-Sided, Double-Density (DSDD) and 1.44 MB, Double-Sided, High-Density (DSHD) diskettes.

The floppy drive connector is located beneath the PCMCIA slot, as shown in Figure A-9. The external floppy is powered by the unit through the standard 15-pin floppy drive connector.

PCMCIA (PC Card)

The UltraBookIIi has two PCMCIA slots, as shown in Figure A-9. The PCMCIA slots are located above the external floppy drive connector, on the right side of the workstation. The workstation supports two Type I or Type II cards or one Type III card.

Always refer to the PCMCIA device manual for information about the device you are using.

Keyboard and Touchpad

The UltraBookIIi's 97-key internal keyboard (as shown in Figure A-2) provides all the functions of a Sun Type-5 US keyboard. The UltraBookIIi also provides an integrated touchpad for operations that require a pointing device.

Internal Keyboard

A full-sized, 97-key, 12-function key keyboard is standard for the UltraBookIIi, as shown in Figure A-3. The keyboard includes an integrated 3-button touchpad for applications that require a pointing device. The dual-ported keyboard controller supports simultaneous external and internal keyboard operation.

The UltraBookIIi provides a round DIN-8 connector to accommodate Sun Type-5 external keyboards, domestic or international, as shown in Figure A-9.

If you connect a domestic keyboard to the UltraBookIIi's external keyboard connector, the on-board keyboard is unaffected. You can then use either keyboard for your typing activities.

When you remove the external keyboard, the on-board keyboard continues to function.

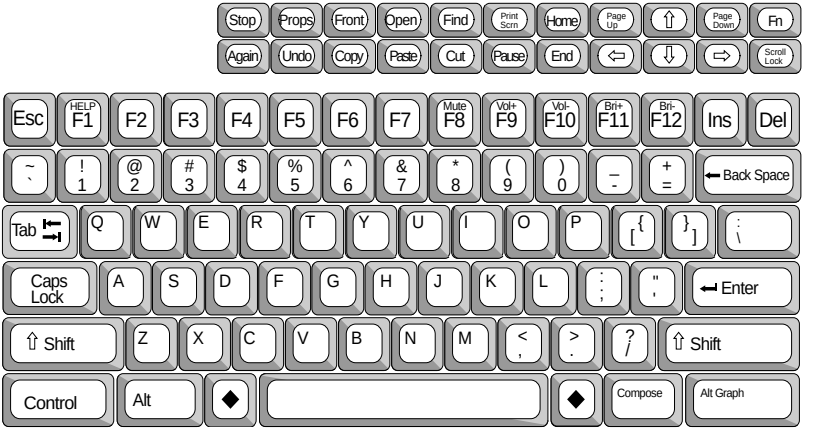


Figure A-2 UltraBookIIi Keyboard Layout

Touchpad

An integrated micro touchpad facilitates mouseless operation. The touchpad is 66 x 50 mm in size, has three buttons, and is pixel-accurate. The touchpad is disabled when an external mouse or an external keyboard with a mouse is connected to the UltraBookIIi.

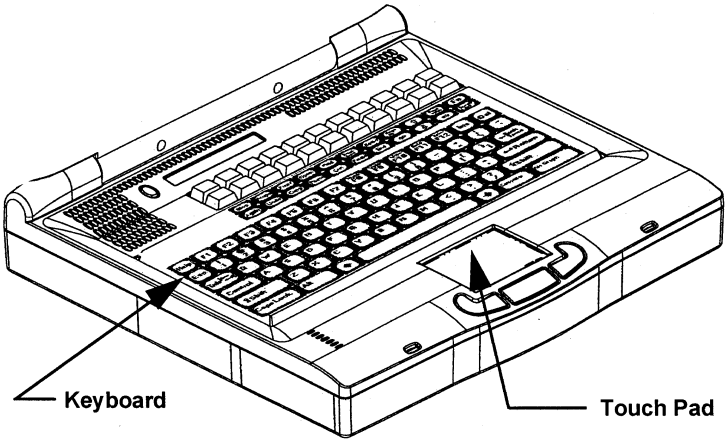


Figure A-3 Keyboard and Pointing Device

External Keyboard or Mouse

The UltraBookIIi provides a round DIN-8 connector to accommodate an external keyboard or mouse as shown in Figure A-9 on page A-25. You can connect an external Sun Type-5 or newer keyboard when the UltraBookIIi is turned on or off.

If you connect an external domestic keyboard to the UltraBookIIi's external keyboard connector, the on-board keyboard is unaffected. You can then use either keyboard for your typing activities. When you remove the external keyboard, the on-board keyboard continues to function.

You can connect an International keyboard to the keyboard connector port. Doing so will disable the internal keyboard.

You can connect an external mouse to the same DIN-8 connector if you are not using an external keyboard. An external mouse or other pointing device will disable the on-board touchpad.

Onboard Audio

The UltraBookIIi provides a variety of onboard audio services and connectors, including:

- Audio and microphone jacks
- Internal speaker

The right-side panel contains audio input and output jacks for connecting an external audio devices, as shown in Figure A-9 and Figure A-4. Audio input and output jacks are standard 1/8” stereo jacks.

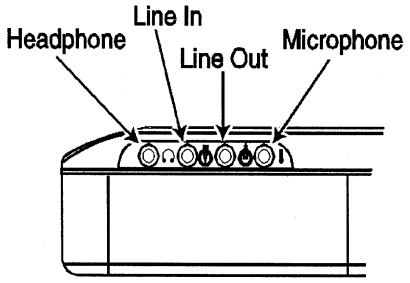


Figure A-4 Onboard Audio

The UltraBookIIi provides the following audio functionality:

- Headphones
- Line In
- Line Out
- Microphone
- Internal speaker

Headphones

The headphones jack allows you to connect stereophonic headphones for private listening of audio output.

Line In

The Line In jack allows you to connect the system to external stereo signals and other audio sources, e.g., compact disk or audio tape players.

Line Out

The Line Out jack allows you to connect the system audio output to external stereophonic devices, e.g., external amplifiers or amplified speakers. The Line Out jack provides 16-bit 48 kHz stereo output signals.

Microphone

The microphone jack allows you to connect an external mono/stereo microphone to the system. The UltraBookIIi accepts a Sun Microphone™ or other Positron™ compatible recording device for recording audio input.

Internal Speaker

The UltraBookIIi includes a built-in audio speaker which reproduces monophonic sound generated by application programs.

