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**DECLARATION OF CONFORMITY**  
according to FCC Part 15

Responsible Party Name: Fujitsu PC Corporation

Address: 598 Gibraltar Drive  
Milpitas, CA 95035

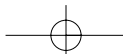
Telephone: (408) 935-8800

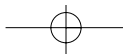
Declares that product: Model: LifeBook E330.  
LifeBook E335.  
LifeBook E340.  
LifeBook E350.

Complies with Part 15  
of the FCC Rules.

This device complies with Part 15 of the FCC rules. Operations is subject to the following two conditions: (1) This device must not be allowed to cause harmful interference, (2) This device must accept any interference received, including interference that may cause undesired operation.

|           |         |        |
|-----------|---------|--------|
| David Woo | Fujitsu | 9/4/98 |
| FULL NAME | COMPANY | DATE   |





 **CAUTION**

Changes or modification not expressly approved by Fujitsu PC Corporation could void this user's authority to operate the equipment.

**FCC NOTICES**

**Notice to Users of Radios and Television**

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

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

Shielded interconnect cables must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device.

**Notice to Users of the US Telephone Network**

The LifeBook™ E Series notebook computers may be supplied with an internal modem which complies with Part 68 of the FCC rules. On this notebook is a label that contains the FCC Registration Number and the Ringer Equivalence Number (REN) for this equipment among other information. If requested, the user must provide their telephone company with the following information:

1. The telephone number to which the notebook is connected.
2. The Ringer Equivalence Number (REN) for this equipment.
3. That the equipment requires a standard modular jack type USOC RJ-11C which is FCC Part 68 compliant.
4. The FCC Registration Number.

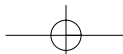
This equipment is designed to be connected to the telephone network or premises wiring using a standard modular jack type USOC RJ-11C which is FCC Part 68 compliant and a line cord between the modem and the telephone network with a minimum of 26AWG.

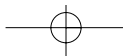
The REN is used to determine the number of devices that you may connect to your telephone line and still have all of those devices ring when your number is called. Too many devices on one line may result in failure to ring in response to an incoming call. In most, but not all, areas the sum of the RENs of all of the devices should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the RENs, contact your local telephone company.

If this equipment causes harm to the telephone network, your telephone company may discontinue your service temporarily. If possible, they will notify you in advance. If advance notice is not practical they will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC.

This fax modem also complies with fax branding requirements per FCC Part 68.

Your telephone company will probably ask you to disconnect this equipment from the telephone network until the problem is corrected and you are sure that the equipment is not malfunctioning. This equipment may not be used on coin service telephones provided by your telephone company. Connection to party lines is subject to state tariffs. Contact your state's public utility commission, public service commission or corporation commission for more information.





This equipment includes automatic dialing capability. When programming and/or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in off-peak hours, such as early morning or late evening.

FCC rules prohibit the use of non-hearing aid compatible telephones in the following locations or applications:

- All public or semipublic coin-operated or credit card telephones.
- Elevators, highways, tunnels (automobile, subway, railroad or pedestrian) where a person with impaired hearing might be isolated in an emergency.
- Places where telephones are specifically installed to alert emergency authorities such as fire, police or medical assistance personnel.
- Hospital rooms, residential health care facilities, convalescent homes and prisons.
- Workstations for the hearing impaired.
- Hotel, motel or apartment lobbies.
- Stores where telephones are used by patrons to order merchandise.

- Public transportation terminals where telephones are used to call taxis or to reserve lodging or rental cars.
- In hotel and motel rooms as at least ten percent of the rooms must contain hearing aid compatible telephones or jacks for plug-in hearing aid compatible telephones which will be provided to hearing impaired customers on request.

## DOC (INDUSTRY CANADA) NOTICES

### Notice to Users of Radios and Television

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

CET appareil numérique de la class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

### Notice to Users of the Canadian Telephone Network

The Canadian Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

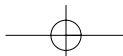
The LifeBook E Series notebook computers are supplied with an internal modem which complies with the Industry Canada certification standards for telecommunication network protection and safety requirements. Before connecting this equipment to a telephone line the user should ensure that it is permissible to connect this equipment to the local telecommunication facilities. The user should be aware that compliance with the certification standards does not prevent service degradation in some situations.

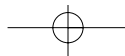
Repairs to telecommunication equipment should be made by a Canadian authorized maintenance facility. Any repairs or alterations not expressly approved by Fujitsu™ PC Corporation or any equipment failures may give the telecommunication company cause to request the user to disconnect the equipment from the telephone line.

The connecting arrangement code for this equipment is CA11A.

The Load Number is 0.4.

The Load Number assigned to each telephone terminal device denotes the percentage of the total load to be connected to a telephone loop or circuit which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices such that the total of the load numbers of all devices does not exceed 100.





 **CAUTION**

For safety, users should ensure that the electrical ground of the power utility, the telephone lines and the metallic water pipes are connected together. Users should NOT attempt to make such connections themselves but should contact the appropriate electric inspection authority or electrician. This may be particularly important in rural areas.

**Avis Aux Utilisateurs Du Réseau  
Téléphonique Canadien**

L'étiquette canadienne Industrie Canada identifie l'équipement certifié. Cette certification signifie que l'équipement satisfait certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le département ne garantit pas le fonctionnement de l'équipement à la satisfaction de l'utilisateur.

La série LifeBook™ E possède un modem interne conforme aux normes de certification d'Industrie Canada pour protéger les réseaux de télécommunications et satisfaire aux normes de sécurité. Avant de connecter cet équipement à une ligne téléphonique, l'utilisateur doit vérifier s'il est permis de connecter cet équipement aux installations de télécommunications locales. L'utilisateur est averti que même la conformité aux normes de certification ne peut dans certains cas empêcher la dégradation du service.

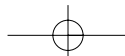
Les réparations de l'équipement de télécommunications doivent être effectuées par un service de maintenance agréé au Canada. Toute réparation ou modification, qui n'est pas expressément approuvée par Fujitsu PC Corp.,

ou toute défaillance de l'équipement peut entraîner la compagnie de télécommunications à exiger que l'utilisateur déconnecte l'équipement de la ligne téléphonique.

Le code d'arrangement de connexion de cet équipement est CA11A.

Le numéro de charge est 0.4.

Le numéro de charge assigné à chaque terminal téléphonique indique le pourcentage de la charge totale pouvant être connecté à une boucle ou à un circuit téléphonique, utilisé par ce périphérique afin de prévenir toute surcharge. La terminaison d'une boucle peut être constituée de n'importe quelle combinaison de périphériques de sorte que le total de numéros de charge de tous les périphériques n'excède pas 100.





#### **AVERTISSEMENT**

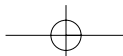
Pour assurer la sécurité, les utilisateurs doivent vérifier que la prise de terre du service d'électricité, les lignes téléphoniques et les conduites d'eau métalliques sont connectées ensemble. Les utilisateurs NE doivent PAS tenter d'établir ces connexions eux-mêmes, mais doivent contacter les services d'inspection d'installations électriques appropriés ou un électricien. Ceci peut être particulièrement important en régions rurales.

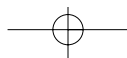
#### **UL NOTICE (FOR AUTHORIZED REPAIR TECHNICIANS ONLY)**

CAUTION: For continued protection against risk of fire, replace only with the same type and rating fuse.

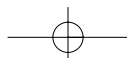
CAUTION: Danger of explosion if CMOS battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instruction.

WARNING: CMOS and NiCAD batteries may explode if mistreated. Do not recharge, disassemble or dispose of in fire.



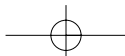


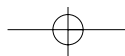
Black & White  
of Cover  
(to come)





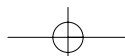
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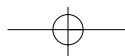




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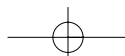
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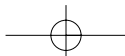
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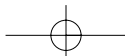
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**LifeBook E Series from Fujitsu**





## PREFACE

The LifeBook E Series from Fujitsu PC Corporation is a powerful notebook computer. It is powered by an Intel Pentium II microprocessor, has a built-in color display, a vast array of possible configurations and brings the computing power of desktop personal computers (PCs) to a portable environment.

This manual explains how to operate your LifeBook E Series' hardware and built-in system software. The LifeBook E Series is compatible with the IBM® PC AT. It comes with Windows 95, Windows 98, or Windows NT 4.0 pre-installed.

A LifeBook E Series is a completely self-contained unit with an active-matrix (TFT) color LCD display. It has a powerful interface that enables it to support a variety of optional features. (Figure P-1.)

## CONVENTIONS USED IN THE GUIDE

Screen examples in this manual are intended as examples only, and screen and file names may differ in actual use.

Messages displayed by the LifeBook E Series appear in *Courier* type.  
Example: Shutdown the computer?

Keyboard keys are shown in boldface **Helvetica** type.  
Example: **Fn**, **F1**, **Esc**, and **Ctrl**.

Pages with additional information about a specific topic are cross-referenced within the text.  
Example: (See page xx.)



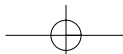
## POINT

The point icon highlights information that will enhance your understanding of the subject material.



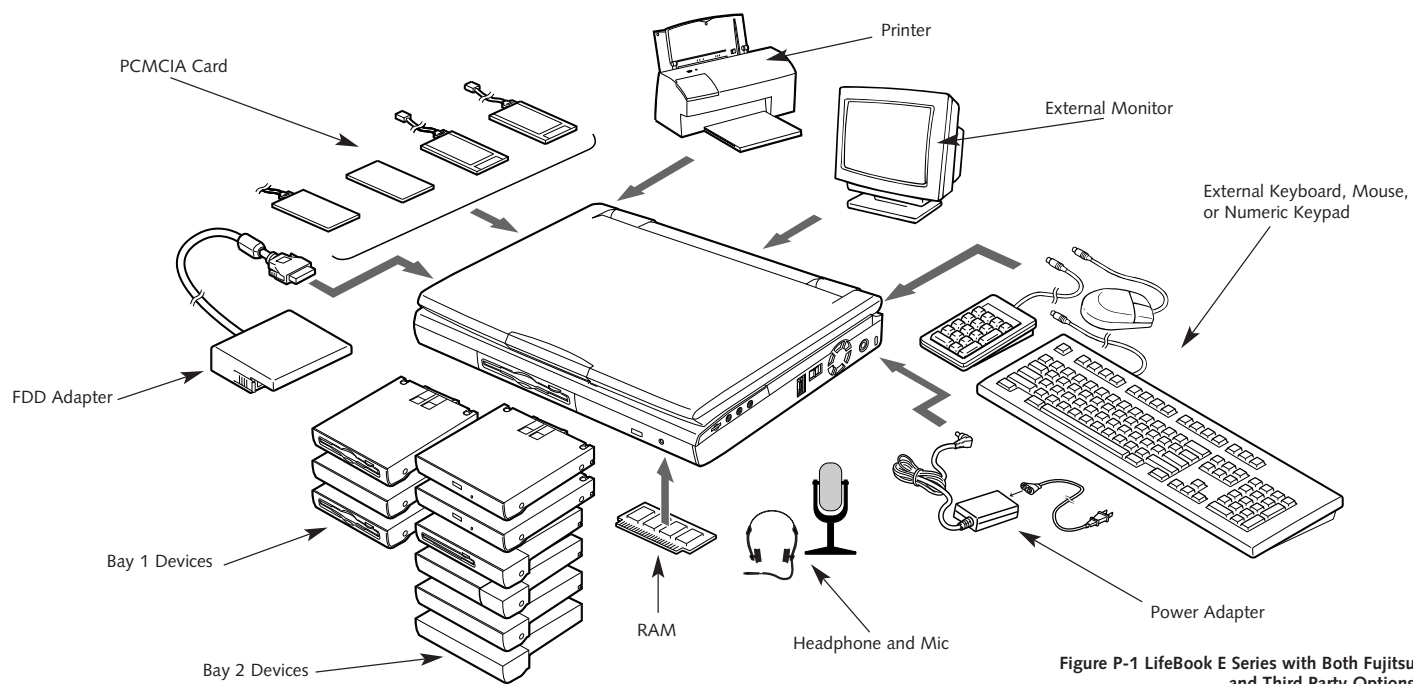
## CAUTION

The caution icon highlights information that is important to your safety, to the safe operation of your computer, or to the integrity of your files. Please read all caution information carefully.

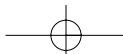




**LifeBook E Series from Fujitsu**



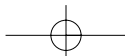
**Figure P-1 LifeBook E Series with Both Fujitsu and Third Party Options**





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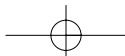
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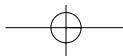




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 Section One

## SECTION ONE

### SETTING UP YOUR LIFEBOOK E SERIES FROM FUJITSU

This section describes how to set up your LifeBook E Series from Fujitsu. We strongly recommend that you read it before using your notebook – even if you are already familiar with notebook computers.

#### UNPACKING

When you receive your notebook, unpack it carefully, and compare the parts you have received with the items listed below and with your packing label.

For a standard configuration you should have:  
(Your configuration may be different.)

- LifeBook E Series from Fujitsu. (Figure 1-1.)
- AC adapter with AC power cord (located in the accessories box). (Figure 1-2.)
- Modular Lithium ion battery. (Already installed in Multi-function Bay 1 of your notebook.)
- Modular 24x maximum CD-ROM drive. (Already installed in Multi-function Bay 2 of your notebook.)
- Modular 3.5" floppy disk drive (located in the accessories box). (Figure 1-4.)
- Battery adapter for Multi-function Bay 2 (located in the accessories box.) (Figure 1-3.)
- Weight Saver for Multi-function Bay 2 (located in the accessories box.) (Figure 1-5.)
- RJ-11 cable (located in the accessories box).
- Getting Started Guide and User's Guide.
- Microsoft Windows 95, Windows 98 or Windows NT 4.0 Manual.
- Registration card and customer information pack.
- Recovery CD-ROM (located in the accessories box).

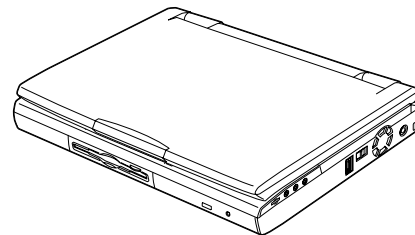


Figure 1-1 LifeBook E Series Notebook

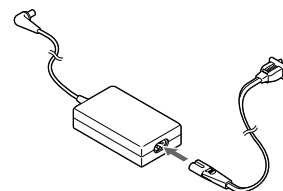
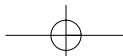


Figure 1-2 AC Adapter Unit



#### POINT

You may have different options than those listed if you have a built-to-order LifeBook E Series.





**Setting Up Your LifeBook E Series**

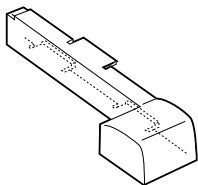


Figure 1-3 Battery Adapter for Multi-function Bay 2

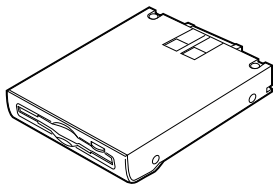


Figure 1-4 Floppy Disk Drive

Your LifeBook may have other optional devices depending on your built-to-order specifications. Please take a moment now to locate your packing slip and circle or enter the options that apply to your LifeBook specifications in the space to the right.

Once you have checked and confirmed that your notebook system is complete, read through the component identification section and learn about the features of your LifeBook.

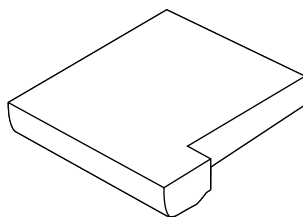


Figure 1-5 Weight Saver (for Multi-function Bay 2 only)

Date Purchased: \_\_\_\_\_

Model Number: \_\_\_\_\_

CPU:  233Mhz  266Mhz  300Mhz

LCD:  XGA (1024x768)  SVGA (800x600)

SDRAM:  32MB  64MB  96MB  160MB\*

HDD:  3.2GB  4.0GB  5.0GB  6.4GB

Communications Port:

- V.90 Modem  Fast Ethernet Module
- None

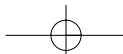
Multi-function Bay Devices:

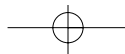
- Floppy Disk Drive FPCFDD05
- SuperDisk™ 120 FPCLS02
- Iomega Zip 100 Drive FPCZIP03
- CD-ROM Drive FPCCD09
- DVD Drive FPCDVD04
- Lithium ion Battery FPCBP14
- Secondary Hard Drive FPCHDD17
- Weight Saver FPCBB01
- Floppy Disk Drive Adapter for external FPCFDA03

Integrated Pointing Devices:

- ErgoTrac™ Pointing Device
- Touchpad Pointing Device

\*Availability depends on Qual of 128MB DIMMS






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 Section One
 

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## OVERVIEW OF LIFEBOOK E SERIES FEATURES AND OPTIONS

The LifeBook E Series is a compact, yet powerful notebook computer available with standard features including: (See Appendix A, pages 182-186, and your packing label for detailed information on individual models and Built-to-order options.)

- 233MHz, 266MHz or 300Mhz Intel Pentium II processor.
- 32MB SDRAM on-board, expandable to 160MB via expansion slot.
- 12.1" or 13.3" active-matrix (TFT) color display with 800 x 600 or 1024 x 768 resolution.
- 2MB on-board video RAM.
- DMI 2.0 compliant.
- Built-in 3.2GB, 4.0GB or 5.0GB hard drive.
- Multi-function Bays which support the following optional features:
  - Lithium ion battery (one included with all models).
  - 3.5" floppy disk drive (for Bay 1 only).
  - 24x maximum CD-ROM drive (for Bay 2 only).

- Optional SuperDisk™ 120 (for Bay 1 only).
- Optional 1.5-speed maximum DVD-ROM drive (for Bay 2 only).
- Optional Second hard drive (for Bay 2 only).
- Optional Iomega Zip 100 drive (for Bay 2 only).
- Optional Second Lithium ion battery (for Bay 1 and Bay 2 with adapter).
- Optional Floppy Disk Drive Adapter for external FDD connection.
- Weight Saver (for Bay 2 only).