External Connections

This section describes the UltraBookIIi's available external connections. For information on external devices, see Input-Output Devices earlier in this guide.

The access ports support a wide variety of input-output options, including:

- Ethernet
- Serial/Parallel
- Ultra/Fast-Wide SCSI
- Video
- DC power

Ethernet

The UltraBookIIi rear panel provides a built-in twisted pair (10-Base T/100-Base T) Ethernet network port as shown in Figure A-8. This industry-standard RJ-45 telephone-type connector allows connection to twisted pair Ethernet networks. A twisted-pair Ethernet cable is similar in appearance to a modular telephone cord.

Serial and Parallel

The UltraBookIIi right side panel provides two serial ports and one enhanced parallel port integrated into a single 50-pin connector on the right side panel. These ports are accessed through the I/O break-out cable supplied with the UltraBookIIi, providing two DB-25-serial connectors and one DB-25 Centronics-compatible parallel connector (shown in Figure A-5). Use these connectors for attaching industry-standard parallel and serial devices.

Each serial port supports asynchronous and synchronous communications at speeds from 300 to 115,000 bps. Each port supports a complete set of EIA RS-232C modem signals, including synchronous transmit and receive clock signals.

The illustration below shows the standard I/O break-out cable connections:

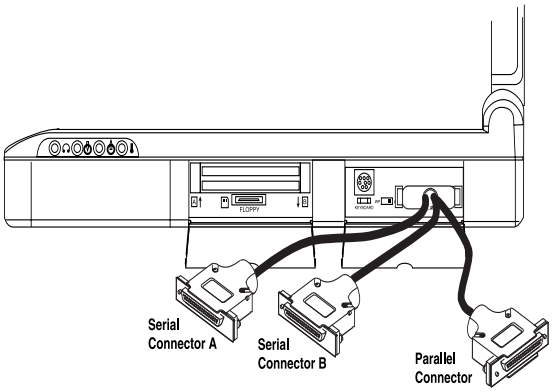


Figure A-5 Break-Out Cable Connections

Ultra/Fast-Wide SCSI

An Ultra/Fast-Wide SCSI interface is provided at the back panel access port (as shown in Figure A-9) for attaching external SCSI devices. This supports connecting external disk drives, CD-ROMs, etc. Transfer rates are 20 MBps for Fast/Wide, 10 MBps for Fast during synchronous operation, and 5 MBps for asynchronous operation.

Follow the manufacturer's instructions carefully when connecting external SCSI devices to the system, especially when setting unique SCSI device addresses and terminating the SCSI bus after the last installed device.

Termination

External devices can have a maximum SCSI bus length of 2 meters and must use active termination installed at the last device on the external bus. The UltraBookIIi provides 5 VDC termpwr for SCSI terminators.

External SCSI Connections

When using external SCSI devices with your UltraBookIIi, you need an active terminator with the appropriate connector.

Video

The UltraBookIIi supports Sun-type or other self-sensing monitors equipped with J13W3 connectors. For more information on external display capabilities, see External Monitor Support in Chapter 2.

DC Power

The UltraBookIIi receives 19 VDC of continuous power at a maximum of 70 watts using the supplied AC adapter. Additionally, the UltraBookIIi may receive 10 VDC nominal from an onboard battery module with a rated capacity of 40 watt hours when not tethered using the AC adapter. For more information on the DC power requirements of the UltraBookIIi, see Battery Technology later in this guide.

Power Supply

The UltraBookIIi gets power from the internal battery module or by connecting the external AC power adapter/charger.

AC Adapter

The adapter operates from 100 – 240 VAC. The adapter is a switcher-type power supply operating at a nominal frequency of 75 kHz. It provides DC power input for running the system. The adapter provides 19 volts DC to the main system. The UltraBookIIi supports full desktop functionality when tethered to the AC adapter. The AC adapter also supports simultaneous workstation usability and battery charging.

Battery charge management follows a constant-current, constant-voltage (CCCV) scheme, with a charge-time cutoff. A maximum absolute temperature shutoff ensures that the maximum charge is provided to the battery, but does not reach temperatures high enough to cause damage or limit lifetime.

Battery Technology

The UltraBookIIi uses a lithium-ion battery module to power the workstation when AC power is not available.

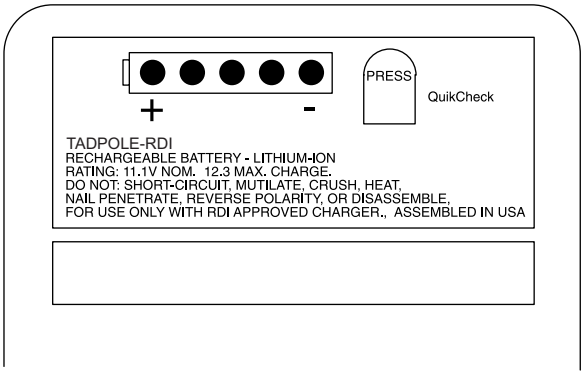


Figure A-6 Lithium-Ion Battery Module

The lithium-ion battery module has a gravimetric power density 100% higher than NiMH or NiCd batteries and suffers no memory effect from the recharge cycle. The battery device bay is located at the front-right side of the workstation below the onboard audio input/output jacks, as shown in Figure A-4.

The 4050 mAH battery module provides approximately one hour of continuous-use battery operation, depending on system configuration. The battery module has nine cells, supplying 10 volts nominal to the internal DC power converter.

The battery module contains a five element LED power gage allowing you to check the charge status of the battery module before installing it in the UltraBookIIi. The power gage displays remaining capacity in increments of 20%.

As battery power decreases, the workstation monitors performance and warns you of low battery power. You should then save your work before the battery charge is exhausted. Battery life updates continue as long as the low-battery condition exists.

During a low-battery condition, switch to AC power or halt the UltraBookIIi and power-down. Continued battery use will eventually lead to an automatic shutdown. For information about halting and powering-down the UltraBookIIi, see “Shutting UltraBookIIi Down,” on page 3-10.

If you switch to AC power instead of shutting down the UltraBookIIi, you can remove and replace battery modules while the system is connected to AC power.

Caution: Follow the proper shut down procedures for the UltraBookIIi described on page 3-10. Otherwise, you may corrupt important system files on your workstation.

Caution: Never use nickel cadmium or nickel metal hydride batteries with the UltraBookIIi or try to recharge such batteries with the AC adapter. Use only the lithium-ion battery module supplied with the UltraBookIIi.