Depending on your specific model number or your Built-to-order options you may have one of the following:

- Internal V.90 56K fax/data/voice modem with built-in telephony support.

### CAUTION

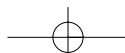
The internal modem is designed to the ITU-T V.90 standard. Its maximum speed is 56000bps at download theoretically and its actual connection rate depends on the line conditions. The maximum speed is 33600bps at upload.

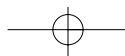
### CAUTION

The internal modem is not intended for use with Digital PBX systems. Do not connect the internal modem to a digital PBX as it may cause serious damage to the internal modem or your entire notebook. Consult your PBX manufacturer's documentation for details. Some hotels have Digital PBX systems. Be sure to find out BEFORE you connect your modem.

### CAUTION

The internal modems on all Fujitsu notebooks from Fujitsu PC Corporation are not qualified for use with telephone systems outside the United States and Canada and may not operate in other countries.





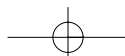
### Setting Up Your LifeBook E Series

- Internal Fast Ethernet (10/100 Base-T/Tx) network interface card with RJ-45 connector.
- No Modem or LAN.
- Full audio and video features:
- 16-bit SoundBlaster-compatible sound chip.
- 3D-Stereo for multiple speaker effect.
- Zoomed Video support for full motion video acceleration. (With Windows 95 and Windows 98 only.)
- Built-in stereo speakers.
- Built-in mono microphone.
- Stereo line in jack.
- Stereo headphone jack.
- Microphone jack.
- Two Type II/one Type III PC Card slot.
- Fast IrDA (4Mbps) compatible infrared port for wireless data transfer. (With Windows 95 and Windows 98 only.)
- Integrated ErgoTrac™ or Touchpad pointing device for customized comfort and cursor control.
- External monitor support with simultaneous display capabilities.
- Full-size keyboard with three dedicated Windows keys.
- Hot swap connection for an external keyboard or an external mouse.
- USB device support. (With Windows 95 and Windows 98 only.)
- Bridge battery for warm-swapping capabilities for batteries.
- Standard pre-installed software: (Pre-installed software will vary depending on your specific model number or your Built-to-order specifications.)
- Microsoft Windows 95, Windows 98 or Windows NT 4.0 operating system.
- LapLink for file transfer via modem, cable or infrared port. (With Windows 95 and Windows 98 only.)
- PMSet 98 (Windows 98) or PowerPanel (Windows NT 4.0 and Windows 95) for system power management.
- Agate Tioman HotSwap for hot-swapping functionality in Multi-function bays (with Windows 95 and Windows 98 only).
- NoteDock for hot-docking/undocking support and hot-swapping functionality in the Multi-function bays (with Windows NT 4.0 only).
- Card Executive for PCMCIA card support (with Windows NT 4.0 only).
- PC-Doctor for system diagnostics.
- NAI McAfee VirusScan for virus protection.
- ESS AudioRack for 3D-Stereo, audio CD and other audio controls (with Windows 95 and Windows 98 only).
- Standard user-install software:
- AT&T WorldNet Service (with Windows 95 and Windows 98 only).
- AOL (Windows 95 and Windows 98 only).
- Netscape Communicator.
- Internet Explorer (with Windows 95 and Windows NT 4.0 only). (Note: Explore comes intergrated in Windows 98).



#### POINT

McAfee VirusScan, PC-Doctor and Netscape Communicator are available on all three operating systems (Windows 95, Windows 98 and Windows NT 4.0).





Section One

### COMPONENT IDENTIFICATION

For detailed specifications on each model refer to Appendix A on pages 182–186.

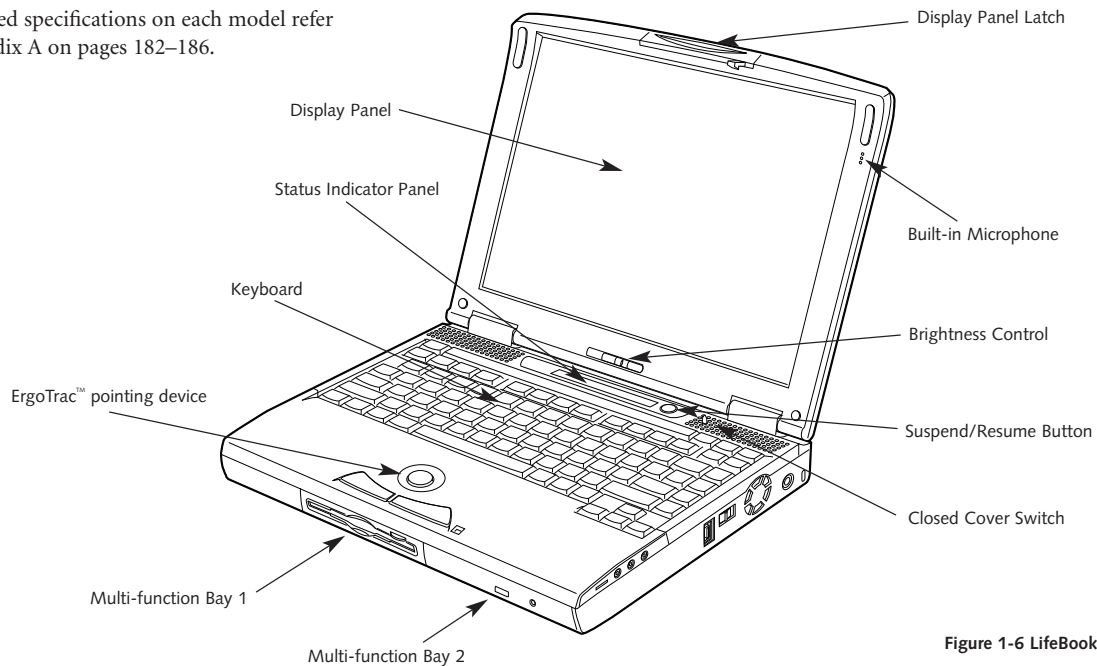
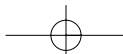
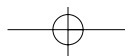


Figure 1-6 LifeBook E Series with Display Open





## TOP AND FRONT COMPONENTS

### Display Panel Latch

This latch locks and releases the display panel. When the display panel is released it pops up slightly to make it easier to open. (Figure 1-6.)

### Display Panel

This is a color LCD panel with back lighting for the display of text and graphics. (Figure 1-6.)

### Brightness Control

The brightness control adjusts the overall intensity of the display panel back lighting. (Figure 1-6.)

### Built-in Microphone

The built-in microphone allows mono audio input to your notebook. (Figure 1-6.)

### Status Indicator Panel

An LCD display of the status of the power state and source, Suspend mode, battery charge (battery in either Multi-function Bay), floppy disk drive activity, hard drive or zip drive activity, CD-ROM drive activity, PC Card activity, CapsLock, NumLk and Scr Lk. (Figure 1-6.)

### Stereo Speakers

The built-in dual speakers output stereo sound from the notebook. (Figure 1-6)

### Suspend/Resume Button

The Suspend/Resume button allows you to suspend notebook activity without turning off the notebook power, and to return it to an active state. This feature saves power, and is particularly useful when the notebook is running only on battery power. (See pages 48-53 and 107-112 for more information on power management.) (Figure 1-6.)

### Closed Cover Switch

The closed cover switch turns off the LCD back lighting when the display panel is closed, thus saving power. This switch also behaves as a Suspend/Resume button, when the closed cover switch is set to Suspend/Resume in the BIOS Setup Utility. (see pages 95-102 for more information on the BIOS Setup Utility) (Figure 1-6.)

## CAUTION

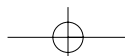
Be sure you know which settings are active for your Suspend/Resume button before you use it. Misuse can result in data loss. (See the Power Savings Menu of the BIOS setup utility, pages 107-112, for more information.)

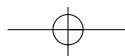
### Keyboard

A full-size keyboard with dedicated Windows keys for input into the notebook. (Figure 1-6.)

### Pointing Device

The pointing device is a mouse-like cursor control system with two click buttons. (Figure 1-6.)





Section One

**Multi-function Bay One**

This bay accommodates the following optional and standard devices:

- Lithium ion battery.
- Optional SuperDisk 120
- 3.5" floppy disk drive.

**Multi-function Bay Two**

This bay accommodates the following optional and standard devices:

- 24x maximum CD-ROM drive.
- Optional 1.5-speed maximum DVD-ROM drive.
- Lithium ion battery mounted in the Battery adapter for Multi-function Bay 2 (a second battery can be purchased separately for a dual battery configuration).
- Optional 5.0 GB Second hard drive.
- Optional Iomega Zip 100 Drive.
- Weight Saver.



**POINT**

The Weight Saver option for Multi-function Bay 2 is meant to fill the bay when no other device is installed. It is not recommended that you use your LifeBook with no device in either of the Multi-function Bays.

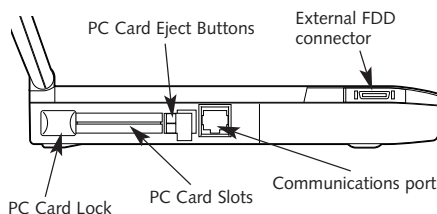


Figure 1-7 LifeBook E Series Left-side Panel

**LEFT-SIDE PANEL COMPONENTS**

**PC Card Slot**

The PC Card Slot allows you to install two Type I or Type II PC Cards or one Type III PC Card. (See pages 135-137 for more information on PC Cards.) The button to the left of the card slot

locks the card(s) in place, and the buttons to the right of the slot eject the card(s) from the slot. (Figure 1-7.)

**Communications Port**

The communications port may be configured with either an RJ-11 telephone jack for an internal 56K modem or an RJ-45 jack for an internal Fast Ethernet (10/100 Base-T/Tx) port. Check your packing sheet to see which option (if any) you have on your LifeBook. (Figure 1-7.)

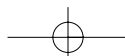
**External Floppy Disk Drive Port**

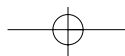
A port for attaching an optional external floppy disk drive with adapter. This allows you to connect an optional floppy disk drive when the Multi-function bays are being used for other purposes. (Figure 1-7.)



**POINT**

Your LifeBook may be configured with no device in the Communications port if you specified as such in your built-to-order options.





**Setting Up Your LifeBook E Series**

**RIGHT-SIDE PANEL COMPONENTS**

**Theft Prevention Lock Slot**

This is a slot that allows you to attach a physical lock down device. (Figure 1-8.)



**POINT**

Windows NT 4.0 does not support USB devices at this time.

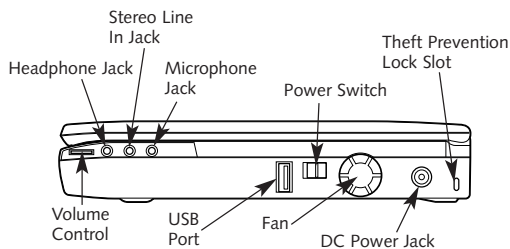


Figure 1-8 LifeBook E Series Right-side Panel

**DC Power Jack**

The DC power jack allows you to plug in the AC adapter or the optional auto/airline adapter. (Figure 1-8.)

**Power Switch**

This switch is the main power switch for your notebook. (Figure 1-8.)

**USB Port**

This port allows you to connect Universal Serial Bus devices, such as external game pads, pointing devices, keyboards and speakers. (Figure 1-8.)

**Microphone Jack**

The microphone jack allows you to connect an external mono microphone. (Figure 1-8.)



**CAUTION**

FAN: Do not block the circulation of air flow.

**Stereo Line In Jack**

The stereo line in jack allows you to connect an external audio source to your notebook, like an audio cassette player. This jack will not support an external microphone. (Figure 1-8.)

**Headphone Jack**

You can connect headphones or powered external speakers to the headphone jack. (Figure 1-8.)

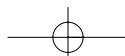
**Volume Control**

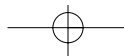
The volume control is a knob which provides manual control of the sound level of all audio output from your notebook. (Figure 1-8.)



**CAUTION**

There are also software volume controls. The knob setting and the software settings will interact. Software volume off will override the knob setting and the software volume setting will control the maximum knob setting. (See *Volume Control* on page 37 for more information.)





Section One

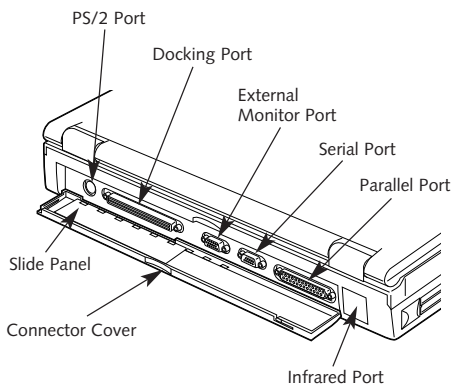


Figure 1-9 LifeBook E Series Rear Panel

**REAR PANEL COMPONENTS**

**PS/2 Port**

The port allows you to connect an external PS/2 keyboard, mouse, or numeric keypad. (Figure 1-9.)

**Docking Port**

This port is for connection to an optional port replicator or docking station. The connector cover must be closed and the sliding panel fully opened to reveal the docking port and the PS/2 port when connecting a port replicator or a docking station. (Figure 1-9.)

**CAUTION**

The cover – which closes over the ports on the rear of the notebook – can be damaged if it is left open when the notebook is moved around.

**POINT**

Windows NT 4.0 does not support infrared communications.

**Serial Port**

The serial port allows you to connect serial RS-232C devices, such as serial printers or serial scanners. (This is also sometimes referred to as a COM port.) (Figure 1-9.)

**Parallel Port**

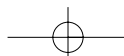
The parallel port allows you to connect parallel devices, such as a parallel printer to your notebook. (This is also sometimes referred to as a LPT port.) (Figure 1-9.)

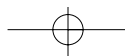
**External Monitor Port**

This port allows you to connect an external VGA or SVGA monitor. (Figure 1-9.)

**Infrared Port**

The fast IrDA 1.1 (4Mbps) compatible port allows you to communicate with another IrDA compatible infrared device without a cable. (See page 47 for more information.) (Figure 1-9.)





**Setting Up Your LifeBook E Series**

**BOTTOM COMPONENTS**

**Tilt Adjustment Feet**

These are a pair of feet which flip down and hold the back of the notebook approximately 6° higher than the front when resting on a flat surface. They are designed to make using your notebook keyboard more comfortable. (Figure 1-10.)

**Main Unit and Configuration Label**

This label shows the model number and other information about your notebook. In addition the configuration portion of the label has the serial number and manufacturer information that you will need to give your support representative so that he or she can help you. It identifies the exact version of various components of your notebook. (Figure 1-10.)

**Memory Upgrade Compartment**

This compartment houses the memory upgrade module which allows you to expand the system memory capacity of your notebook. (See pages 141-144 for more information on installing added memory capacity.) (Figure 1-10.)

**Multi-function Bay 1 Release Button**

This is the release to allow removal and installation of devices in Multi-function Bay 1. (Figure 1-10.)

**Multi-function Bay 1**

This compartment is accessed from the front of your notebook. (See Figure 1-6 on page 6.)

**Multi-function Bay 2 Release Button**

This is the release to allow removal and installation of devices in Multi-function Bay 2. (Figure 1-10.)

**Multi-function Bay 2**

This compartment is accessed from the front of your notebook. (See Figure 1-6 on page 6.)

**Hard Drive Compartment**

This compartment houses the primary hard drive. (See Figure 1-10.)

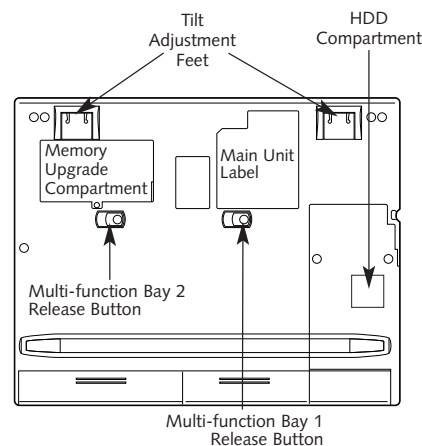
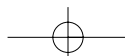


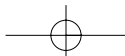
Figure 1-10 LifeBook E Series Bottom

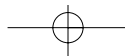




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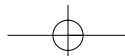
Section One

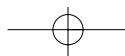




**Starting Your LifeBook E Series from Fujitsu**

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| Display Panel . . . . .  | 15 |
| Adjusting the Keyboard Angle . . . . .                                     | 15 |
| Starting Your Notebook<br>for the First Time . . . . .                     | 16 |
| Registering Your LifeBook . . . . .  | 22 |
| Learning About Your Operating System<br>and Application Software . . . . . | 24 |
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## Section Two

## SECTION TWO

### STARTING YOUR LIFEBOOK E SERIES FROM FUJITSU

This section describes the processes of starting your LifeBook for the first time, initial software setup and registration.

#### POWER SOURCES

Your notebook has four possible power sources: the primary Lithium ion battery; an optional dual Lithium ion battery configuration; the AC adapter; or an optional auto/airline adapter.

#### Connecting the Power Adapters

The AC adapter or an optional auto/airline adapter provides power for operating your notebook and charging the batteries.

(Figure 2-1.)

#### To Connect the AC Adapter

1. Plug the DC Output cable of the AC adapter into the DC Power jack on the right-side panel of your notebook.
2. Plug the AC adapter into an AC electrical outlet.

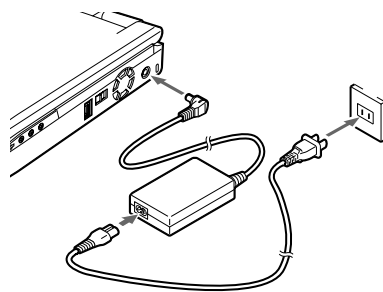


Figure 2-1 Connecting the AC Adapter

#### To Connect the Optional Auto/airline Adapter

1. Plug the DC Output cable into the DC Power jack on the right-side panel of your notebook.
2. Plug the auto/airline adapter plug into the cigarette lighter of a car or other vehicle with the ignition key in the On or the Accessories position or into the DC Power jack on an airplane seat.