WARNUNG: Ihre UltraBookIIi Workstation wird mit einer aufladbaren Lithium Ionen Batterie geliefert. Versuchen Sie auf keinen Fall, Ihre UltraBookIIi Workstation mit Trockenbatterien (Primärzellen), Nickel Kadmium- oder Nickel Metall Hydrid Akkus zu betreiben oder solche mit dem Netz/ Ladegerät zu laden.

For information on installing the battery module, refer to Chapter 3.

Battery Recharging

You can use the AC adapter to recharge the battery module. The battery module recharges automatically when the battery module is installed and the workstation is connected to its AC adapter. It takes approximately 3 hours to recharge the battery module with the workstation powered off. When powered up, the workstation dynamically calculates the difference between the AC adapter capacity and the power required to operate the workstation. Any remaining capacity is automatically applied to background charging.

Background charging requires 6 – 7 hours to fully recharge the battery module, depending on battery condition and workstation power requirements.

The battery module can be discharged and recharged from 500 to 1,000 times before it needs replacing. When you need to replace the battery module, obtain a replacement battery module from your authorized Tadpole-RDI representative.

The battery charger circuit has two modes of operation, fast and background charge. Fast charge is enabled when the external AC power adapter/charger is connected and the system is powered off. Fast charge provides a full recharge of the batteries within three hours.

For information on installing the battery module, refer to Chapter 3.

Device Bays and Access Port Locations

This section shows you where to connect external devices to the UltraBookIIi and where to install modular components. You can make connections to the UltraBookIIi at the rear and right-side access ports, or through the unit's audio input and output jacks. Open

the rear or right-side access panels as applicable to use the UltraBookIIi's access ports. To install modular components, insert the component in the appropriate device bay or see page A-11 for more information.

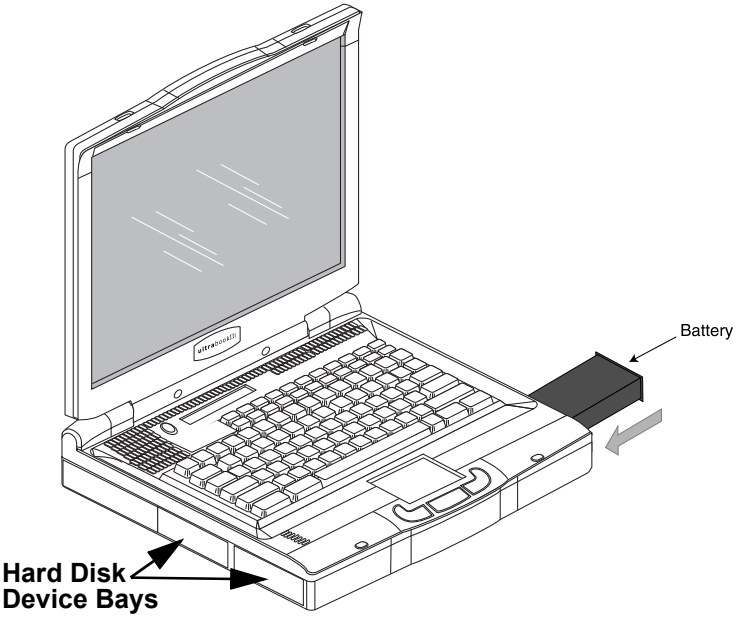


Figure A-7 UltraBookIIi Device Bays

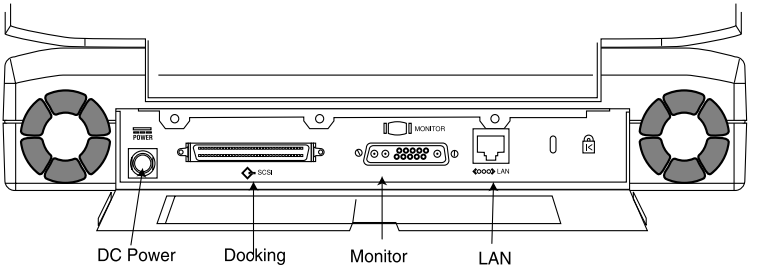


Figure A-8 UltraBookIIi Rear Access Ports

NOTE Appendix B contains a list of the connector pin assignments.

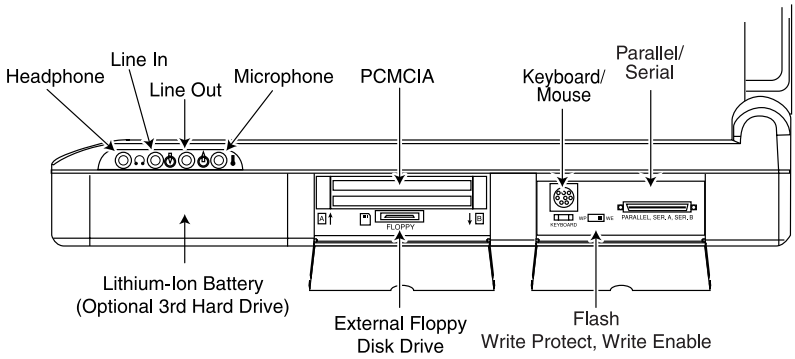


Figure A-9 UltraBookIIi Right-Side Access Ports

Options

The following sections describe the options available for the UltraBookIIi workstations.

Languages

Standard C, C++, FORTRAN, ADA, and a wide selection of other languages are available from SunPro or third parties for use on the UltraBookIIi.

Sources

UltraBookIIi replacement parts and options are available from your authorized UltraBookIIi dealer. Contact your local dealer or Tadpole-RDI for a listing of the dealers in your area.

The following items are available from your UltraBookIIi representative:

- AC adapter
- Rechargeable battery pack

- 56K fax/modem PCMCIA card
- Portable CD
- Portable floppy drive
- Nylon carrying case
- Solaris 7, 2.6, 2.5.1 operating systems
- Hard carrying case
- User-installable hard disk modules
- Sun Creator 3D display adapters
- User-installable memory modules
- Three-button mouse
- Additional manuals

The following items are available from Sun Microsystems dealers:

- Solaris operating systems on CD-ROM
- Three-button mouse
- High-performance color, monochrome, and grayscale video monitors
- Video monitor cables
- Laser printers
- Serial port cables
- Answer Book CDs

The following items are available from third-party suppliers:

- Ethernet transceiver cables
- Three-button mouse
- High-performance color, monochrome, and grayscale video monitors
- Video monitor cables

- External SCSI devices (hard disk drives, CD-ROMs, cartridge tape drives, etc.)
- Laser printers
- External modems
- Serial port cables
- Audio input/output devices (amplifiers, microphones, etc.)
- PCMCIA cards (modems, flash memory, disk drives, etc.)