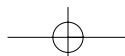
#### To Switch From AC Adapter Power To Battery Power

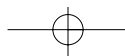
1. Be sure that you have at least one charged battery installed.
2. Remove the AC or auto/airline adapter.



#### CAUTION

The primary Lithium ion battery is not charged when you purchase your notebook. Initially you will need to connect the AC adapter or the auto/airline adapter to use it. If you purchase a second Lithium ion battery it will not be charged when you get it. You will need to charge it prior to use. It can take up to three (3) hours to charge a single battery if your notebook is turned off or is in Suspend mode. If your notebook is in use it can take up to nine (9) hours or more to charge a single battery.





**Starting Your LifeBook E Series**

**DISPLAY PANEL**

**Opening the Display Panel**

Lifting the latch releases the top of the display panel from the front of the notebook body. When the display panel is released it pops up slightly to make it easier to open. Lift the display panel backward until the screen is at a comfortable viewing angle. (Figure 2-2.)

**Adjusting the Display Panel**

Before you turn on your notebook, you may want to adjust the brightness level of the screen. Start with the brightness control slider (located directly under the display screen) in the middle position. (Figure 2-3.)

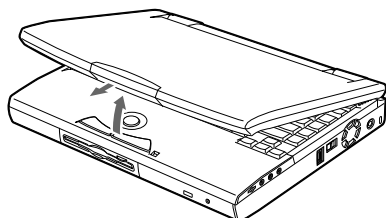


Figure 2-2 Opening the Display Panel

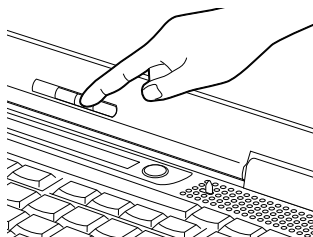


Figure 2-3 Adjusting the Display

You may need to adjust the brightness levels after you start your notebook and periodically for different operating environments.

**POINT**

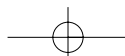
The higher the brightness level, the more power the notebook will consume and the faster your batteries will discharge. For maximum battery life, make sure that the brightness is set as low as possible.

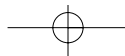
**ADJUSTING THE KEYBOARD ANGLE**

On the bottom of your notebook, near the back, are a pair of feet which flip down and hold the back of the notebook about 6° higher than the front when resting on a flat surface. They are designed to make it more comfortable to use the keyboard with your notebook. The feet must be folded flat against the bottom of the notebook when opening or using the CD-ROM drive or it will not open or operate properly.

**CAUTION**

Do not operate your CD-ROM drive or attempt to open the tray unless your notebook is sitting on a flat surface and the adjustment feet are folded against the bottom of the notebook. Using a CD-ROM drive when it is not level may damage the drive or prevent proper operation.





## Section Two

## STARTING YOUR NOTEBOOK FOR THE FIRST TIME

### Power On

The power switch is located on the right side of your notebook. This switch is used to turn On the computer from its Off state. Once you have connected your AC adapter or have charged the internal Lithium ion Battery, you can power On your notebook.

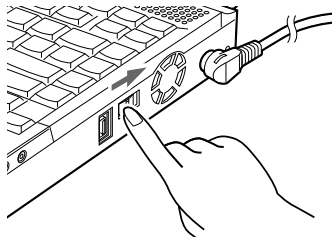


Figure 2-4 Power On



### CAUTION

When you turn on your notebook be sure you have a power source. This means that at least one battery is installed and charged, or that the AC adapter or the auto/airline adapter is connected and has power.



### CAUTION

The main Lithium ion battery is not charged when you purchase your notebook. Initially you will need to connect the AC adapter to use it. If you purchase an optional second Lithium ion battery, it will not be charged when you get it, you will need to charge it prior to use.

Facing the keyboard and display panel, move the power switch towards the rear of your notebook. This is the On position. (See Figure 2-4.) When you are done working you can leave your note-

book in Suspend mode, (see page 49), or you can turn it off. The power switch moved toward the front of your notebook is in the Off position. (See the section Power Off, pages 24-25, for the recommended shutoff procedures.)

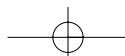


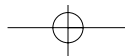
### CAUTION

Do not carry your notebook around with the power on or subject it to shocks or vibration, as you risk damaging your notebook.

When the power switch is turned on, your notebook carries out a Power On Self Test (POST) to check the internal parts and configuration. If a fault is found a beep will sound and/or an error message will be displayed. (See Troubleshooting on pages 170-172) Depending on the nature of the problem you may be able to continue by starting the operating system or by entering the BIOS setup utility and revising the settings.

After satisfactory completion of the Power On Self Test (POST) your notebook will load your operating system. (See Boot Menu on pages 115-116 to see which kind of disk will be the source.)





## Starting Your LifeBook E Series



### CAUTION

Never turn off your notebook during Power On Self Test (POST) or it will cause an error message to be displayed when you turn your notebook on the next time. (See the *Troubleshooting information on pages 170-172.*)

### Booting the System with Windows 95

We strongly recommend that you not attach any other external devices and do not put any CD or floppy disk in your drives until you have gone through the initial power on sequence.

When you turn on your notebook for the first time it will display a Fujitsu logo on the screen. If you do nothing the system will read the hard drive for the operating system software, flash the notebook configuration information on the screen, and load the Windows 95 Setup Wizard. You will then be stepped through the condition of use process. You must complete this initial process before you will be able to use your

notebook. (If you wish to access the BIOS setup utility before you go through the condition of use process you must press the **F2** key while the Fujitsu logo is still visible. If you press the **Esc** key while the Fujitsu logo is still present you will get a dialog box which will allow you to select which drive is to be used for finding the operating system.) If you turn off the power without using the on screen **Cancel** button you will get an error message when you start your notebook again.

### Condition of Use Process

The first time you start your notebook you must confirm your acceptance of the copyright limitations for your pre-installed software. After you complete the Condition of Use process these screens will not appear again. There are 6 screens to read carefully and respond to.

You **cannot** use your notebook until this Condition of Use process is completed. The bottom of each screen has a **<Back** button, a **Next>** Button and a **Cancel** button which are activated by the integrated ErgoTrac or

TouchPad cursor control and button click. The **<Back** button will return you to the previous screen. The **Next>** button activates any choices or information you have entered and takes you on to the next screen. The **Cancel** button allows you to stop the setup process.

If you stop the process your notebook will start up at the beginning of the Windows 95 Setup Wizard.

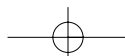
The screens you will be required to respond to are described with the required action.

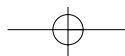
### User Information

Fill in your name and your company name as you want the software licensed. To step from the name blank to the company blank press the **Tab** key. When the information has been entered click on the **Next>** button. You will not be allowed to continue until you make an entry.

### License Agreement

Read the agreement carefully. You can scroll through the text using the integrated ErgoTrac or TouchPad pointing device to activate the





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## Section Two

scroll bar or use the up arrow ↑ and down arrow ↓ keys to move up and down the text one line at a time, or use the **Page Up** and **Page Down** keys to move the text one screen at a time. When you finish reading you must point and click to accept or reject the terms of the agreement and then click on the **Next>** button.

 **POINT**

If you reject the terms of the license agreement you will be asked to review the license agreement for information on returning Windows 95 or to shut down your notebook.

### Certificate of Authenticity

Look in the box that your notebook came in and you will find a Windows 95 Certificate of Authenticity shrink wrapped with the Windows 95 Users manual. On the certificate you will find a bar-code with a number above it. This is your product code and the number you should

enter on the Certificate of Authenticity screen. When you have entered the number exactly as shown then click on the **Next>** button.

### Start Wizard

The Start Wizard screen will appear if you have entered a valid product code. When you click on the **Finish** button the display will flash various screens as the system identifies what hardware is installed.

### Time Zone

When your notebook has completely identified all of the installed hardware it will display a dialog box for entering which time zone you wish to set the clock to.

### Printer Setup

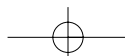
When the messaging setup is complete a dialog box will appear for selecting which printer is to be attached to your notebook. You do not have to select a printer at this time. If you do not wish to select a printer, click on the **Cancel** button. If you do wish to select a printer click on the **Next** button and answer the questions.

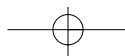
### Windows 95 Setup

Once you have completed the printer setup, or if you have chosen not to set up a printer at this time, you will see the Windows 95 Setup screen. This screen lets you set up Internet Explorer 4.01 with Active Desktop on your Lifebook. Follow the on-screen direction to complete installation of IE 4.01

 **POINT**

If you would like to skip the installation of Internet Explorer 4.01, go to the Start Menu on the desktop, select **Shutdown and Restart** the computer. After returning to Windows, you can install Internet Explorer 4.01 at any time by selecting the icon **Setup for Internet Explorer 4.01** in the **Internet Starts Here** folder on the desktop.



**Starting Your LifeBook E Series****Booting the System with Windows 98**

We strongly recommend that you not attach any other external devices and do not put any CD or floppy disk in your drives until you have gone through the initial power on sequence.

When you turn on your notebook for the first time it will display a Fujitsu logo on the screen. If you do nothing the system will read the hard drive for the operating system software, flash the notebook configuration information on the screen, and then the Windows 98 Setup Wizard Screen will appear. You will then be stepped through the condition of use process. You must complete this initial process before you will be able to use your notebook. (If you wish to access the BIOS setup utility before you go through the condition of use process you must press the **F2** key while the Fujitsu logo is still visible. If you press the **Esc** key while the Fujitsu logo is still present you will get a dialog box which will allow you to select which drive is to be used for finding the operating system.) If you turn off the power without using the on screen **Cancel** button you will get an error message when you start your notebook again.

**Condition of Use Process**

The first time you start your notebook you must confirm your acceptance of the copyright limitations for your pre-installed software. After you complete the Condition of Use process these screens will not appear again. There are 6 screens to read carefully and respond to.

You **cannot** use your notebook until this Condition of Use process is completed. The bottom of each screen has a **<Back** button, a **Next>** Button and a **Cancel** button which are activated by the integrated ErgoTrac or TouchPad cursor control and button click. The **<Back** button will return you to the previous screen. The **Next>** button activates any choices or information you have entered and takes you on to the next screen. The **Cancel** button allows you to stop the setup process.

If you stop the process your notebook will start up at the beginning of the Windows 98 Setup Wizard.

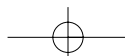
The screens you will be required to respond to are described with the required action.

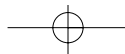
**User Information**

Fill in your name and your company name as you want the software licensed. To step from the name blank to the company blank press the **Tab** key. When the information has been entered click on the **Next>** button. You will not be allowed to continue until you make an entry.

**License Agreement**

Read the agreement carefully. You can scroll through the text using the integrated ErgoTrac or TouchPad pointing device to activate the scroll bar or use the up arrow **↑** and down arrow **↓** keys to move up and down the text one line at a time, or use the **Page Up** and **Page Down** keys to move the text one screen at a time. When you finish reading you must point and click to accept or reject the terms of the agreement and then click on the **Next>** button.





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 **POINT**

If you reject the terms of the license agreement you will be asked to review the license agreement for information on returning Windows 98 or to shut down your notebook.

### Product Key

Look in the box that your notebook came in and you will find a Windows 98 Certificate of Authenticity shrink wrapped with the Windows 98 Users manual. On the certificate you will find a bar-code with a number above it. This is your product key and the number you should enter on the Product Key screen. When you have entered the number exactly as shown then click on the **Next>** button.

### Start Wizard

The Start Wizard screen will appear if you have entered a valid product key. When you click on the **Finish** button the display will flash various screens as the system identifies what hardware is installed.

### Time Zone

When your notebook has completely identified all of the installed hardware it will display a dialog box for entering which time zone you wish to set the clock to.

### Printer Setup

When the time zone setup is complete a dialog box will appear for selecting which printer is to be attached to your notebook. You do not have to select a printer at this time. If you do not wish to select a printer, click on the **Cancel** button. If you do wish to select a printer click on the **Next** button and answer the questions.

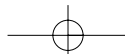
### Welcome to Windows 98

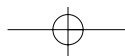
When you boot into Windows 98 for the first time you will see a Welcome to Windows 98 dialog box with several options. Select the first option, **Register Now**, to register your LifeBook E Series notebook. (See page 21 in this section for details on registering your notebook in Windows 98.)

### Booting the System with Windows NT 4.0

We strongly recommend that you not attach any other external devices and do not put any CD or floppy disk in your drives until you have gone through the initial power on sequence.

When you turn on your notebook for the first time it will display a Fujitsu logo on the screen. If you do nothing the system will read the hard drive for the operating system software, flash the notebook configuration information on the screen, and then the Windows NT 4.0 Setup Wizard Screen will appear. You will then be stepped through the condition of use process. You must complete this initial process before you will be able to use your notebook. (If you wish to access the BIOS setup utility before you go through the condition of use process you must press the **F2** key while the Fujitsu logo is still visible. If you press the **Esc** key while the Fujitsu logo is still present you will get a dialog box which will allow you to select which drive is to be used for finding the operating system.) If you turn off the power without using the on screen **Cancel** button you will get an error message when you start your notebook again.





 **POINT**

If you reject the terms of the license agreement you will be asked to review the license agreement for information on returning Windows NT Workstation or to shut down your notebook

**Windows NT Setup**

The Windows NT Setup screen appears after you accept the license agreement. This setup wizard will guide you through the setup of your Windows NT Workstation.

**Name and Organization**

Fill in your name and the company name as you want the software licensed. To step from the name blank to the company blank press the **Tab** key. When the information has been entered click on the **Next>** button. You will not be allowed to continue until you make an entry.

**Registration**

Look in the box that your notebook came in and you will find a Windows NT Workstation Certificate of Authenticity shrink wrapped with the Windows NT Workstation Users manual. On the certificate you will find a bar-code with a number above it. This is your product ID and the number you should enter on the Registration screen. When you have entered the number exactly as shown then click on the **Next>** button.

**Computer Name**

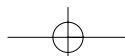
You need to enter a name for your computer to be identified by on the network. This must be a unique name and must be 15 characters or less. Enter a name for your computer to be identified by and click on the **Next>** button.

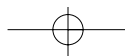
**Administrator Account**

This screen lets you setup a password for the Administrator account on your notebook. The administrator account has authority over all user accounts. You must not forget this password. If you do not wish to have password protection on your administrator account you can leave this screen blank. When you have entered and confirmed your password click on the **Next>** button.

**Windows NT Setup**

Once you have setup your computer name and your administrator account you can click on the **Next>** button to finish the Windows NT Workstation setup and begin installing Windows NT networking. This will take your notebook a few seconds and you will need to reboot the system when it is complete.





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Section Two

 **POINT**

You will find a Recovery CD-ROM packet in your accessories box. Please store the packet in a safe place in case there is a loss of data, and it becomes necessary to re-install your operating system and/or application programs. (See *Restoring Your Pre-installed Software from the Recovery CD-ROM on pages 174-176.*)

### REGISTERING YOUR LIFEBOOK

#### What are the benefits of registering?

You will receive an identification label for your LifeBook, which, if your LifeBook is ever lost, may help in getting it returned to you. You also receive priority Personal Identification Number (PIN) technical support access and useful product mailings. Proof of purchase is not required if you register within 30 days of your purchase.

#### How do I register?

For Windows 95 and Windows NT, you can register your system by modem by clicking on the Fujitsu Welcome Center icon on your desktop. Complete the electronic form and click on the "send registration" button. Your registration information will be transmitted via phone lines to the Fujitsu Registration Center and you will receive registration confirmation in one week to 10 days.

For Windows 98, you can access the Softbank E-Registration program by selecting the Register Now option in the Welcome to Windows 98 wizard menu. This menu appears the first time you start Windows 98 after completing the Condition of Use process. To access the Welcome to Windows 98 wizard anytime, double-click on the Welcome to Windows 98 icon on your desktop.

 **POINT**

Make sure you have connected a phone line to your modem or Ethernet Network to your Ethernet port before you use E-Registration.

You may also print your completed registration form and fax it to

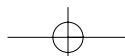
1-949-450-9140 or mail it to:

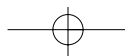
Fujitsu PC Corporation

15355 Barranca Pkwy, Irvine, CA 92618-9520

Alternately you may call:

1-800-8fujitsu (1-800-838-5487)





**Starting Your LifeBook E Series**



**POINT**

You can register your LifeBook E Series notebook with any operating system via mail, telephone or fax.



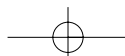
**POINT**

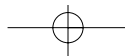
Please consult your User's Guide for specific information about the internal modem and electronic registration for the LifeBook E Series. Consult Microsoft on-line documentation for specific information about the Windows Desktop and Control Panel programs.

**After Registering Your LifeBook E Series in Windows 98**

If you do not have an existing internet connection or account and you would like to have Windows 98 retrieve a list of Internet Service Providers for you, please do the following:

1. Open the 'My Computer' folder on the Windows Desktop.
2. Open the 'Control Panel' folder.
3. Open the 'Network' program.
4. You will see the following message:  
"Your network is not complete. Do you want to continue?"
5. Select 'Yes'.
6. Click the 'Add' button.
7. Select 'Client' for the type of network component you want to install.
8. Select 'Microsoft', choose the default setting 'Client for Microsoft Networks' and click 'Ok'.
9. Click 'Ok' to close the Network program (you may close the 'Control Panel' folder too if you'd like) and Windows will begin copying files.
10. When Windows prompts you to restart the computer, click the 'Yes' button.
11. The 'Enter Windows Password' screen will pop up. Enter a 'User Name' and 'Password' to continue.
12. After the Windows 98 Desktop appears, connect a standard phone line to your modem.
13. Open the 'Connect to the Internet' program on the Desktop.
14. Select the first option 'I want to sign up...' and click 'Next'
15. Windows 98 will dial a 1 (800) phone number to connect to the internet and provide you a list of Internet Service Providers. Follow the on-screen directions to continue.





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**Section Two****LEARNING ABOUT YOUR OPERATING SYSTEM AND APPLICATION SOFTWARE****Tutorials**

All operating systems and most application software have tutorials built-in. We highly recommend that you step through your tutorial before you use an application even if you are familiar with the same application on a different machine, an earlier version of the application, or a similar product.

**Manuals**

In the accessories box you will find manuals for your installed operating system and other pre-installed software.

Software manuals of pre-installed software that are not in the accessories box are available online. See the help screens of your pre-installed software. We recommend that you review these manuals for general information on the use of these applications and to get a basic understanding of what is covered in the manual, and how it is organized, should questions arise as you use the applications.

**Links to Fujitsu On-line**

You can go directly to the on-line Fujitsu Accessories catalog for your notebook by clicking on the LifeBook Accessories Website URL link in the Windows Start menu. This will take you to the Web site for Fujitsu Lifebook accessories. You can also reach Fujitsu Service and Support on-line by clicking on the Fujitsu Service and Support Website URL link in the Service and Support Software folder in the Windows Start menu.

**POINT**

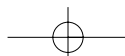
You must have an active internet connection to use the on-line URL links described in the Links to Fujitsu On-line.

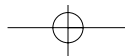
**POWER OFF**

Before turning off the power by putting the power switch in the Off position, check that the Hard Drive, CD-ROM, PC Card and the Floppy Disk Drive Access indicators are all Off. (See *Figure 2-4, page 16.*) If you turn off the power while accessing a disk or PC Card there is a risk of loss of data. The Off position is reached by facing the keyboard and display panel, and moving the switch toward the front of your notebook. To assure that your notebook shuts down without error, use the Windows shut down procedure.

**CAUTION**

Never turn your notebook off while an application is running. Be sure to close all files, exit all applications and shut down your operating system prior to turning off the power with the power switch. If files are open when you turn the power off, you will lose any changes that have not been saved, and may cause disk errors.





## Starting Your LifeBook E Series

Shutting down your notebook from Windows lets your notebook shut down operations, and turn off the power in the proper sequence to prevent errors. The sequence is:

1. Go to the Start button menu.
2. Click on **Shut Down**.
3. Verify that **Shut Down** is selected and click on **Yes**.

If you are going to store your notebook for a month or more, take the following precautions:

1. Remove any CD and/or floppy disk.
2. After shutting down from Windows turn off your notebook using the power switch.
3. Close your notebook display panel.
4. Disconnect the AC adapter.
5. Remove the batteries and store them separately in a cool dry place.

### POINT

When your notebook has been shut down from Windows, it is not the same as being turned off from the power switch. It is in a pseudo-off state, with all applications closed, but can and must be turned on by pressing the Suspend/Resume button. It is drawing some current in the pseudo-off state.

### RESTARTING THE SYSTEM

When you wish to restart your system be sure that you follow the proper procedure. The procedure is as follows:

1. Go to the Start button menu.
2. Click on **Shut Down**.
3. Click on **Restart**.
4. Verify that **Restart** is selected and click on **Yes**.

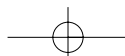
Windows will shut down and restart your notebook.

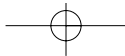
### POINT

You may also select **Shut Down** and once the power is off for 10 seconds or more you can restart your notebook with the Suspend/Resume button, or once the power is off, turn the power switch to Off for 10 seconds and then switch it to On. These alternative methods are not recommended.

### CAUTION

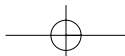
Turning off the power switch without exiting Windows may cause an error when you start the next time. Turning the power to On when it has been Off for less than 10 seconds may also cause an error when you start the next time.

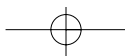




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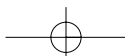
*S e c t i o n T w o*





**Using Your LifeBook E Series from Fujitsu**

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Section Three

**SECTION THREE  
USING YOUR LIFEBOOK  
E SERIES FROM FUJITSU**

This section describes the indicators, buttons, connections and operating modes of your LifeBook E Series and their use.

**STATUS INDICATOR PANEL**

The Status Indicator panel is located in the recess just above the keyboard. (Figure 3-1.) The appropriate indicators become visible as you use your notebook.

**Power Indicator**

The Power indicator tells you when the system is operational. It is on steady when there is power to your notebook, and blinks when the system is in Suspend mode. It goes off when the system has entered Save-to-Disk mode, or the power is turned off from the power switch.

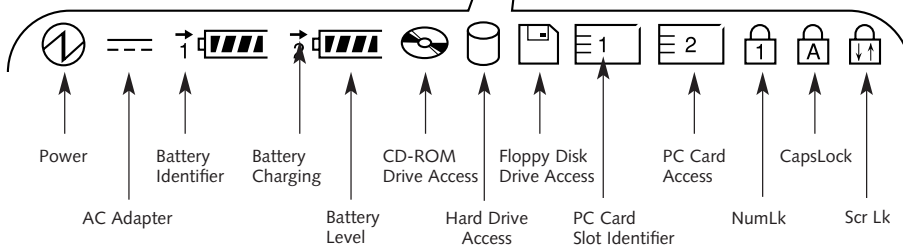
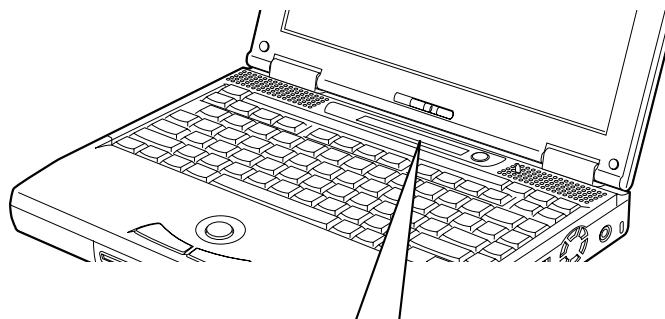
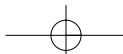
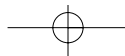


Figure 3-1 Status Indicator Panel




 **POINT**

When your notebook has been shut down from Windows, it is not the same as turned off from the power switch. It is in a pseudo-off state, with all applications closed, but can be turned on by pressing the Suspend/Resume button. It is drawing some current in the pseudo-off state.

 **CAUTION**

Your notebook's power switch must be turned off to prevent all current draw.

**AC Adapter Indicator**

The AC Adapter indicator tells you whether the system is operating on an AC or auto/airline adapter, or batteries alone. The indicator is On when either of the adapters is active and Off when power comes from the batteries alone. If a battery is charging, the Power Adapter indicator

is active regardless of the setting of the power switch. The AC Adapter indicator is also active if you have shut down from Windows but have not turned the power switch to Off. If there is no battery charging, and the power switch is Off, then the AC Adapter indicator and the Battery indicators will all be Off.

**Battery Indicators**

The two sets of battery indicators show whether or not the primary Lithium ion battery and/or the optional second Lithium ion battery are installed, and indicate the condition of each. (Figure 3-2.) Battery 1 is the Lithium ion battery which is installed in Multi-function Bay 1 and Battery 2 is the Lithium ion battery which is installed in Multi-function Bay 2. The battery indicators are displayed only for a battery which is installed.

A small arrow icon (Battery Charging indicator) appears to the left of each of the Battery Level indicators and above the number (Battery identifier) if that battery is charging. The Battery Charging indicator flashes if the battery is too hot or too cold to charge. (Figure 3-2.)

The Battery Charging indicators operate whether the power switch is Off or On.

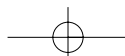
The symbols inside the battery outline of the Battery Level indicator show the operating level available in that battery. (Figure 3-2.) If there is no battery charging and the power switch is Off then the AC Adapter indicator and the Battery indicators will all be off.

 **CAUTION**

A shorted battery is damaged and must be replaced. (See Figure 3-2.)

 **CAUTION**

Turning off the power with the power switch or using the Suspend/Resume button when any of the Access indicators are On may cause loss of data and/or system errors.





Section Three

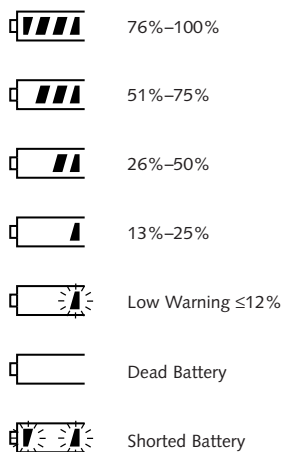


Figure 3-2 Battery Level Indicator

**CAUTION**

Batteries subjected to shocks, vibration temperatures or extreme temperatures can be permanently damaged.

**CD-ROM/DVD Drive Access Indicator**

The CD-ROM/DVD Access indicator tells you the CD-ROM or DVD drive is being accessed. The CD-ROM/DVD Access indicator will flash when the software tries to access a CD, DVD or CD-ROM even if no CD-ROM or DVD drive is installed.

**POINT**

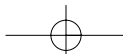
The Windows CD automatic insertion function will periodically check for a CD installed in the drive, causing the CD-ROM Access indicator to flash. The CD automatic insertion function allows your system to automatically start a CD as soon as it is inserted in the drive and the tray is closed. It will begin playing an audio CD or will start an application if the CD has an auto run file on it.

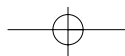
**POINT**

If you do not wish to have the CD automatic insertion function on you can disable it.

To disable the CD automatic insertion function for Windows 95/98 do as follows:

1. Save all data and close all applications.
2. Click on the Start button.
3. Point to *Settings*.
4. Click on the Control Panel. The control panel window will be displayed.
5. Double click on the System icon. The system properties dialogue box will be displayed.
6. Click on the Device Manager tab. The device list will be displayed.
7. Click on the + to the left of the CD-ROM icon. The CD-ROM drive manufacturer's name and model will be displayed.





8. Click on the CD-ROM drive manufacturer's name and model.
9. Click on Properties. The CD-ROM drive manufacturer's name and model properties dialogue box will be displayed.
10. Click on the Settings tab.
11. Click on the automatic insertion notification box to toggle it off.
12. Click on OK.
13. Click on OK in the system properties dialogue box.
14. Restart your notebook according to the message displayed.

You can re-enable the function by repeating the process except in step 11 change the setting to on.

#### **Hard Drive or Removable Media Drive Access Indicator**

The Hard Drive Access indicator tells you when either the internal hard drive, an optional second hard drive or an optional Zip drive is being accessed.



#### **POINT**

The Hard Drive Access indicator does not show which hard drive or Zip drive, is being accessed. It works the same for any one.

#### **Floppy Disk Drive Access Indicator**

The Floppy Disk Drive Access indicator tells you when a floppy disk drive or SuperDisk drive is being accessed. The Floppy Disk Drive Access indicator will flash when your software tries to access a floppy disk or SuperDisk even if no floppy disk drive or SuperDisk drive is installed.

#### **PC Card Access Indicators**

The PC Card Access indicators tell you when an installed PC Card is being accessed. Card 1 is the bottom connector inside the slot and Card 2 is the upper connector inside the card slot. Type III cards are always Card 1 only. The PC Card Access indicator will flash if your software tries to access a PC Card even if none are installed.

#### **NumLk Indicator**

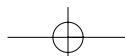
The NumLk indicator tells you the internal keyboard is set in ten-key numeric keypad mode. (See page 36 for more information on the numeric keypad.) You can activate the NumLk mode by pressing the **NumLk/Scr Lk** key while holding down the **Shift** key. Deactivate the setting the same way that you activated it.

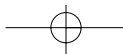
#### **CapsLock Indicator**

The CapsLock indicator tells you when the keyboard is set for all capital letters. Activate the all capital letters setting by pressing the **CapsLock** key on the keyboard. Deactivate the setting the same way that you activated it.

#### **Scr Lk Indicator**

The Scr Lk indicator tells you when scroll lock is active. You can activate the scroll lock by pressing the **NumLk/Scr Lk** key. Deactivate the setting the same way that you activated it.





Section Three

**INTEGRATED POINTING DEVICE**

Your LifeBook E Series will have either an integrated ErgoTrac or a TouchPad pointing device. Please refer to the section that describes your pointing device.

**Integrated ErgoTrac Pointing Device**

The ErgoTrac pointing device is composed of a short, comfortable, dish-shaped pointing device and two buttons located in front of the keyboard. The ErgoTrac pointing device has the function of a mouse, and moves the cursor around on the screen – up, down, left and right. A light pressure with the tip of your finger is all that is required to operate the ErgoTrac. The more pressure you use the faster the cursor will move. The second part of the ErgoTrac pointing device – the buttons – function as mouse buttons, and the functions they perform depend on the application you are running. Figure 3-3 shows the position of the ErgoTrac pointing device and buttons.

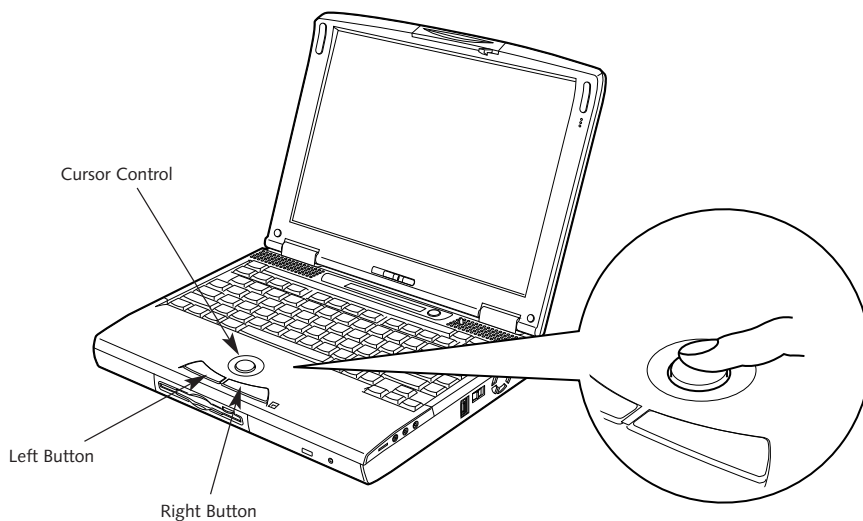
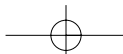


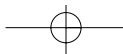
Figure 3-3 ErgoTrac Pointing Device



**POINT**

You may have a TouchPad if your specified such in your Built-to-order LifeBook configuration.





**Using Your LifeBook E Series**

**POINT**

An external mouse can be connected to the PS/2 port on the back side of the notebook, and used simultaneously with the integrated pointing device. However, if you boot the system with the PS/2 mouse connected the internal pointing device will be disabled as specified in your BIOS settings. You can set the internal pointing device so that it is always enabled. (See Section 4, page 90 for details).

**Clicking**

Clicking means pushing and releasing a button. To left-click move the screen cursor to the item you wish to select, press the left pointing device button once, and then immediately release it. To right-click, move the mouse cursor to the item you wish to select, press the right pointing device button once, and then immediately release it. (Figure 3-4.)

**Double-Clicking**

Double-clicking means following the preceding Clicking procedure, but pressing the pointing device button twice in rapid succession. Double-clicking works with both the left and right buttons.

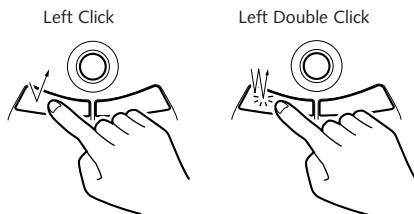


Figure 3-4 Clicking

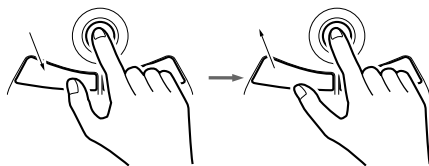


Figure 3-5 Dragging

**CAUTION**

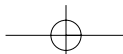
If the interval between clicks is too long, double-clicking will not be executed.

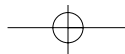
**POINT**

The interval between presses for double clicking, and other parameters of pointing and selecting, can be adjusted with the selections in the dialog box of the mouse icon in your Windows Control panel.

**Dragging**

Dragging means selecting an item with the pointing cursor, and while keeping the left pointing device button depressed, moving the cursor to the desired new location, then releasing the button. (Figure 3-5.)





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#### Integrated Touchpad Pointing Device

The TouchPad pointing device is composed of a small rectangular touch sensitive pointer control and two buttons located in front of the keyboard. The TouchPad pointing device has the function of a mouse, and moves the cursor around on the screen – up, down, left and right. A light pressure with the tip of your fingernail is all that is required to operate the TouchPad. Pencil erasers, etc. don't work. The faster you move your finger the faster the cursor will move. The second part of the TouchPad pointing device – the buttons – function as mouse buttons, and the functions they perform depend on the application you are running. *Figure 3-6* shows the position of the TouchPad and buttons.

#### POINT

The left mouse button functions can also be performed with your finger on the TouchPad.

#### Clicking

Clicking means pushing and releasing a button. To left-click, move the screen cursor to the item you wish to select, press the left pointing device button once, and then immediately release it. To right-click, move the mouse cursor to the item you wish to select, press the right pointing

device button once, and then immediately release it. (*Figure 3-7.*) You can also left click by a light tap on the TouchPad ending with your finger off the pad, instead of using the button.

#### Double-Clicking

Double-clicking means following the preceding Clicking procedure, but pressing the pointing device button twice in rapid succession. Double-clicking works with either the left or the right button. You can also double left click by two light taps on the TouchPad ending with your finger off the pad, instead of using the button.