Notes

B UltraBookIIi Specifications

Operating system	Solaris 7, 2.6, 2.5.1. CDE OpenWindows version 3.x
Network support	AutoNET, software tools, plus NTP, NIS+, DHCP, NFS, DNS
Java tools	Java virtual machine, HotJava browser
IU processor	400 MHz UltraSPARC-IIi
FPU processor	Combined
Performance	**400 MHz** 17.9 SPECint95 20.6 SPECfp95
Memory	256 MB to 1 GB DRAM with ECC Memory expansion using daughter boards (user installable)
Cache	2 MB secondary cache 16 KB data and 16 KB instruction on CPU chip
Media	**External floppy drive (Optional):** 3.5 inch 720 KB or 1.44 MB capacity auto-sensing

	Hard Disk Drive: EIDE (ATA2) 8 GB formatted 12 ms average seek time Optional 2- or 3-drive configuration
	PCMCIA: One or two Type I and/or Type II, One Type III
Display	**14.1 in** XGA 1024 x 768 active matrix LCD
Palette	
Colors	262,144
Grayscale	64
Pixel aspect ratio	1:1
Screen aspect ratio	4:3
Dot pitch	.28mm
Dots per inch	90.7
Display height	8.36in (214 mm)
Display width	11.14 in (286 mm)
Display diagonal	14.1 in (358 mm)
Keyboard	97 full-travel keys Sun-5 compatible keyboard
Touchpad	Three-button integrated

I/O ports	Ethernet (10/100 Mbps) twisted pair standard (10 Base T/ 100 Base T) port
	Ultra/Fast-Wide SCSI interface: 68-pin
	Two RS-232C serial ports
	Centronics-compatible parallel port
	One 16-bit audio port (48 kHz)
	Internal speaker
	Microphone
	External video: Sun J13W3 port
	Keyboard/mouse: 8-pin, mini-DIN connector Sun type
Controls	Power on/off switch
	Display brightness (FN Bri+/ Bri- keyboard function keys)
Other features	Time-of-day clock with separate battery backup and wake-up alarm
	Nylon carrying case
	Simultaneous display capabilities when connecting UltraBook 1024 x 768 model to XGA resolution external monitor
System Dimensions	
Height	2.3 inches (58 mm)
Width	12.84 inches (326 mm)
Length	11.66 inches (296 mm)
Volume	0.18 cu. ft. (0.05 cu. m)
Weight	7.5 pounds (3.4 kg) without battery
Battery weight	1 pound

Environmental Altitude	0 to 10,000 ft. (0 to 3048 m)
Operating temperature	+40 to +104 degrees F (4.5 to + 46 degrees C) Temperature sensitive fan speed
Storage temperature	- 4 to +140 degrees F (-20 to + 60 degrees C)
Battery/power supply	Lithium-Ion battery, 10 V nominal, 4 Amp-hour capacity
Discharge time	Approximately 1 hour in continuous use
Recharge time	3 hours charging only with system power off
Background recharge time	6-7 hours with system power on Varies due to operating power draw
UltraBookIIi AC adapter/charger	Automatic voltage and frequency sensing
Voltage	100-240 VAC
Frequency	50-60 Hz
Power supply	70 W continuous
DC output	19VDC@3.68A
Length	5.24 in (133.10 mm)
Width	2.28 in (57.10 mm)
Height	1.15 in (29.21 mm)
Weight	9.3 oz (0.263 kg)
AC cord	Two wire, UL/CSA approved IEC 320/c8 connector, 6 ft (1.8 m)
DC cord	SPT1 type cable with right angle, 3 ft (.9m)

Safety	UL 1950, IEC 950, CE,CSA C22.2 No. 950
EMC	ITE-FCC Part 15 (Class B) Class B, CE (EN55022) Class B, (EN 50081-1, EN50082-1, IEC801-2, IEC801-3, IEC 801-4)
Options	Expansion memory daughter boards
	Internal disk drive upgrades
	Nylon carrying case
	Extra battery pack
	Hard carrying case
	Extra manual set
	Floppy disk drive
	CD
	FAX/MODEM

Notes

C Connector Pin Assignments

This appendix describes the pin assignments for the UltraBookIIi connectors listed in the table below. The connectors are listed in the order they appear on the UltraBookIIi, beginning with the front-most access port on the right side of the unit.

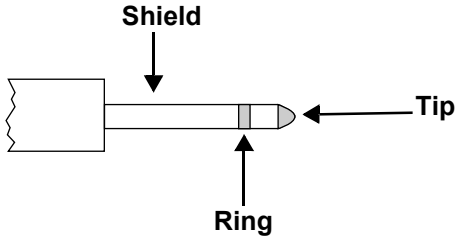
Caution: Only external floppy drive options supplied by Tadpole-RDI should be used with this connector. Use of other external devices with this connector may cause equipment damage and void your warranty.

Headphones Connector

The Headphones connector is a standard female, 1/8” audio miniature jack. The following table lists the pin assignments for this connector. For illustration purposes, Figure C-1 shows the 1/8” male connector.

Pin	Signal
Tip	LEFT CHANNEL
Ring	RIGHT CHANNEL
Shield	GND

Figure C-1 Headphones Mating Connector

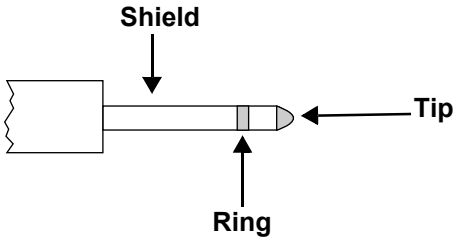


Audio Line In Connector

The Audio In Connector is a standard female, 1/8”, audio miniature jack. The following table lists the pin assignments for this connector. For illustration purposes, Figure C-2 shows the 1/8” male connector.

Pin	Signal
Tip	LEFT CHANNEL
Ring	RIGHT CHANNEL
Shield	GND

Figure C-2 Audio Line In Mating Connector

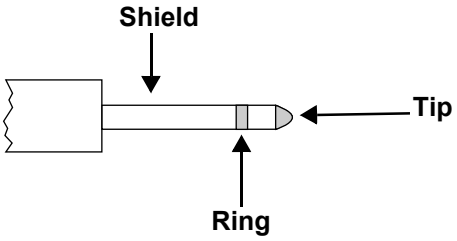


Audio Line Out Connector

The Audio Line Out Connector is a standard female, 1/8", audio miniature jack. The following table lists the pin assignments for this connector. For illustration purposes, Figure C-3 shows the 1/8" male connector.

Pin	Signal
Tip	LEFT CHANNEL
Ring	RIGHT CHANNEL
Shield	GND

Figure C-3 Audio Line Out Mating Connector

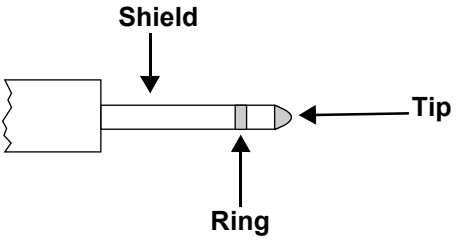


Microphone Connector

The Microphone Connector is a standard female, 1/8”, audio miniature jack. The following table lists the pin assignments for this connector. For illustration purposes, Figure C-4 shows the 1/8” male connector.

Pin	Signal
Tip	LEFT CHANNEL
Ring	RIGHT CHANNEL
Shield	GND

Figure C-4 Microphone Mating Connector

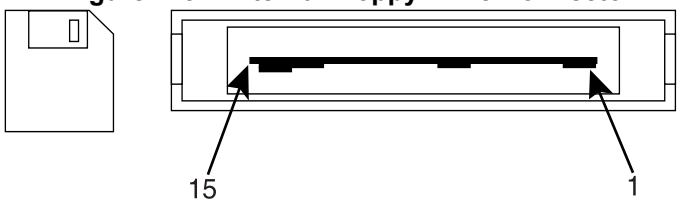


External Floppy Drive Connector

The Floppy Drive Connector is a male, 15-pin, single-row, polarized connector. The following table lists the pin assignments for this connector. Figure C-5 shows this connector.

Pin	Signal
1	FD_HD_SEL_L
2	FD_RD_DAT_L
3	GND
4	FD_WR_PROT_L
5	GND
6	FD_TRK0_L
7	FD_WR_GATE_L
8	FD_WR_DAT_L
9	FD_STEP_L
10	FD_DIR_L
11	FD_DSK_CHNG_L
12	+5V
13	+5V
14	FD_DRV0_SEL_L
15	FD_INDEX_L

Figure C-5 External Floppy Drive Connector

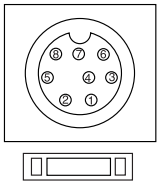


Keyboard/Mouse Connector

The Keyboard/Mouse Connector is a female, 8-pin miniature (DIN-8) connector. The following table lists the pin assignments for this connector. Figure C-6 shows this connector.

Pin	Signal
1	GND
2	GND
3	+5V
4	Mouse Data
5	Keyboard Data Out
6	Keyboard Data In
7	PowerOn_L
8	+5V

Figure C-6 Keyboard/Mouse Connector



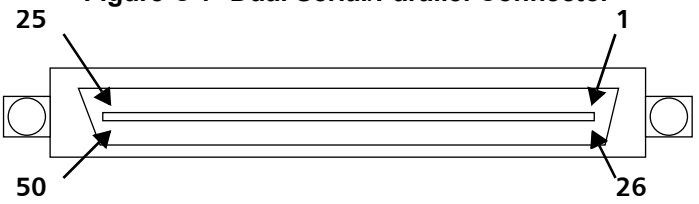
Dual Serial/Parallel Connector

The Dual Serial/Parallel Connector on the UltraBookIIi back panel is a female, 50-pin double-row polarized connector. The following table lists the pin assignments and Figure C-7 shows this connector.

Pin	Signal	Pin	Signal
1	PAR_DS_L	23	SER_DIR_B
2	PP_DAT0	24	SER_DCD_B
3	PP_DAT1	25	SER_TXC_B
4	PP_DAT2	26	PAR_AFXN_L
5	PP_DAT3	27	PAR_ERROR_L
6	PP_DAT4	28	PAR_INIT_L
7	PP_DAT5	29	PAR_SLIN_L
8	PP_DAT6	30-37	GND
9	PP_DAT7	38	SHIELD
10	PAR_ACK_L	39	GND
11	PAR_BUSY	40	SER_TXD_A
12	PAR_PE	41	SER_RXD_A
13	PAR_SELECT_L	42	SER_RTS_A
14	GND	43	SER_CTS_A
15	SER_TRXC_A	44	SER_SYNC_A
16	SER_RXC_A	45	GND
17	SER_DIR_A	46	SER_TXD_B
18	SER_DCD_A	47	SER_RXD_B
19	SER_TXC_A	48	SER_RTS_B
20	GND	49	SER_CTS_B

Pin	Signal	Pin	Signal
21	SER_TRXC_B	50	SER_SYNC_B
22	SER_RXC_B		

Figure C-7 Dual Serial/Parallel Connector

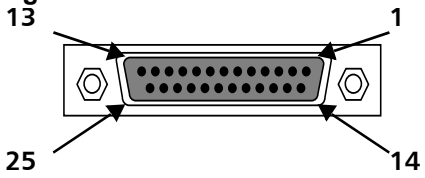


Serial Port-A Connector

The Serial Port-A Connector on the I/O break-out cable is a female, 25-pin (DB25) connector. The following table lists the pin assignments for this connector. Figure C-8 shows this connector.

Pin	Signal	Pin	Signal
1	NC	14	NC
2	SERIAL_TXD_A	15	SERIAL_TRXC_A
3	SERIAL_RXD_A	16	NC
4	SERIAL_RTS_A	17	SERIAL_RXV_A
5	SERIAL_CTS_A	18	NC
6	SERIAL_DSR_A	19	NC
7	GND	20	SERIAL_DTR_A
8	SERIAL_DCD_A	21	NC
9	NC	22	NC
10	NC	23	NC
11	NC	24	SERIAL_TXC_A
12	NC	25	NC
13	NC		

Figure C-8 Serial Port-A Connector

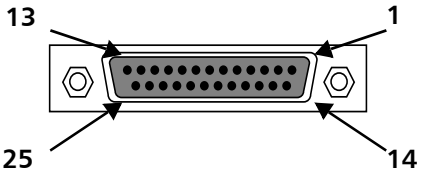


Serial Port-B Connector

The Serial Port-B Connector on the I/O break-out cable is a female, 25-pin (DB25) connector. The following table lists the pin assignments for this connector. Figure C-9 shows this connector.