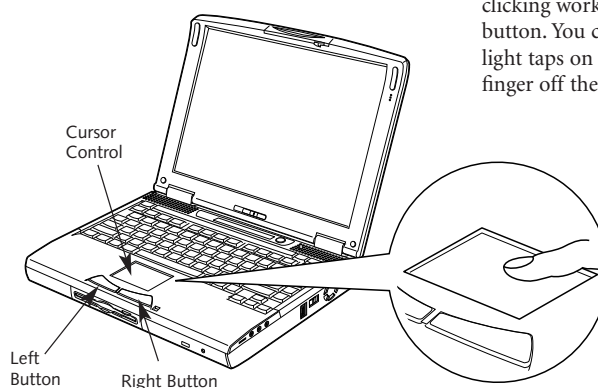
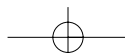


Figure 3-6 TouchPad Pointing Device



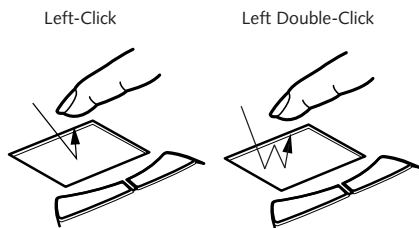
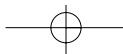


Figure 3-7 Clicking

**CAUTION**

If the interval between clicks is too long, the double-click will not be executed.

**POINT**

The interval between clicks for double clicking, and other parameters of pointing and selecting, can be adjusted with the selections in the dialog box of the mouse icon in your Windows Control panel.

**Dragging**

Dragging means selecting an item with the pointing cursor, and while keeping the left pointing device button depressed, moving the cursor to the desired new location, then releasing the button. (Figure 3-8.) Dragging can also be done on the TouchPad – two light taps ending with your fingernail on the pad and then moving, or holding the left button down and moving your fingernail on the pad.

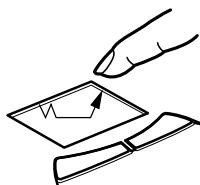


Figure 3-8 Dragging

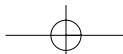
**POINT**

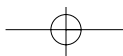
For your convenience, we have included the Alps GlidePoint mouse driver for your integrated Touchpad device on our Recovery CD. Locate your Recovery CD in the accessories box. Insert the Recovery CD into your system while the operating system is active and through My Computer or Windows Explorer, locate the directory D:\Drivers\Touchpad. Follow the directions in the readme file in this directory to install the optional driver.

**Integrated Pointing Device Control Adjustment**

The Windows Control Panel provides customization of your pointing device from the mouse icon. There are four (4) aspects of pointing device operation which you can adjust.

- Buttons – This lets you set up the buttons for right or left handed operation and set the time interval for double clicking.





Section Three

- Pointers – This lets you set up the size and shape of the cursor for different functions.
  - Motion – This lets you set up the relation of the speed of motion of your finger to the motion of the cursor and to enable a trailing tail for the cursor arrow.
  - General – This allows you to choose the type of mouse being used. It is already set for your integrated pointing device. You may need to change it for an external mouse.
- You may want to try practicing with different adjustments until you find a combination that is comfortable for you.

**USING THE KEYBOARD**

Your notebook has an integral 86-key keyboard. (Figure 3-9.) The keys perform all the standard functions of a 101-key keyboard and also include Windows keys and other special function keys. This section describes only those items specific to your notebook. They are the numeric keypad, the cursor keys, the function keys, the function extension key (Fn) and the Windows keys.

**Numeric Keypad**

Certain keys on the keyboard perform dual functions as both standard character keys and numeric keypad keys. Figure 3-9 highlights these keys. To switch into numeric keypad mode, press the **NumLk/Scr Lk** while holding down the Shift key. You can now enter numerals 0 through 9, perform addition (+), subtraction (-), multiplication (\*), or division (/), and enter decimal points (.) using the keys designated as ten-key function keys. The keys in the numeric keypad are marked on the front edge of the key to indicate their secondary functions.

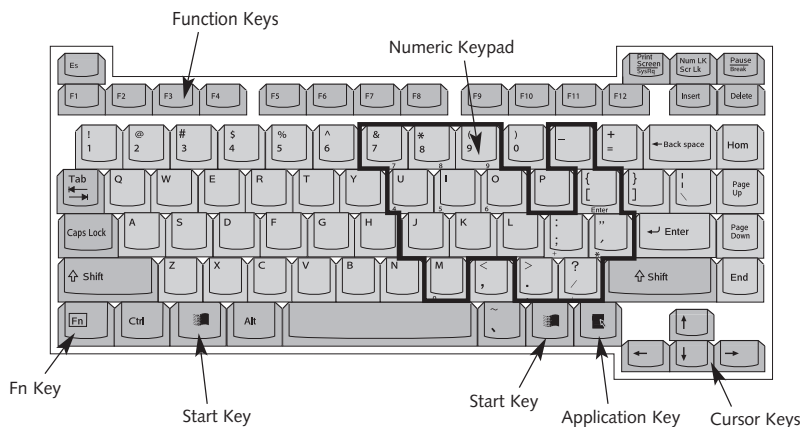
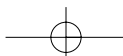
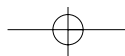


Figure 3-9 Keyboard





To return these keys to their normal character function, press the **NumLk/Scr Lk** while holding down the **Shift** key again.

#### POINT

When an external numeric keypad is connected to the notebook the NumLk mode enables the external keypad and disables the built-in keyboard numeric keypad.

#### Cursor Keys

The cursor keys are the four arrow keys on the keyboard which allow you to move the cursor up ↑, down ↓, left ← and right → as your application allows.

#### POINT

The integrated pointing device and/or external mouse are also used for moving the cursor around the screen.

#### Function Keys

Your notebook has 12 function keys, **F1** through **F12**. The functions assigned to these keys differ for each application. You should refer to your software documentation to find out how these keys are used. (See Figure 3-9.)

#### Fn Key

The **Fn** key provides extended functions for the notebook and is always used in conjunction with another key. (See Figure 3-9.)

Pressing **F5** while holding down the **Fn** key allows you to toggle between video compensation and no compensation. (Video compensation controls spacing on the display. When it is enabled, displays with less than 1024 x 768 or 800 x 600 pixel resolution will still cover the entire screen.)

Pressing **F10** while holding down the **Fn** key allows you to change your selection of where to send your display video. Each time you press the combination of keys you will step to the next

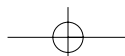
choice. The choices, in order, are: built-in display panel only, external monitor only, or both built-in display panel and external monitor.

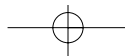
#### Windows Keys

Your notebook has three Windows keys, two Start keys and an Application key. The Start key displays the Start menu. This is the same as the button on the toolbar which is typically at the bottom of your Windows desktop. The Application key has the same function in Windows as the right mouse button, it displays the Shortcut menu for whatever item is selected. See your Windows documentation for additional information. (See Figure 3-9.)

#### VOLUME CONTROL

All system and application functions have multiple volume controls which interact with each other. There is the hardware volume control on the right side panel of your notebook. There is a volume control in the ESS AudioRack, your operating system Sound Control panel and any other application with sound.





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*Section Three*

Each setting source puts an upper limit on the volume which can be set by the other sources. For example if the hardware volume control is turned all the way down, your software volume control settings have no effect. By the same token, if the ESS AudioRack has the sound turned off, adjusting the hardware or other application software volume settings will not produce sound. One easy operating method is to use the hardware and ESS AudioRack volume controls to set an upper limit on sound level and then make fine adjustments with other application software.

 **CAUTION**

The ESS AudioRack volume setting sets the maximum volume level of the hardware volume control knob.

 **POINT**

Windows NT 4.0 does not support the ESS AudioRack application.

 **CAUTION**

If you use a speakerphone function, be sure that the microphone setting in the ESS AudioRack (recorder portion) is disabled.

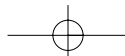
**BATTERIES**

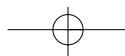
The Lithium ion batteries are rechargeable with an operating time of up to three (3) hours depending on active power management features and user activity levels. Your notebook can be operated on the primary Lithium ion battery alone or in a dual battery configuration with an optional second Lithium ion battery. A built-in bridge battery allows a charged Lithium ion battery to be exchanged for a discharged one by “warm-swapping”. To warm-swap, have a charged battery ready, put your notebook in Suspend mode, remove the low battery and quickly insert a charged battery.

The Lithium ion battery operating time may become shorter than the reference value if it is used under the following conditions:

- When used at temperatures that exceed a low of 5°C or a high of 35°C. High temperatures not only reduce charging efficiency, but can also cause battery deterioration. (The Charging icon on the Status Indicator panel will flash when you try to charge a battery that is outside its operating temperature range.)
- The battery charging capacity is reduced as the battery ages. If your battery is running low quickly, you should replace it with a new one.
- When using a high current device such as a modem, a LAN card, a CD-ROM drive, or the hard drive frequently.

Using the AC adapter will conserve your battery when using a high current device such as a modem, a LAN card, a CD-ROM drive, or the hard drive frequently. The Bridge battery can only be recharged by using the AC adapter.





**Using Your LifeBook E Series**

 **CAUTION**

Actual battery life will vary based on screen brightness, applications, features, power management settings, battery condition, and other customer preferences. CD-ROM drive or hard drive usage may also have a significant impact on battery life.

 **CAUTION**

Do not leave a faulty battery in your notebook. It might damage your AC adapter, optional auto/airline adapter, another battery, or your notebook itself. It may also prevent operation of your notebook by draining all available current into the bad battery.

 **CAUTION**

Under federal, state or local law it may be illegal to dispose of batteries by putting them in the trash. Please take care of our environment and dispose of batteries properly. Check with your local government authority for details regarding recycling or disposing of old batteries. If you cannot find this information elsewhere, contact your support representative at 1-800-8FUJITSU (1-800-838-5487).

**Bridge Battery**

The bridge battery is a NiCd battery that is built-in your notebook and is constantly being recharged under AC Power. A bridge battery allows a charged Lithium ion battery to be exchanged for a discharged one by “warm-swapping”.

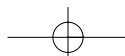
To warm-swap have a charged battery ready, put your notebook in Suspend mode, remove the low battery and quickly insert a charged battery. The bridge battery capacity is not large, about 3 minutes, and can vary with the condition of your notebook.

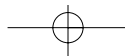
 **CAUTION**

Data may be lost and/or system errors introduced if the warm swap is not performed quickly.

 **CAUTION**

The bridge battery can not support an operating notebook. The notebook must be in Suspend mode.





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#### Shorted Batteries

If your Status Indicator panel shows a shorted battery, check the installation for that battery by removing and re-installing it. If it still shows that it is shorted, replace it with a new battery.



#### CAUTION

A shorted battery is damaged and must be replaced so that it does not damage anything else.

#### Recharging the Batteries

If you want to check the condition of either the primary Lithium ion battery or an optional second Lithium ion battery, check the Battery Level indicators located on the Status Indicator panel. These indicators change as the battery levels change. Battery 1 is a Lithium ion battery which is installed in Multi-function Bay 1 and Battery 2 is a Lithium ion battery which is installed in Multi-function Bay 2. (Figure 3-2 on page 29.)

The Lithium ion batteries are recharged internally using the AC adapter or auto/airline adapter. To recharge the batteries:

- Make sure the battery to be charged is installed in either Multi-function bay of your notebook and connect the AC or auto/airline adapter.
- Make sure that the Battery Charging indicator to the left of the Battery Level indicator of the battery to be charged is visible on the Status Indicator panel.
- Make sure the percentage charge is shown inside the Battery Level icon. (Figure 3-2 on page 29.)

When two Lithium ion batteries are installed, the charge/discharge rate of the primary and optional second Lithium ion batteries are the same, as they are connected in parallel and are both charging and/or discharging at the same time. Since the rates are the same, one may finish charging or discharging before the other if they were not at the same charge level when

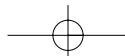
they were installed and/or the AC or auto/airline adapter was connected.

There is no memory effect on the Lithium ion batteries, which means that you do not need to discharge them completely before recharging. A single fully discharged Lithium ion battery will charge in approximately three (3) hours when your notebook is Off or in Suspend mode. The charging time from fully discharged for two Lithium ion batteries together, is approximately five (5) hours when your notebook is Off or in Suspend mode. Of course partially charged batteries will not take as long to charge. The charge times will be significantly longer if your notebook is in use while the batteries are charging (from approximately nine (9) hours for one battery to approximately 15 hours for two batteries with normal operating levels).



#### CAUTION

Using heavy current devices such as LAN cards or frequent CD-ROM accesses may prevent charging completely.





### Low Battery State

When the battery is running low, your notebook beeps about every 15 seconds and the Battery Level indicator(s) flash. If you do not respond to the low battery alarm, the batteries will continue to discharge until they are too low to operate. When this happens there will be a multiple beep alarm, the Battery Level indicator will show dead battery, and your notebook will go into Suspend mode to try and protect your data as long as possible. Your power management settings do not affect what happens at the dead battery alarm level. Your notebook will go to Suspend mode.



#### CAUTION

You may not be able to hear the audio alarms if the volume control is set too low or is turned off by either hardware or software but you will still be able to see the Battery Level indicator(s) flash.

When the low battery alarm occurs you need to save all your active data and put your notebook into Suspend mode until you can provide a new power source. You should provide this power as soon as possible. The new power source can be a charged battery or a power adapter, either AC or auto/airline.



#### CAUTION

When you are in Suspend mode there must always be at least one power source active. If you turn off the power with the power switch, or remove all power sources, battery, AC adapter or auto/airline adapter, while your notebook is in Suspend mode any data which has not been saved to the hard drive will be lost.

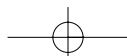


#### CAUTION

There is no guarantee that data will not be lost once your notebook enters the Dead Battery Suspend mode.

Once your notebook goes into Dead Battery Suspend mode you will be unable to resume operation until you provide a source of power either from an AC adapter, an optional auto/airline adapter, or a charged battery. Dead Battery Suspend mode shows on the Status indicator just like the normal Suspend mode. Once you have provided power, you will need to press the Suspend/Resume button to resume operation. In the Dead Battery Suspend mode, your data can be maintained for some time, but if a power source is not provided promptly, the Power indicator will stop flashing and go out, and you will have lost the data that was not stored.

Once you provide power you can continue to use your notebook while an adapter is charging the battery, but the battery trickle charges under these conditions. If you want to charge the battery more quickly, put your notebook into Suspend mode, or turn off your notebook while the adapter is charging the battery. (See *Power Off* on pages 24-25 for shutdown procedures.)





Section Three

**FLOPPY DISK DRIVE**

The modular floppy disk drive is a 3.5" drive which can read and write on 1.44MB and 720KB memory capacity floppy disks. Floppy disk format is controlled from your operating system. (See your software documentation for more information.) The modular floppy disk drive can be used in Multi-function Bay 1, externally with the FDD adapter, or you can use an optional external floppy disk drive. The system will treat any floppy disk drive in exactly the same way regardless of where it is installed.

(For floppy disk drive installation and removal instructions see Multi-function Bays on pages 130-131 and External Installation of a Floppy Disk Drive on page 140.) When your system boots it will always look first for a floppy disk drive in a Multi-function Bay 1, and then look at the external floppy disk drive port.

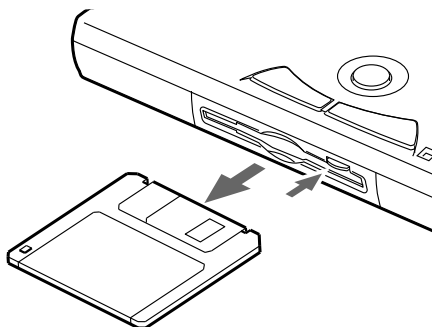


Figure 3-10 Loading/Ejecting a Floppy Disk



**CAUTION**

To get your system to recognize a newly installed floppy disk drive you must restart your notebook.

**Loading a Floppy Disk**

To load, insert a floppy disk into the floppy disk drive, shutter side first and label up, until the Eject button, above the floppy disk drive opening, pops out. (Figure 3-10.)



**POINT**

When there is no floppy disk in the drive, the Eject button is flush with the front of your notebook.

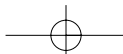
**Ejecting a Floppy Disk**

To eject a disk, check that the Floppy Disk Drive Access indicator is Off, (see pages 28 and 31) and press the Eject button. (Figure 3-10.)



**CAUTION**

If you eject the disk while the Floppy Disk Drive Access indicator is On, there is a risk of damaging the data on the disk or the disk drive.



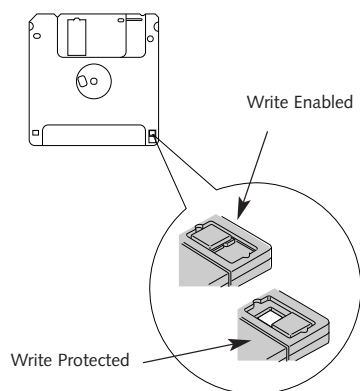
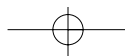


Figure 3-11 Floppy Disk Write Protect

### Preparing a Floppy Disk for Use

Before you can use a new floppy disk, you need to prepare it so your notebook knows where to store information. This preparation is called formatting or initializing a disk. You need to format new 3.5" floppy disks, unless you purchase preformatted disks. You will use your

notebook's operating system software to format a floppy disk. Please refer to the operating system manual for step-by-step instructions.

To prevent data stored on a floppy disk from being erased, slide the write protect tab on the floppy disk to open up the small hole. This makes the disk write protected. When you want to write data to that disk, slide the write protect tab the other way to close the small hole.



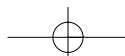
### CAUTION

Formatting a previously used floppy disk is an effective method of clearing a disk as long as you realize that ALL the information on the disk will be erased.

### Care of Floppy Disk Drives and Disks

- Avoid storing the floppy disk drive and disks in extremely hot and cold locations, or in locations subject to severe temperature changes.