Pin	Signal	Pin	Signal
1	NC	14	NC
2	SERIAL_TXD_B	15	SERIAL_TRXC_B
3	SERIAL_RXD_B	16	NC
4	SERIAL_RTS_B	17	SERIAL_RXV_B
5	SERIAL_CTS_B	18	NC
6	SERIAL_DSR_B	19	NC
7	GND	20	SERIAL_DTR_B
8	SERIAL_DCD_B	21	NC
9	NC	22	NC
10	NC	23	NC
11	NC	24	SERIAL_TXC_B
12	NC	25	NC
13	NC		

Figure C-9 Serial Port-B Connector

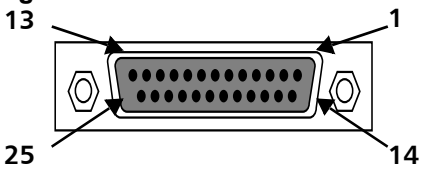


Parallel Port Connector

The Parallel Port Connector on the I/O break-out cable is a female, 25-pin (DB25) connector. The following table lists the pin assignments for this connector. Figure C-10 shows this connector.

Pin	Signal	Pin	Signal
1	P_DATA-STROBE-L	10	P_ACKNOWLEDGE_L
2	P_DATA_<0>	11	P_BUSY
3	P_DATA<1>	12	P_PE
4	P_DATA<2>	13	P_SLCT
5	P_DATA<3>	14	P_AUTO_FEED_L
6	P_DATA<4>	15	P_ERROR_L
7	P_DATA<5>	16	P_INIT_L
8	P_DATA<6>	17	P_SELECT_IN_L
9	P_DATA<7>	18-25	GND

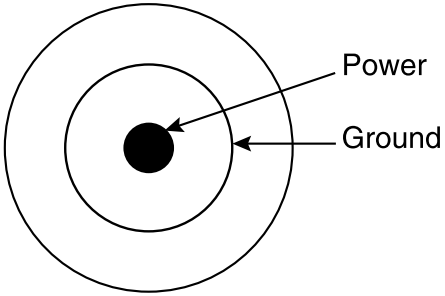
Figure C-10 Parallel Port Connector



DC Input Connector

The DC Input Connector provides DC power to the unit. Figure C-11 shows this connector.

Figure C-11 DC Input Connector

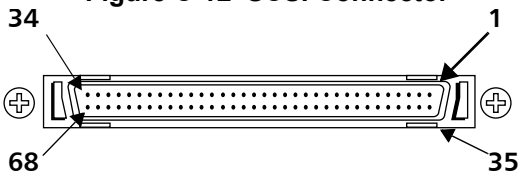


SCSI Connector

The UltraBookIIi SCSI Connector is a female, 68-pin double-row polarized SCSI connector. The following table lists the pin assignments for this connector. Figure C-12 shows this connector.

Pin	Signal	Pin	Signal
1-16,	GND	51	TERM_PWR
17, 18	TERM_PWR	52	TERM_PWR
20-34	GND	53	NC
35	SCSI_DAT_L<12>	54	GND
36	SCSI_DAT_L<13>	55	SCSI_ATN_L
37	SCSI_DAT_L<14>	56	GND
38	SCSI_DAT_L<15>	57	SCSI_BSY_L
39	SCSI_PAR_L_<1>	58	SCSI_ACK_L
40	SCSI_DAT_L<0>	59	SCSI_RST_L
41	SCSI_DAT_L<1>	60	SCSI_MSG_L
42	SCSI_DAT_L<2>	61	SCSI_SEL_L
43	SCSI_DAT_L<3>	62	SCSI_CD_L
44	SCSI_DAT_L<4>	63	SCSI_REQ_L
45	SCSI_DAT_L<5>	64	SCSI_IO_L
46	SCSI_DAT_L<6>	65	SCSI_DAT_L<8>
47	SCSI_DAT_L<7>	66	SCSI_DAT_L<9>
48	SCSI_PAR_L<0>	67	SCSI_DAT_L<10>
49	GND	68	SCSI_DAT_L<11>
50	GND		

Figure C-12 SCSI Connector

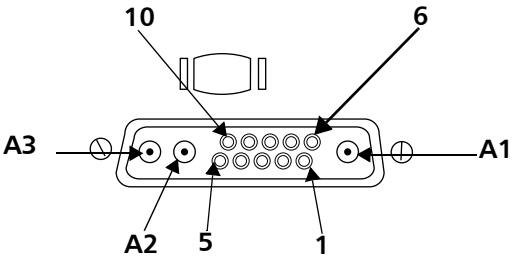


External Monitor Connector

The External Monitor Connector is a female, 13-pin J13W3 connector. The following table lists the pin assignments for this connector. Figure C-13 shows this connector.

Pin	Signal	Pin	Signal
1	VIDEO_GND	8	MONITOR_ID<1>
2	VSYNC	9	MONITOR_ID<2>
3	MONITOR_ID<0>	10	VIDEO_GND
4	VIDEO_GND	A1	RED
5	CSYNC_L	A2	GREEN/MONO
6	HSYNC	A3	BLUE
7	VIDEO_GND		

Figure C-13 External Monitor Connector

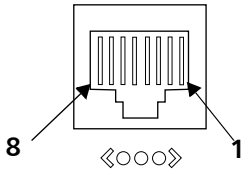


Ethernet Twisted-Pair Connector

The Ethernet Twisted-Pair Connector is a female, 8-pin miniature RJ-45 telephone jack. The following table lists the pin assignments for this connector. Figure C-14 shows this connector.

Pin	Signal
1	TXD+
2	TXD–
3	TXD– RXD+
4	TXD_COM
5	TXD_COM
6	RXD–
7	RXD_COM
8	RXD_COM

Figure C-14 Ethernet Twisted-Pair Connector



D NVRAM Settings

The following table lists the UltraBookIIi NVRAM settings. When you receive your UltraBookIIi, the factory-preset values are configured to their default settings using the “set-defaults” command.

Parameter	Values	Default Value
ati-pgx24?	true	true
ide-timeon	60	60
psm-min-batt	20	20
tpe-link-test?	true	true
scsi-initiator-id	7	7
keyboard-click?	false	false
keymap		
ttyb-rts-dtr-off	false	false
ttyb-ignore-cd	true	true
ttya-rts-dtr-off	false	false
ttya-ignore-cd	true	true
ttyb-mode	9600, 8, n, 1, -	9600, 8, n, 1, -
ttya-mode	9600, 8, n, 1, -	9600, 8, n, 1, -
pcia-probe-list	1, 2 , 3	1, 2, 3
pcib-probe-list	1, 2, 4, 3	1, 2, 4, 3
mfg-mode	off	off
diag-level	min	min
#power-cycles	2288013833	
system-board-serial#	f8 f7 75 f1 7f 7f 55 fb . . .	
system-board-date	df 75 f7 fb fd f5 da df . . .	
fcode-debug?	false	false
output-device	screen	screen
input-device	keyboard	keyboard
sboot-device	6	6
scsi-options	2046	2046
load-base	16384	16384
boot-command	boot	boot
auto-boot?	true	true

Parameter	Values	Default Value
watchdog-reboot?	false	false
diag-file		
diag-device	net	net
boot-file		
boot-device	disk	disk
local-mac-address?	false	false
ansi-terminal?	true	true
screen-#columns	80	80
screen-#rows	34	34
silent-mode?	false	false
use-nvramrc?	false	false
nvramrc		
security-mode	none	
security-password		
security-#badlogins	4290212323	
oem-logo		
oem-logo?	false	false
oem-banner		
oem-banner?	false	false
hardware-revision	92 86	
last-hardware-update	80 a2 a0 88 82 22 a8 86 . . .	
diag-switch?	false	false

E External Monitor Matrix

This model can be purchased with two different video controllers. They are:

- UltraBookIIi ATI Display
- UltraBookIIi Creator 3D Display

Depending on the controller chosen, unique configuration settings are required. Ensure that your external monitor (if applicable) is capable of operating within the following parameters.

UltraBookIIi ATI Display Controller

The ATI video controller supports 24 bpp (16 million color, external only) through the OBP command “ati-pgx24?”. This command is “true” in the NVRAM settings. Only 1024 x 768, 800 x 600, and 1152 x 900 pixel resolutions are supported with this function.

The UltraBookIIi is delivered with a 1024 x 768 pixel resolution 14.1 inch Liquid Crystal Display (LCD). It also has the option to drive the external monitors. In some combinations, the UltraBookIIi can drive both the LCD and an external monitor simultaneously. This list charts the various combinations and the OBP commands to activate them.

Modes for ATI-PGX24?=true

Command (OBP/ CDE/Openwin)	LCD Resolution	External Monitor
800-mon *	NOT SUPPORTED	800x600 60Hz
800-vesa *	NOT SUPPORTED	800x600 60Hz
1024-mon *	OFF	1024x768 60Hz
1024-vesa *	OFF	1024x768 60Hz
1152-mon	NOT SUPPORTED	1152x900 66Hz
1152-vesa	NOT SUPPORTED	1152x900 66Hz
lcd-only	1024x768 60Hz	OFF
lcd+monitor	1024x768 60Hz	1024x768 60Hz
lcd+vesa	1024x768 60Hz	1024x768 60Hz
lcd-off	OFF	NO CHANGE
lcd-on **	ENABLED AT CURRENT RESOLUTION	NO CHANGE
monitor-off	NO CHANGE	OFF
monitor-on	NO CHANGE	ENABLED AT CURRENT RESOLUTION
csync-on	OFF	COMPOSITE SYNC ENABLED
csync-off	OFF	COMPOSITE SYNC DISABLED

* = NOT SUPPORTED BY WINDOW MANAGER DISPLAY CONTROL
** = SHOULD BE USED WHEN EXTERNAL MONITOR IS SET TO 1024x768 60Hz

Modes for ATI-PGX24?=false

Command (OBP/ CDE/Openwin)	LCD Resolution	External Monitor
800-mon *	NOT SUPPORTED	800x600 60Hz
800-vesa *	NOT SUPPORTED	800x600 60Hz
1024-mon *	OFF	1024x768 60Hz
1024-vesa *	OFF	1024x768 60Hz
1152-mon	NOT SUPPORTED	1152x900 66Hz
1152-vesa	NOT SUPPORTED	1152x900 66Hz
1280-mon	NOT SUPPORTED	1280x1024 67Hz
1280-vesa	NOT SUPPORTED	1280x1024 67Hz
1280-fastmon	NOT SUPPORTED	1280x1024 76Hz
1280-fastvesa	NOT SUPPORTED	1280x1024 76Hz
lcd-only	1024x768 60Hz	OFF
lcd+monitor	1024x768 60Hz	1024x768 60Hz
lcd+vesa	1024x768 60Hz	1024x768 60Hz
lcd-off	OFF	NO CHANGE
lcd-on	ENABLED AT CURRENT RESOLUTION	NO CHANGE
monitor-off	NO CHANGE	OFF
monitor-on	NO CHANGE	ENABLED AT CURRENT RESOLUTION
csync-on	OFF	COMPOSITE SYNC ENABLED
csync-off	OFF	COMPOSITE SYNC DISABLED

* = NOT SUPPORTED BY WINDOW MANAGER DISPLAY CONTROL

The UltraBookIIi supports simultaneous on-board and external video device display using VESA standard 1024 x 768 x 60 Hz mode and timing.

Changing Resolutions

Changing the display resolution is best done during the boot sequence, either during start-up or rebooting specifically to change the resolution.

1. To enter the command string, press “Stop” and “A” together during the boot sequence, right after the memory test and before the hard disk begins accessing.

   The workstation will then be in “Open Boot PROM” (OBP) mode.

You can now execute OBP commands. Enter the command for the desired resolution corresponding to the type of display you have.