- Keep the floppy disk drive and disks out of direct sunlight and away from heating equipment.
- Avoid storing the floppy disk drive in locations subject to shock and vibration.
- Avoid using the floppy disk drive and disks in damp and dusty locations.
- Never use the floppy disk drive with any liquid, metal, or other foreign matter inside the floppy disk drive or disk.
- Never store a floppy disk near a magnet or magnetic field.
- To clean, wipe the floppy disk drive clean with a dry soft cloth or with a soft cloth dampened with water or a solution of neutral detergent. Never use benzene, paint thinner, or other volatile material.
- Never disassemble or dismantle your floppy disk drive.





Section Three

### SUPERDISK™ 120 DRIVE

The modular SuperDisk drive is a floppy disk drive that can read and write both 120MB Super floppy disks and standard 1.44MB and 720KB floppy disks. It takes the place of a floppy drive and offers greater removable media storage capabilities.

The SuperDisk drive works very much like a regular floppy disk drive in your LifeBook E Series. Please refer to the Floppy Disk Drive section for usage and care information.

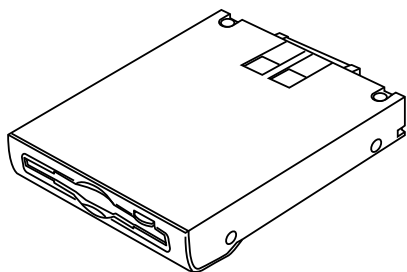


Figure 3-12 SuperDisk Drive

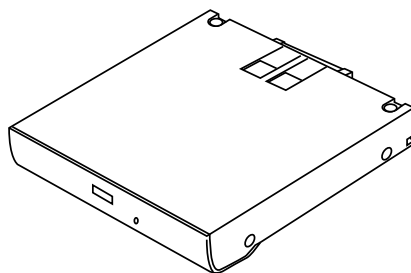


Figure 3-13 CD-ROM/DVD Drive

### CD-ROM DRIVE

The modular CD-ROM drive is a 24x maximum reader.

### DVD DRIVE

The modular DVD Drive is a 1.5-speed maximum reader and takes the place of the CD-ROM drive in Multi-Function Bay 2. It works very much like a CD-ROM drive in that it can read CD-ROMs as well as DVDs. It can also play Audio CDs.



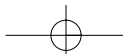
### CAUTION

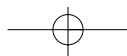
Do not operate your CD-ROM/DVD drive unless your notebook is sitting on a flat surface and the adjustment feet are folded against the bottom of the notebook. Using a CD when the drive is not level may damage the drive or prevent proper operation.



### POINT

DVD playback is not supported in Windows NT 4.0.





Using Your LifeBook E Series

**Loading a CD or DVD**

- Make sure that the angle adjustment feet on the bottom of the notebook are folded against the bottom of the notebook.
- Make sure there is power to your notebook.
- Push, gently but firmly, and release the eject button on the front of the drive to open the holder tray, the tray will come out a short distance.
- Gently pull the tray out until a CD-ROM/DVD can be easily placed in the tray.
- If there was a protective sheet in the tray when it was shipped, make sure it has been removed.
- Place the CD/DVD into the tray, label side up, with the hole in the center of the CD/DVD snapped onto the raised circle in the center of the tray.
- Close the tray.
- After the CD/DVD is loaded, it will take a short time for your notebook to recognize it.

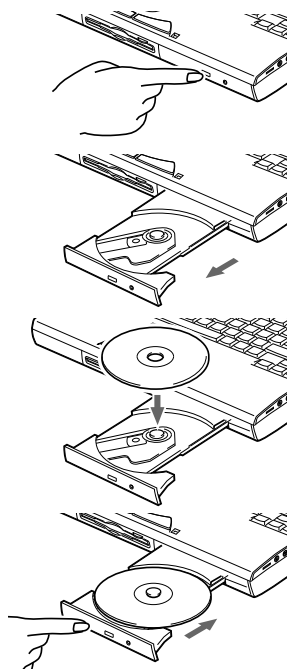
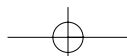


Figure 3-14 Loading the CD-ROM/DVD Tray



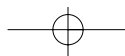
**POINT**

If you have disabled your CD automatic insertion function you will have to start the CD from your desktop, as your notebook will not automatically recognize that the CD has been loaded.

**Care of CD and DVDs**

CD/DVDs are precision devices and will function reliably if given reasonable care.

- Always store your CD-ROM in its case when it is not in use.
- When removing the CD-ROM from its case, press down on the holder's center while lifting out the CD-ROM by its edges.
- Always handle a CD-ROM by the edges and avoid touching the surface.
- Avoid storing any CD-ROM in extreme temperatures.
- Do not bend CD-ROMs or set heavy objects on them.




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 Section Three
 

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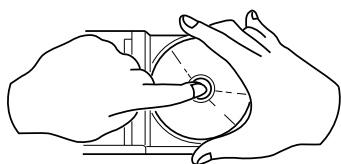


Figure 3-15 CD-ROM Handling

- Never write on the label surface with a ball point pen, pencil or similar device.
- If a CD-ROM is subjected to a sudden change in temperature, cold to warm condensation may form on the surface. Wipe the moisture off with a clean, soft, lint free cloth and let it dry at room temperature. **DO NOT** use a hair dryer or heater to dry a CD-ROM.
- If a CD-ROM is dirty, use only a CD-ROM cleaner or wipe it with a clean, soft, lint free cloth starting from the inner edge and wiping to the outer edge.

### HARD DRIVE

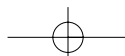
The internal hard drive capacity is dependent on which model you are using. See Appendix A (pages 182–186) or your packing label for model information. If you are using the optional second hard drive for the first time since you installed it, you can get your notebook to recognize it by opening the Windows Control Panel and opening Add New Hardware which will step you through the process of having Windows look for your newly installed device.

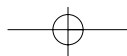
### Formatting the Hard Drive

The hard drive inside your notebook is formatted (initialized) at the factory. You do not need to format it under normal circumstances. If you purchase an optional second hard drive you will need to Fdisk and format it before you use it the first time. Check your operating system documentation for information on initializing a hard drive.

### CAUTION

If you reformat the internal hard drive ALL data including the operating system, applications software and data will be erased. Unless data is copied to floppy disks or other data storage media it will be permanently lost. All software will be need to be re-installed and data files restored from your back-up disks. See the operating system manual for more information on backing-up your data files. The factory installed software, including the operating system, can be restored from the Recovery CD-ROM which came in the accessories box when you purchased your notebook. (See *Restoring Your Pre-installed Software from CD-ROM* on page 174 for more information.) Any application software which you have purchased and installed will have to be re-installed from the original source. When doing a recovery remember that you must allocate space





for the Save-to-Disk function if you have it enabled. (See *Setting Up Your Save-to-Disk File Allocation on pages 124-125 for more information.*)

### INTERNAL MODEM

If your LifeBook is configured with an internal modem daughter card in the Communications port, it is a K56Flex fax/data/voice modem with v.90 support. The voice functions of the modem include speakerphone and answering machine capabilities. The answering machine capabilities require the use of third party software not included with your notebook.

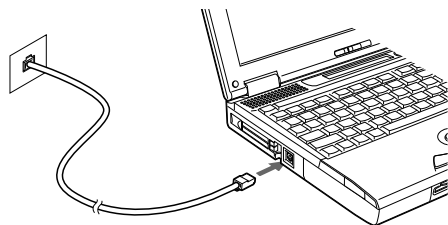


Figure 3-16 Internal Modem or LAN

### INTERNAL LAN

If your LifeBook is configured with an internal LAN daughter card, it is a Fast Ethernet (10/100 Base-T/Tx) network interface with an RJ-45 connector. Your internal LAN card will need to be configured for use in the Windows network control panel. Please refer to your systems administrator for information on your particular network configuration.

#### POINT

Your LifeBook E Series may be configured with no device in the Communications port if you specified as such in your built-to-order configuration.

#### POINT

The internal modems on all Fujitsu notebooks from Fujitsu PC Corporation are not qualified for use with telephone systems outside the United States and Canada and may not operate in other countries.

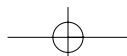
### INFRARED PORT

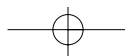
Infrared IrDA-compatible communication is a function that allows for wireless data transfer between your notebook and other IrDA-compatible devices. Examples of IrDA-compatible devices are another computer or a printer. When carrying out this kind of communication, both devices must be set so their infrared ports are directly facing each other without obstructions. A distance of 6" to 36" between the device ports is ideal. Dirt or scratches on the lens of your notebook or the other device will degrade performance. This is especially true for Fast IrDA applications such as a transfer to an Ethernet.

If you are using Windows 98, you can use the Infrared Recipient program for infrared file transfers. LapLink software can also be used for infrared file transfers in Windows 95 and Windows 98. See your online help menus for more information.

#### POINT

Windows NT 4.0 does not support the infrared port on your LifeBook E Series.





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 **CAUTION**

Be careful not to scratch the infrared port lens. Scratches, dirt or other surface marks can effect operation.

The following conditions may interfere with infrared communications:

- When the infrared communication ports are not directly facing each other, or some obstacle is between them.
- When the infrared communication ports are too far apart.
- When a television or radio remote control unit, or a wireless headphone is being used nearby.
- When a strong light such as direct sunlight, fluorescent light, or incandescent light shines on the port.

 **CAUTION**

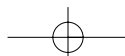
Do not move either device during communication as it may interrupt data transmission.

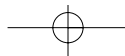
**POWER MANAGEMENT**

Your LifeBook E Series has many features for conserving battery power. Some power savings features are automatic and have no user control, such as those for the internal modem, while others depend on the parameters you set to best suit your operating conditions. Other power saving features turn the display brightness down, limit the use of high power devices, activate an appropriate power savings

profile, and put your notebook in Suspend mode when not actually performing an operation. As with all mobile, battery-powered computers, there is a trade-off between performance and power savings.

Internal power management for your notebook may be controlled from settings made in the BIOS setup utility prebundled power management application, or from settings made in your operating system.





### Using Your LifeBook E Series

#### Using the Suspend/Resume Button

When your notebook is active, the Suspend/Resume button, (Figure 1-7 on page 6), can be used to manually put your notebook into Suspend mode. The Suspend/Resume button is located next to the Status Indicator panel above the keyboard of your notebook. (Figure 3-17.) Push the Suspend/Resume button, when your notebook is active but no Access indicators are on and release the button (immediately). You will hear two short beeps and then your system will enter suspend mode.

If your notebook is suspended, pushing the Suspend/Resume button will return your notebook to active operation at the point where it went into suspension. You can tell whether or not your system is in Suspend mode by looking at the Power indicator. (See pages 28-29.) If it is visible and not flashing, your notebook is fully operational. If it is visible and flashing, your notebook is in Suspend mode. If it is not visible, the power is Off or your notebook is in Save-to-Disk mode. When you receive your LifeBook E Series it will be set to the default, which is Suspend mode.

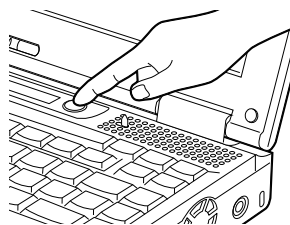


Figure 3-17 Suspend/Resume Button



#### CAUTION

Loss of all power sources, including batteries, while in the Suspend mode will cause lost data and inability to return to operation with the Suspend/Resume button.

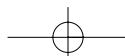
#### Suspend Mode

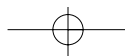
The Suspend mode, or Standby mode in Windows 98, saves the contents of your notebook's system memory during periods of inactivity by maintaining power to critical parts while turning off the CPU, the display, the hard

drive and all of the other internal components except those necessary to maintain system memory, recognize the Suspend/Resume button and restart. Your notebook can be put in Suspend mode by:

- Pressing the Suspend/Resume button when your system is in the On state.
- Selecting Suspend from the Windows Shut Down Menu (Windows 95 and Windows NT).
- Selecting Standby from the Windows Shut Down menu (Windows 98).
- Selecting System Suspend from the PowerPanel toolbar menu (Windows 95 and Windows NT).
- Timing out from lack of activity.
- Battery level reaching the Dead Battery Warning condition.

Your notebook's RAM typically stores the file(s) on which you are working, the open application(s) and any other data required to support






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### Section Three

the operation(s) in progress. When you resume operation from Suspend mode, it returns to the point in the operation where it left off. You must use the Suspend/Resume button to resume operation, and there must be an adequate power source available, or your notebook will not resume.

#### Using the Suspend/Resume Button to Perform Save-to-Disk

When your notebook is active, the Suspend/Resume button, (Figure 3-17), can be used to manually put your notebook into Save-To-Disk mode. However, you must first enable Save-to-Disk mode one of the following ways:

- For Windows 98 you must enable Save-to-Disk mode in the BIOS Setup utility Power menu. (See page 56 for more information on the Power menu of the BIOS Setup utility.)
- For Windows 95 and Windows NT you can simply click the Save-to-Disk activation button on the PowerPanel toolbar menu. (See page 56 for more information on PowerPanel.)

Push the Suspend/Resume button, when your notebook is active but no Access indicators are on and release the button (immediately). You will hear two short beeps and then your system will flash the Save-to-Disk screen, and enter Save-to-Disk mode.

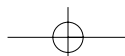
If your notebook is in Save-to-Disk mode, pushing the Suspend/Resume button will return your notebook to active operation at the point where it went into Save-to-Disk mode. You can tell whether or not your system is in Save-to-Disk mode by looking at the Power indicator. (See pages 28-29.) If it is visible and not flashing, your notebook is fully operational. If it is visible and flashing, your notebook is in Suspend mode. If it is not visible, the power is Off or your notebook is in Save-to-Disk mode.

#### Save-to-Disk Mode

The Save-to-Disk function, saves the contents of your notebook's system memory to the hard drive and shuts down whenever you:

- Press the Suspend/Resume button until acknowledged with Save-to-Disk mode enabled from the Power menu of the BIOS setup utility.
- Select Suspend from the Windows Shut Down menu with Save-to-Disk mode enabled by the BIOS setup utility (Windows 95 and Windows NT only.)
- Select Save-to-Disk activation from the PowerPanel toolbar or menu (Windows 95 and Windows NT only.)
- Select Standby from the Windows Shut Down menu with Save-to-Disk enabled by the BIOS Setup Utility (Windows 98 only).
- Time out from lack of activity with Save-To-Disk mode enabled from the Power Savings menu of the BIOS setup utility.

Your notebook's system memory typically stores the file(s) on which you are working, the open application(s) and any other data required to support the operation(s) in progress. When the





**Using Your LifeBook E Series**

Save-to-Disk function is activated your notebook saves the contents of the system memory to a file on the internal hard drive, and then automatically shuts off power to your notebook. When you resume operation by pressing the Suspend/Resume button, you return to the point in the operation where you left off, before going into Save-to-Disk mode.

 **CAUTION**

Be sure you know which settings are active for the Suspend/Resume button before you use it; misuse can result in data loss. (See *the Power Menu of the BIOS setup utility, pages 107-109, for more information.*)

 **POINT**

Disabling the Suspend/Resume button prevents it from being used to put your notebook in Suspend or Save-to-Disk mode. The resume function of the button cannot be disabled. (See *the Power Savings Menu of the BIOS setup utility, pages 107-109, for more information.*)

 **CAUTION**

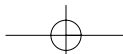
The Suspend or Save-to-Disk mode should not be used with certain PC Cards. Check your PC Card documentation for more information.

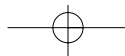
 **POINT**

If your notebook is active when you enter the Suspend or Save-to-Disk mode, changes to open files are not lost. The files are left open and memory is kept active during Suspend mode or the memory is transferred to the internal hard drive during Save-to-Disk mode.

 **CAUTION**

If you are running your notebook on battery power, be aware that the battery continues to discharge while your notebook is in suspend mode, though not as fast as when fully operational. With a fully charged internal Lithium ion battery the suspend mode will maintain your status for 24 hours or more.





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### Section Three

 **POINT**

When PC Cards or external devices are in use, Save-to-Disk mode cannot return to the exact state prior to suspension, because all of the peripheral devices will be re-initialized when the system restarts.

 **POINT**

The main advantage of using the Save-to-Disk function is that power is not required to maintain your data. This is particularly important if you will be leaving your notebook in a suspended state for a prolonged period of time. The drawback of using Save-to-Disk mode is that it lengthens the power down and power up sequences and resets peripheral devices.

 **POINT**

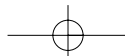
Save-to-Disk mode requires allocating a significant amount of hard drive capacity for saving all system memory, which reduces your usable disk space. When you purchase your notebook it will have space allocated for the memory installed. If you upgrade the original system by adding a memory upgrade module without changing the size of your Save-to-Disk allocation you will get an error message when you try to activate Save-to-Disk mode and it will not work. Use the PHDISK Utility to increase the size of the Save-to-Disk file, SAVE2DSK.BIN. (Refer to *Setting Up Your Save-to-Disk File Allocation* on pages 124-125 for more information.) If you need help contact your support representative for recommendations.

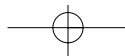
**Idle Mode**

Idle mode is one of the power management parameters. When Idle mode is enabled the CPU is put into low-speed operation when there is no activity (keystroke, pointer action, sound generation, video display change, modem transmission or reception, etc.) on your notebook for 16 seconds. Any activity will cause the normal operation to restart automatically. This feature is independent of the Suspend/Resume modes. This parameter is enabled and disabled in the BIOS setup utility. (See page 83.)

**Standby Mode**

Standby mode is one of the power management parameters. When Standby mode is activated, your notebook puts the CPU in low-speed operation, shuts off the display and turns off the hard drive when there is no activity (keystroke, pointer action, sound generation, video display change, modem transmission or reception, etc.) on your notebook for the user selected time-out period. (See page 83.) Any activity will cause your notebook to return to normal





operation automatically. This feature is independent of the Suspend/Resume button. This parameter is enabled and disabled in the BIOS setup utility.

#### POINT

The Idle mode and Standby mode features described above are only available in Windows 95 and Windows NT. Windows 98 has its own integrated power management features that include the functionality of those listed above.

#### Video Timeout

The Video Timeout is one of the power management parameters which saves power by turning off the display if there is no keyboard or pointer activity for the user selected timeout period. Any keyboard or pointer activity will cause the display to restart automatically. This feature is independent of the Suspend/Resume button. This parameter is enabled and disabled in the BIOS setup utility. (See page 108.)

#### Hard Disk Timeout

The Hard Disk Timeout is one of the power management parameters which saves power by turning off the hard drive if there is no hard drive access for the timeout period which has been set in the BIOS setup utility. (See page 108.) Any attempt to access the hard drive will cause the hard drive to restart automatically. This feature is independent of the Suspend/Resume button. This parameter is enabled and disabled in the BIOS setup utility.

#### Windows Power Management Control Panels

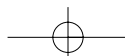
The Power Management icon in the Windows 98 Control Panel allows you to configure some of the power management settings that are normally controlled by the BIOS. For instance, you can set timeout values in the Power Management Control Panel for turning off the display and for turning off hard disks. You can specify these timeout values based on whether you are running on batteries or AC.

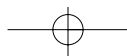
The Power icon in the Windows 95 Control Panel will allow you to set timeout values for the hard drive only.

#### ACPI and Windows 98

Short for Advanced Configuration & Power Interface, a power management specification developed by Intel, Microsoft, and Toshiba. ACPI, which is part of the Windows 98 operating system, enables the operating system to control the amount of power given to each device attached to the computer. With ACPI, the operating system can turn off peripheral devices, such as CD-ROM players, when they are not in use.

Due to ongoing industry development of ACPI technology, we have configured your LifeBook E Series notebook to APM (Advanced Power Management) mode.





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### Section Three

#### PRE-INSTALLED SOFTWARE

Your LifeBook E Series comes with pre-installed software for playing audio and video files of various formats. In addition there is file transfer software, virus protection software, and Power Management software.

All of the pre-installed software can be accessed from the Program folder of the Windows Start menu. If you aren't sure what software is pre-installed check the Program folder. If you need assistance with an individual application use their online help.

#### SoftPEG MPEG File Player

The MPEG file player displays a screen to find the file which you wish to play. You can setup the list to select from limited to particular types of files or display all files. Opening the desired file will play it. Online help screens are available for more information.

#### SoftPEG Video CD Player

This control resembles a VCR player front panel and is operated in the same way. When you point to a button, a small explanation of the use of the button will appear. When you left-click on the button it will activate. Online help screens are available for more information. (SoftPEG is pre-installed on Windows 95 and Windows 98 systems only.)

#### PC Doctor

PC Doctor by Watergate Software is primarily for use by your support representative when helping you with trouble shooting.



#### POINT

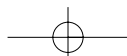
You can modify the set up of certain audio parameters in the BIOS setup utility, Advanced Menu – Multimedia Device Configuration Submenu. (See page 84.)

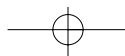
#### ESS AudioRack™

The control of the AudioRack player software (AudioRack32) resembles the front panels of a rack of stereo equipment and is operated in much the same way. There is also AudioRack recorder software (AudioRecorder). Online help screens are accessible from the AudioDrive panel of AudioRack32, click on the Help button for more information. In the AudioRecorder dialog box, click on Help in the top taskbar.

In AudioRack32 the AudioDrive panel lets you turn on and off the available functions. When you left-click on a button it will activate. When a function is active, its button on the AudioDrive shows a green dot and its control panel is in the equipment rack. When it is off the dot on the button is black and the control panel is not in the rack. You activate a slider or knob on a control panel by dragging it. The functions available are DAT (Digital Audio Tape player), 3D (3D-Stereo sound control), MIDI, Mixer and CD (Audio CD player).

ESS AudioRack is pre-installed on Windows 95 and Windows 98 systems only.





**POINT**

For maximum frequency response and bandwidth, leave the graphic equalizer levels at the mid-point (zero level). To customize the frequency response to your personal taste, adjust accordingly.



**CAUTION**

The ESS AudioRack volume settings set the maximum volume level of the hardware volume control knob for that function.



**CAUTION**

If you use a speakerphone function, be sure that the microphone setting in the ESS AudioRack is disabled.

**LapLink**

LapLink, by Traveling Software, file transfer software provides direct file transfers to other computers. Data transfers can be via internal modem, a PC Card modem, the infrared port, a serial cable, or a parallel cable (cables are not included). See the LapLink online help screens for operating instructions.

LapLink is pre-installed on Windows 95 and Windows 98 systems only.

**Card Executive**

Card Executive, by Phoenix Technologies allows you to configure PCMCIA cards in Windows NT 4.0. Consult the on-line documentation for information on how to use this program.

Card Executive is pre-installed on Windows NT 4.0 systems only.

**McAfee VirusScan**

Running your McAfee VirusScan program after loading data or programs from a floppy disk, CD-ROM, modem data transfer, or infrared data transfer is a precaution that will protect

the data on your hard drive from contamination or destruction. See your VirusScan online help screens or online manual for information on how and when to run this program.

**PMSet 98**

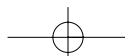
PMSet 98 is a power management application which allows you to monitor battery status. See your online help screens for information on how to use the program.

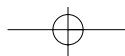
PMSet 98 is pre-installed on Windows 98 systems only.



**POINT**

Due to the fact that the LifeBook E Series does not support LCD Backlighting control and CPU Clock control, these options are not selectable in the Power Control tab of PMSet98.






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### Section Three

#### PowerPanel

PowerPanel by Phoenix Technologies provides Windows desktop access to a comprehensive combination of power management settings without entering the BIOS setup utility.

PowerPanel is pre-installed on Windows 95 and Windows NT systems only.

The PowerPanel icon looks like an atom with its cloud of electrons. This icon will open the PowerPanel menu. You can view the menu in icon format along the edge of your desktop by moving the cursor against the edge where you have chosen to keep your PowerPanel toolbar and letting it sit there until the toolbar appears. (The default position for the toolbar is the left side of the screen, but you can move it to whichever edge you like by dragging.)

The power management toolbar has ten power profile choices and six activation choices. When you switch to AC powered operation the PowerPanel toolbar will automatically change to indicate AC power operation and will show the AC Power profile as active.

The profiles are groups of system settings designed to fit power operation to specific user operating conditions. The activations are short-cut ways to turn on specific power management features of your notebook. Some of the profiles can be edited and saved from the PowerPanel application, some can be edited and saved from the BIOS setup utility and only viewed from PowerPanel, and some are factory set and can only be viewed from either PowerPanel or the BIOS setup utility.

The profile choices are:

(This group is factory set.)

- Maximum Battery Life.
- Maximum Performance.
- Power Management Off.

(This one is set only from the BIOS setup utility.)

- Custom Settings.

(This group is set from PowerPanel.)

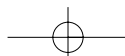
- Presentation.

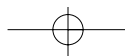
- Green PC.
- AC Profile.
- Word Processing.
- Communication.
- Games.

The activation choices are:

- System Suspend.
- System Save-to-Disk.
- System Standby.
- Hard Disk Standby.
- Modem Power Toggle.
- Video Standby.

The factory set Maximum Power Savings profile is designed around trade offs of performance and battery life. For true maximum battery life keep the display and volume levels as low as possible and use the custom settings recommended in Section Three on *page 107*.





 **POINT**

The AC Power profile is activated automatically when a power adapter is being used, unless it is overridden by another selection made after the adapter became active. It can be reactivated by selecting it or it can be activated by selection, even when operating only on battery power.

**POWERPANEL ONLINE HELP**

To access help with your power management settings, move your cursor to the PowerPanel toolbar and right click. (See *Clicking on page 33.*) From the menu that appears select **PowerPanel Help Topics**.

**POWERPANEL CUSTOMIZATION**

To modify your PowerPanel toolbar or create a custom toolbar, move your cursor to the PowerPanel toolbar and right click. From the

menu that appears select **Customize**. Within the **Customize** dialog box you can choose to have the toolbar display at all times or to use your custom toolbar. You can also select from the same menu to **Hide the toolbar**. If you hide the toolbar you will have to double click on the edge where the toolbar was located to display it.

If you select **Exit** from the PowerPanel menu you will turn off the PowerPanel completely. To turn it back on, go to the Program folder of the Start menu, select **PowerPanel** and click on it.

**MAXIMUM BATTERY LIFE PROFILE**

The Maximum Battery Life profile is a factory installed combination of timeouts and other power savings parameters read directly from the BIOS, and chosen as the settings that will

produce the longest possible battery life.

**MAXIMUM PERFORMANCE PROFILE**

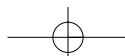
The Maximum Performance profile is a factory installed combination of timeouts and other power savings parameters read directly from the BIOS and chosen as the settings that will produce superior performance with reasonable battery life.

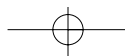
**POWER MANAGEMENT OFF**

Turns off power management control from Windows and PowerPanel and turns it over directly to the BIOS.

**CUSTOM SETTINGS PROFILE**

The Custom Settings profile has those power saving parameters that you set in the BIOS setup utility using the Power Savings Menu **Customize** feature. (See *Power Savings on page 107.*)





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Section Three

 **POINT**

The Maximum Power Savings, Maximum Performance, and Power Management Off profiles are read only. The Custom Settings Profile can only be changed from the BIOS setup Utility.

**PRESENTATION PROFILE**

The Presentation profile is the same combination of timeouts and other power savings parameters as the Maximum Battery Life profile except that the display is never turned off. (This profile was designed to enhance the use of your notebook for slide show style presentations.)

**GREEN PC PROFILE**

The Green PC profile has the Video timeout and the Hard Drive timeout enabled but no standby or suspension modes enabled.

**AC PROFILE**

The AC power profile has all timeouts disabled and no other power management features enabled. This profile is activated automatically by plugging in a power adapter.

**WORD PROCESSING PROFILE**

The Word Processing profile is a factory installed combination of timeouts and other power savings parameters chosen as the settings that will produce superior performance with reasonable battery life when using your notebook for doing word processing.

**COMMUNICATION PROFILE**

The Communication profile is a factory installed combination of timeouts and other power savings parameters chosen as the settings that will produce superior performance with reasonable battery life when using your notebook with the modem active such as during Internet, fax or speakerphone activities.

**GAMES PROFILE**

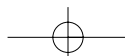
The Games profile is a factory installed combination of timeouts and other power savings parameters chosen as the settings that will produce superior performance with reasonable battery life when playing games on your notebook.

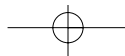
**SYSTEM SUSPEND ACTIVATION**

Clicking on the Suspend button or selecting System Suspend on the PowerPanel menu will put your notebook in Suspend mode. Pressing the Suspend/Resume button turns the power back on and lets you begin where you left off. (See page 49.)

**SYSTEM SAVE-TO-DISK ACTIVATION**

Clicking on the Save-to-Disk button or selecting System Save to Disk on the PowerPanel menu will put your notebook in Save-to-Disk mode. Your notebook will be left in the Windows 95 pseudo-off state. If the power switch is not turned off your notebook can be





restarted by pressing the Suspend/Resume button which will cause the system memory to reload from the hard drive and let you begin where you left off. (See Figure 3-17 on page 49, and Save-to-Disk Mode on pages 50-51.)

#### SYSTEM STANDBY ACTIVATION

Clicking on the System Standby button or selecting System Standby on the PowerPanel menu will put your notebook in Standby mode. You can return your notebook to normal operation by performing any activity such as pressing a key or touching the pointing device.

#### HARD DISK STANDBY ACTIVATION

Clicking on the Hard Disk Standby button or selecting Hard Disk Standby on the PowerPanel menu will turn off your internal hard drive. You can return your notebook to normal operation by performing any hard drive operation.

#### MODEM POWER TOGGLE

Clicking on the Modem Power Toggle button or selecting Modem Power Toggle on

the PowerPanel menu will turn the power to your modem on or off. To turn it to the other condition select Modem Power Toggle again.

#### VIDEO STANDBY ACTIVATION

Clicking on the Video Standby button or selecting Video Standby on the PowerPanel menu turns off the power to the display. You can return your notebook to normal operation by performing any activity such as pressing a key or touching the ErgoTrac pointing device.

#### AGATÉ TIOMAN HOT-SWAP

Tioman allows you to hot-swap your LifeBook E Series peripheral devices in the Multi-function Bays of your notebook, by turning off the IDE interface to the bays to allow safe removal of devices while the system is active and turning the IDE interface on again once new devices have been inserted properly. *Note: Tioman is pre-installed on Windows 95 and Windows 98 systems only.*

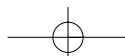
Tioman supports the hot-swapping of the following devices in...

#### Multi-function Bay 1

- 3.5" floppy disk drive
- Lithium ion battery
- Optional SuperDisk drive

#### Multi-function Bay 2

- 24x maximum CD-ROM drive
- Optional 1.5-speed maximum DVD-ROM drive
- Lithium ion battery w/ Adapter
- Weight Saver
- Optional Second 5.0GB hard drive
- Optional Iomega Zip 100 drive





Section Three

**General Guidelines for Using Tioman**

Tioman allows you to exchange removable devices without suspending the system by turning off the IDE interface to both Multi-function Bays simultaneously. At this point the system is still active but in a safe mode where you may swap a single device out of either Multi-function Bay, swap devices in both Multi-function Bays or do nothing. The software will remove all drive letters from 'My Computer' and 'Windows Explorer' (Consult Windows' on-line help menus for information about 'My Computer' and 'Windows Explorer') associated with the devices you removed and replace the drive letters in 'My Computer' and 'Windows Explorer' with designators for the newly inserted devices. The 'Taskbar Icon' and 'ToolTip Balloon' will be updated to reflect the current devices inserted in the bays.

*Note: The information in this section provides a general description of how the Tioman software functions. For specific instructions on hot-swapping devices see the section 'Removing and Inserting Devices'.*

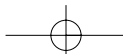
**Tioman Taskbar Icon**

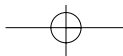
When your system is running in Windows you will notice that small bay icons are contained in the 'System Tray' in the lower right hand corner of the Windows desktop. The left icon corresponds to Multi-function Bay 1 and the right icon to Multi-function Bay 2. These taskbar icons provide the quickest way to hot-swap your notebook devices, (See the next section 'Removing and Inserting Devices' for specific details) as well as acting as visual cues for the current inserted devices. Hover over either icon with the pointing device cursor and the 'ToolTip Balloon' will display the name of the inserted device. Right-click on either icon to display a menu which offers choices for swapping devices, accessing help menus, displaying properties for the inserted device and providing information about the Tioman software.

Use the following table as a guide to identify which 'ToolTip Balloon' names are associated with your Multi-function Bay devices:

| <u>Device</u>     | <u>ToolTip Balloon</u>                             |
|-------------------|--|
| Floppy Disk Drive | Diskette drive in bay                              |
| Battery           | Battery in bay                                     |
| CD-ROM            | CD-ROM drive in bay<br>(Multi-function Bay 2 only) |
| DVD-ROM           | CD-ROM drive in bay<br>(Multi-function Bay 2 only) |
| Weight Saver      | Weight Saver<br>(Multi-function Bay 2 only)        |
| 2nd Hard Drive    | Hard drive in bay<br>(Multi-function Bay 2 only)   |

**POINT**  
 Due to the special design and configuration of the lomega Zip 100 drive the 'ToolTip Balloon' identifier may vary. Please consult the documentation that comes with your Optional lomega Zip 100 drive for specific information on how to properly configure and use the device with Agate Tioman software.




 **POINT**

Due to the special design of the SuperDisk 120 Drive it can be configured as a removable device as well as a standard bootable floppy drive. Because of this unique configuration the 'ToolTip Balloon' identifier for the SuperDisk 120 Drive may vary. Please consult the documentation that comes with your Optional SuperDisk 120 Drive for specific information on how to properly configure and use the device with Agate Tioman software.

**Removing and Inserting Devices**

1. Close any open files on the removable device(s) that you plan to eject from the computer.
2. Right-click on either 'Tioman Taskbar Icon' to display its menu.
3. Select the 'Swap Devices' menu. (You can also select the 'Properties' menu item to bring up the 'Device Bay Properties' window where you can activate the 'Swap Devices'

button from the 'Bay 1' or 'Bay 2' property sheets or you can simply double-click either 'TaskBar Icon' to bring up the 'Device Bay Properties' window)

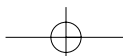
4. The 'Agate Tioman' window will pop up and display the following message: It is now safe to remove and insert devices in either Multi-function Bay. After you have completed device swapping, click the OK button."
5. You can now safely remove both devices from both bays or one device from either bay without damage to the computer or the device(s).
6. References to both devices' drive letters listed under 'My Computer' and 'Windows Explorer' will automatically be removed even if you only removed one device.

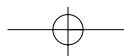
 **POINT**

The A: drive letter will never be removed from the "My Computer" and "Windows

Explorer" folders, because the floppy drive is not considered a removable device by Windows.

7. The 'Taskbar Icons' will display a blue and white bar which indicates that you should remove a device or devices if you haven't already, and the 'ToolTip Balloons' will be changed to read 'Remove xxx in bay' where xxx refers to the device(s) you should be removing. *Note: Tioman does not require that you actually remove a device or devices when the Taskbar Icons are marked with a blue and white bar. If you change your mind you can continue by pressing the 'OK' button.*
8. You can now safely insert new devices into both bays or one device into either bay without damage to the computer or the device(s) as long as you have not pressed the 'OK' button at this point.
9. Press the 'OK' button to continue.





### Section Three

10. The software will automatically detect the new devices and place them online.  
*Note: The software will always re-detect both devices even if you only swapped one device or you decided not to swap any devices at all.*
11. All drive letters associated with both devices will be re-created and listed under 'My Computer' and 'Windows Explorer'.
12. The 'Taskbar Icons' and 'ToolTip Balloons' will be updated to reflect the new devices inserted in the bays.