2. After entering the command string, type **go** or **boot**, depending on any messages given at the command line.

3. Press **Enter** to resume using the Ultra-BookIIi.

UltraBookIIi Creator 3D Display and Resolution Control

The UltraBookIIi with Creator 3D Graphics option supports a 14.1" 1024x768 LCD as well as an external 13W3 connector for driving CRT monitors and projection display devices. Simultaneous output to the LCD and external port are supported at 1024x768 60 Hz only. The LCD and external port configuration can be determined using one of the following ways:

- Configuring the port automatically at system power up (see “Configuring the Display Automatically,” on page E-5)

- Using boot PROM commands (see "Configuring the Display Using Boot PROM Commands," on page E-6)
- Using Window manager utilities (see "Configuring the Display Using Window Manager Utilities," on page E-7)

Configuring the Display Automatically

The UltraBookIIi system automatically configures the LCD and external video port when powered up based on the type of external device that you connected. These devices fall into two broad categories:

- Devices that provide SUN-compatible sense information
- Devices that provide no sense information to the system

In general, SUN-compatible display devices such as CRT monitors provide sense information and PC monitors and most projection display devices do not. During power-on initialization, the system probes the 13W3 connector to determine if sense information is being provided by the externally connected device. Based on this information, the system display and external port will be configured accordingly. The following table describes the action of the system:

External Display Device	LCD Resolution	External Display Resolution
None	1024x768 60 Hz	1024x768 60 Hz
SUN device, sense=0	OFF	1024x768 77 Hz
SUN device, sense=1	OFF	1152x900 66 Hz
SUN device, sense=2	OFF	1920x1080 72 Hz
SUN device, sense=3	OFF	1152x900 66 Hz
SUN device, sense=4	OFF	1280x1024 76 Hz
SUN device, sense=5	OFF	1152x900 66 Hz
SUN device, sense=6	OFF	1152x900 76 Hz

External Display Device	LCD Resolution	External Display Resolution
SUN device, sense=7	OFF	1152x900 66 Hz
SUN device, sense=8	OFF	1024x768 77 Hz
SUN device, sense=9	OFF	1152x900 66 Hz
SUN device, sense=10	OFF	1280x1024 76 Hz
SUN device, sense=11	OFF	1152x900 66 Hz
SUN device, sense=12	OFF	1280x768 67 Hz
SUN device, sense=13	OFF	1152x900 66 Hz
SUN device, sense=14	1024x768 60 Hz	1024x768 60 Hz

If you connect a non-SUN device to the UltraBookIIi at power up, the results of the automatic configuration are undefined. For non-Sun devices, leave the external device and 13W3 adapter disconnected from the system and follow the steps for manual configuration in the next section.

Configuring the Display Using Boot PROM Commands

In many cases, you must configure the LCD display and external port manually, such as if you connected a non-SUN compatible display device to the UltraBookIIi (i.e. device does not supply sense information).

To change the configuration:

1. Disconnect the external device and 13W3-VGA adapter from the UltraBookIIi.

2. Power on the system according to the instructions in Chapter 3.

3. Stop the boot sequence by entering **stop-A** after the LCD display illuminates.

4. Disable the automatic boot feature by typing **setenv auto-boot? false** at the OK prompt.

5. Reinitialize by typing **reset** at the OK prompt. The system will reinitialize and stop at the OK prompt.

6. Reconnect the external device and 13W3 adapter to the UltraBookIIi.

7. Select the appropriate command from the the OBP command tables for ATI (pages E-2 and E-3) or C3D (page E-8) and enter it at the OK prompt.

8. Boot UNIX by typing **boot** at the OK prompt.

Take particular note of the **csync-on** and **csync-off** commands. The UltraBookIIi external video interface can provide video sync information in discrete or composite form. In general, SUN-compatible display devices require composite sync information, and non-SUN compatible display devices require discrete horizontal and vertical sync information. Use these commands to configure the interface appropriately.

Configuring the Display Using Window Manager Utilities

You do not necessarily need to type the commands in from the boot prompt. You can access similar commands using menus in the CDE and OpenWindows window managers.

The current window manager session will be halted when you change the display resolution. Any applications that are open prior to the change are terminated. You must login again to start up a window manager session at the new resolution.

To configure the display, use one of the following procedures:

From CDE:

1. Right-click the CDE background to open the workspace menu.
2. Select **Display Control.**
3. Select the appropriate display control command.

From OpenWindows:

1. Right-click the OpenWindows background to open the workspace menu.
2. Select **Utilities|Display Resolution Controls**.
3. Select the appropriate display control command.

Changing Display Resolution

In some combinations, the UltraBookIIi can drive both the LCD and an external monitor simultaneously. This list charts the various combinations and the OBP commands to activate them.

Modes for C3D (Creator 3D)

Command (OBP/ CDE/Openwin)	LCD Resolution	External Monitor
640-mon *	NOT SUPPORTED	640x480 60Hz
640-vesa *	NOT SUPPORTED	640x480 60HZ
800-mon *	NOT SUPPORTED	800x600 60Hz
800-fastmon *	NOT SUPPORTED	800x600 60Hz
960-mon *	NOT SUPPORTED	960x680 108Hz
960-vesa *	NOT SUPPORTED	960x680 108Hz
960-stereo *	NOT SUPPORTED	960x680 112Hz
960-stereovesa *	NOT SUPPORTED	960x680 112Hz
1024-mon *	OFF	1024x768 60Hz
1024-vesa *	OFF	1024x768 60Hz
1024-fastmon *	OFF	1024x768 60Hz

Modes for C3D (Creator 3D)

Command (OBP/ CDE/Openwin)	LCD Resolution	External Monitor
1024-fastvesa *	OFF	1024x768 60Hz
1152-mon	NOT SUPPORTED	1152x900 66Hz
1152-vesa	NOT SUPPORTED	1152x900 66Hz
1152-fastmon *	NOT SUPPORTED	1152x900 66Hz
1152-fastvesa *	NOT SUPPORTED	1152x900 66Hz
1280-mon	NOT SUPPORTED	1280x1024 67Hz
1280-vesa	NOT SUPPORTED	1280x1024 67Hz
1280-fastmon	NOT SUPPORTED	1280x1024 76Hz
1280-fastvesa	NOT SUPPORTED	1280x1024 76Hz
1600-mon *	NOT SUPPORTED	1600x1280 76Hz
1920-mon *	NOT SUPPORTED	1920x1080 72Hz
lcd-only	1024x768 60Hz	OFF
lcd+monitor	1024x768 60Hz	1024x768 60Hz
lcd+vesa	1024x768 60Hz	1024x768 60Hz
lcd-off	OFF	NO CHANGE
lcd-on **	ENABLED AT CURRENT RESOLUTION	NO CHANGE
monitor-off	NO CHANGE	OFF
monitor-on	NO CHANGE	ENABLED AT CURRENT RESOLUTION
csync-on	OFF	COMPOSITE SYNC ENABLED
csync-off	OFF	COMPOSITE SYNC DISABLED

* = NOT SUPPORTED BY WINDOW MANAGER DISPLAY CONTROL
** = SHOULD BE USED WHEN EXTERNAL MONITOR IS SET TO 1024x768 60Hz

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