If you happen to press the 'OK' button before inserting a device into Multi-function Bay 1, Tioman will display the following message:  
No device detected in Bay 1.  
Please insert a device before clicking the Continue button.  
You must insert a device into Multi-function Bay 1 to continue at this point. If you choose to cancel the warning message, Tioman will prompt you to insert a device in Multi-function Bay 1 the next time the 'Swap Devices' command is run.

#### CAUTION

Make sure whenever you use Agate Tiomon Hot-Swap software that you always have at least one battery installed in either Multi-function Bay of your E Series notebook when you are running on battery power alone. If you swap the Primary Battery without having a Secondary Battery installed in the other Multi-function Bay, the system will lose power once the Primary Battery is removed when you are running on battery power alone. It is always safe to hot-swap your E Series Bay Devices when you are powering the system with the AC adapter.

#### CAUTION

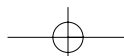
You should never leave your Multi-function Bays empty when the notebook is in operation. The Weight Saver is intended to occupy Multi-function Bay 2 when no other device is needed.

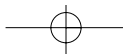
#### CAUTION

Due to the implementation, design and configuration of the Second Hard Drive and SuperDisk 120 Drive they have hot-swap limitations when the system is booted with these devices installed in either Multi-function Bay. Please consult the documentation that comes with your Optional SuperDisk 120 Drive and/or Optional Second 5.0GB hard drive for specific information on how to properly configure and use these devices with Agate Tioman software.

#### POINT

If the CD-ROM, DVD-ROM, 2nd Hard Drive and Zip Drive are swapped into the system simultaneously with the Floppy Disk Drive, the Multi-function Bay 2 devices will always take the D: drive letter designation in 'My Computer' and 'Windows Explorer'.





**Using Your LifeBook E Series**

**POINT**

If the CD-ROM, DVD-ROM, 2nd Hard Drive and Zip Drive are swapped into the system simultaneously with the SuperDisk 120 Drive, the Multi-function Bay 2 devices will take the D: or E: drive letter designation in 'My Computer' and 'Windows Explorer' depending on the order in which you inserted them along with the SuperDisk 120 drive. Please consult the documentation that comes with your Optional SuperDisk 120 Drive for specific information on how to properly configure and use the device with Agate Tioman software.

**Device Bay**

Tioman adds a Control Panel application called 'Device Bay' to your system. You can use this program as an alternative way to hot-swap devices in both bays (See the 'Removing and Inserting Devices' section) and display information about the devices inserted in the bays.

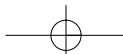
The 'Bay Information' section tells you whether or not hot-swapping is supported with the current device inserted in the bay as well as which IDE channel the device is attached to if any. The 'Drive Information' section gives a descriptive name of the current device inserted in the bay, its device type, state and designated drive letters if any.

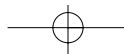
Use the following table as a guide to identify what Drive Information is associated with your Multi-function Bay devices:

| <u>DEVICE</u>     | <u>Descriptive Name</u>  | <u>Device Type</u> | <u>Device State</u> | <u>Drive letters</u> |
|-------------------|--------------------------|--------------------|---------------------|----------------------|
| Floppy Disk Drive | Generic NEC Floppy Disk  | Diskette Drive     | Normal              | A:                   |
| Battery           | Generic Battery          | Battery            | Normal              | None                 |
| CD-ROM            | Matshita UJDA150         | CD-ROM Drive       | Normal              | D: or E:             |
| DVD-ROM           | Matshita DVD-ROM SR-8171 | CD-ROM Drive       | Normal              | D: or E:             |
| 2nd Hard Drive    | Hitachi_DK227A-50        | Hard Drive         | Normal              | D: or E:             |
| Weight Saver      | No device inserted       | None               | None                | None                 |

**POINT**

The Weight Saver device for Multi-function Bay 2 is a plastic mold which occupies the bay when another device is not needed. Because the Weight Saver is not an electronic device, Tioman cannot display a 'Device Type' or 'Device State' for it. Since Tioman cannot tell the difference between a Weight Saver being present or not being present, it indicates 'No device inserted' under Drive Information.





### Section Three

#### POINT

Since the Battery is a type of notebook power adapter it has no drive letter designation.

#### POINT

Due to the special design of the SuperDisk 120 Drive it can be configured as a removable device as well as a standard bootable floppy drive. Because of this unique configuration the 'Device Type' and drive letter designations for the SuperDisk 120 drive are variable. Please consult the documentation that comes with your Optional SuperDisk 120 Drive for specific information on how to properly configure and use the device with Agate Tioman software.

#### POINT

Due to the special design and configuration of the Iomega Zip 100 drive the 'Device Type' may vary. Please consult the documentation that comes with your Optional Iomega Zip 100 drive for specific information on how to properly configure and use the device with Agate Tioman software.

#### Uninstalling Tioman

1. Open the Control Panel folder located under 'My Computer'.
2. Open the 'Add/Remove Programs' icon.
3. Select the 'Agate Tioman for Fujitsu' entry from the list of currently installed programs.
4. Click on the Add/Remove button to launch the uninstall application.
5. The setup wizard will guide you through the rest of the uninstall process.
6. Tioman software will be removed completely, the next time Windows is started.

#### PHOENIX NOTEDOCK FOR WINDOWS NT 4.0

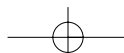
Phoenix NoteDock for NT allows you to hot-dock and hot-swap devices with your LifeBook E Series notebook when using the Windows NT 4.0 operating system.

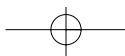
#### DATA SECURITY

Your LifeBook E Series has a built-in hardware control password security feature that allows you to protect the data stored in the notebook from unauthorized access. Your operating system and some applications have software control password security features that allow you to protect all or portions of the data stored in the notebook from unauthorized access.

#### Hardware Data Security Features

When you are using your notebook built-in hardware control password to gain access to the notebook the actual password will not appear on the screen. This is a safety precaution. The hardware control security parameters are set





from the BIOS setup utility. (See *Security Menu* on pages 101-106 for more information on setting and clearing passwords and enabling and disabling built-in security features.)

#### Software Data Security Features

The operating system and some applications have security features that are independent of the built-in hardware protection features that are controlled from the BIOS. See your software documentation for more information about these features.



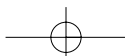
#### CAUTION

Software security feature passwords may not be the same as the hardware security passwords. Be sure you know which features are controlled from software and which from hardware or you may lock yourself out of your own data or lock up your hardware and not be able to operate your notebook.



#### CAUTION

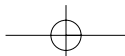
Make sure you memorize your passwords, both hardware and software. If you forget, you may not be able to use the notebook, and you will have to contact your service provider and arrange to have them reset the hardware system password. See your software documentation for what to do if you forget your software security password(s).

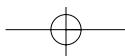




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*S e c t i o n   T h r e e*





**Configuring Your LifeBook E Series**

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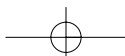
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 Section Four

## SECTION FOUR CONFIGURING YOUR LIFEBOOK E SERIES FROM FUJITSU

This section explains the BIOS setup utility. The BIOS setup utility is required to set the date, time, power management modes, data security passwords and other operating parameters of your notebook.

### BOOT SEQUENCE

Each time you power up or restart your LifeBook E Series, it goes through a quiet boot sequence that displays a Fujitsu logo until your operating system is loaded. During quiet boot, your notebook is performing a standard boot sequence including a Power On Self Test (POST). To access the ability to change the drive that will be used for finding the operating system, press the **Esc** key anytime while the Fujitsu logo is displayed. To enter the BIOS setup utility press the **F2** key anytime while the Fujitsu logo is displayed. When the boot sequence is completed without a failure and without a request for the setup utility, the

system displays the operating system's opening screen. The boot sequence is executed when:

- You turn on power to the system using the power switch on the right side panel of your notebook. (*Figure 2-4 on page 16.*)
- You restart your computer from the Windows Shut Down dialog box of the Start Menu.
- The software initiates a system restart. Example: When you install a new application.
- You reset the system by pressing the three keys **Ctrl+Alt+Del** at the same time and then restart your computer from the Windows Shut Down dialog box.



#### POINT

The BIOS setup utility is entered by pressing the **F2** key during the boot process while the Fujitsu logo is on the screen.



#### POINT

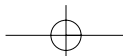
When error messages occur see Section Six, pages 151-176, for help in understanding the meaning and required actions to be taken.

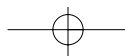
### IDENTIFYING THE DRIVES

Your notebook uses drive letters (Example A:, B:, C:, D:, E:) to identify internal and external devices such as hard drives, floppy disk drives, CD-ROM drives and PC Cards. The most commonly assigned drive designators are listed below. If you add other devices, the drive designators may be different. See your operating system manual for setting drive designations.

#### Drive Designators

- A: Floppy disk drive or SuperDisk 120 Drive.  
Installable in multi-function bay 1 only, or use the external floppy disk drive.
- B: This designator may be assigned to the SuperDisk 120 Drive.





C: Hard drive.

Installed inside your notebook.

D: CD/DVD-ROM drive or optional second hard drive. Installable in Multi-function Bay 2 of your notebook.



#### POINT

Due to the special design of the SuperDisk 120 Drive it can be configured as a removable device as well as a standard bootable floppy drive. Because of this unique configuration the drive letter designations for the SuperDisk 120 Drive are variable. Please consult the documentation that comes with your Optional SuperDisk 120 drive for specific information on how to properly configure and use the device.



#### CAUTION

A bootable CD-ROM may have either a floppy disk format or a hard drive format. When using a bootable CD-ROM, drive designations will automatically change according to which format is used. (See page 68 for more information.)

#### BIOS SETUP UTILITY

The BIOS setup utility is a program that sets the operating environment for your notebook. It is referred to in this publication as the setup utility. There is no need to set or change the environment to operate as it is set at the factory for normal operating conditions.

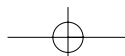
The setup utility configures:

- Standard system parameters, such as date and time.
- Device control feature parameters, such as I/O addresses and boot devices.

- Power Management parameters that help to conserve your notebook's battery life.
- System Data Security feature parameters, such as passwords.

You will only have to change the utility settings if you want to:

- Change the date or time. (You can also do this without entering the setup utility, through your operating system. See your operating system manual.)
- Change the primary boot device.
- Change the power management parameter settings.
- Change a port address or other parameter.
- Change an audio parameter setting.
- Change the selection of whether to use the built-in display, an external monitor or both. (For a more convenient process, see the **Fn** key on page 37.)
- Change the system data security settings.





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## Section Four

### Routinely Entering the Setup Utility

You can enter the setup utility whenever you turn on or reset the system. To do this:

1. Allow the system to start booting.
2. As soon as the Fujitsu logo appears on the screen, press the **F2** key.
3. The Main menu of the setup utility then appears with the current settings of the parameters displayed.
4. If you wish to go to one of the other setup menus, press the **←** or the **→** key to find the menu you require.

 **POINT**

If your data security settings require it, you may be asked for a password before the Main menu will appear.

### Entering the Setup Utility After a Configuration Change or System Failure

If there has been a change in the system configuration that does not agree with the parameter settings stored in your BIOS memory, or there is a failure in the system, the system beeps and/or displays an error message after the Power On Self Test (POST). If the failure is not too severe, it will give you the opportunity to modify the settings of the setup utility, as described in the following steps:

1. When you turn on or restart the computer there is a beep and/or the following message appears on the screen:

```
Error message - please run
SETUP program
Press <F1> key to continue,
<F2> to run SETUP
```

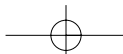
2. If an error message is displayed on the screen, and you want to continue with the boot process and start the operating system anyway, press the **F1** key.

 **CAUTION**

If your notebook beeps a series of beeps that sounds like a code and the display is blank, please refer to the Troubleshooting Section. The Troubleshooting Section includes a list of error messages and their meanings. (See pages 151-169.)

 **POINT**

If your data security settings require it, you may be asked for a password before the operating system will be opened.





3. If an error message is displayed on the screen, and you want to enter the setup utility, press the **F2** key.
4. When the setup utility starts with a fault present, the system displays the following message:  
Warning!  
Error message  
[Continue]
5. Press any key to enter the setup utility. The system will then display the Main Menu with current parameters values.

### NAVIGATING THROUGH THE SETUP UTILITY

The BIOS setup utility consists of seven menus; MAIN, ADVANCED, SECURITY, POWER SAVINGS, BOOT and EXIT. The remainder of Section Three explains each menu in turn including all submenus and setup items.

The following procedures allow you to navigate the setup utility menus:

1. To select a menu, use the cursor keys: **←**, **→**.
2. To select a field within a menu or a submenu, use the cursor keys: **↑**, **↓**.
3. To select the different values for each field, press the **Spacebar** or **+** to change to the next higher selection and **F5** or **-** to go to the next lower selection.
4. To activate a submenu press the **Enter** key.
5. To return to a menu from a submenu, press the **Esc** key.
6. To go to the Exit menu from any other menu, press the **Esc** key.

#### POINT

Selecting a field causes a help message about that field to be displayed on the right-hand side of the screen

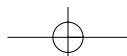
#### POINT

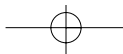
Pressing the Enter key with the highlight on a selection that is not a submenu or auto selection will cause a list of all options for that item to be displayed. Pressing the Enter key or Esc key will select the highlighted choice and remove the list.

7. Pressing the **F9** key resets all items in the current menu to the default values.
8. Pressing the **F10** key saves the current configuration and exits the BIOS Setup Utility. You will be asked to verify this selection before it is executed.
9. Pressing the **F1** key gives you a general help screen.

#### POINT

The BIOS Setup screens depicted in this manual are only representations of the actual setup screens. The BIOS Setup screens on your notebook may vary.





Section Four

### MAIN MENU – SETTING STANDARD SYSTEM PARAMETERS

The Main Menu allows you to set or view the current system parameters. Follow the instructions for Navigating Through The Setup Utility to make any changes. (See page 71.)

Table 4-1 shows the names of the menu fields for the Main menu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

**POINT**

System Time and System Date can also be set from your operating system without using the setup utility. Use the calendar and time icon on your Windows Control panel or type time or date from the MS-DOS prompt.

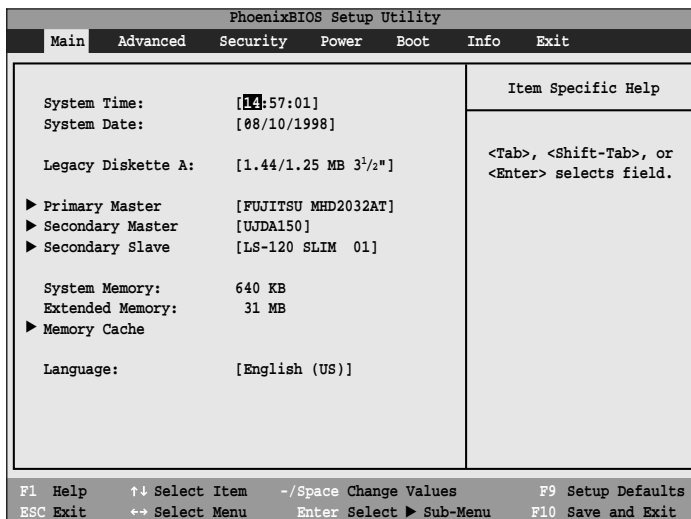


Figure 4-1 Main Menu

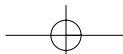
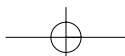
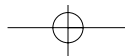




Table 4-1 Fields, Options and Defaults for the Main Menu

| Menu Field         | Options                           | Default            | Description  |
|--------------------|-----------------------------------|--------------------|--|
| System Time:       | —                                 | —                  | Sets and displays the current time. Time is in a 24 hour format of hours:minutes:seconds with 2 digits for each. (HH:MM:SS). Example: 16:45:57. You may change each segment of the time separately. Move between the segments with the <b>Tab</b> key and/or <b>Shift + Tab</b> keys.                                  |
| System Date:       | —                                 | —                  | Sets and displays the current date. Date is in a month/day/year numeric format with 2 digits each for month and day and 4 digits for year. (MM/DD/YYYY) for example: 03/20/1998. You may change each segment of the date separately. Move between the segments with the <b>Tab</b> key and/or <b>Shift + Tab</b> keys. |
| Legacy Diskette A: | 1.44/1.25 MB 3½"; Disabled.       | [1.44/1.25 MB 3½"] | Sets the format for floppy disk drive A if it is installed.  |
| Primary Master:    | Selects Primary Master submenu.   |                    | Display the type of device on this ATA/ATAPI interface, if there is one. Pressing the <b>Enter</b> key selects the Primary Master submenu allowing additional device configuration options for this interface.   |
| Secondary Master:  | Selects Secondary Master submenu. |                    | Display the type of device on this ATA/ATAPI interface, if there is one. Pressing the <b>Enter</b> key selects the Secondary Master submenu allowing additional device configuration options for this interface.   |



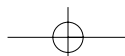


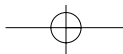
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*S e c t i o n F o u r*

Table 4-1 Fields, Options and Defaults for the Main Menu

| Menu Field       | Options                           | Default        | Description   |
|------------------|-----------------------------------|----------------|---|
| Secondary Slave: | Selects Secondary Slave submenu.  | [UJDA110]      | Display the type of device on this ATA/ATAPI interface, if there is one. Pressing the <b>Enter</b> key selects the Primary Slave submenu allowing additional device configuration options for this interface. |
| System Memory:   |                                   | 640 KB         | Displays the size of system memory, which is detected automatically and cannot be changed by the setup utility.   |
| Extended Memory: |                                   | 31 MB          | Displays the size of extended memory which is detected automatically and cannot be changed by the setup utility.  |
| Memory Cache:    | Selects the memory cache submenu. | —              | Allows you to set your system to use external memory cache.   |
| Language:        | English (US); Japanese (JP).      | [English (US)] | The default setting differs between the US/European and the Japanese model. Selects the display language for the BIOS.  |





**Configuring Your LifeBook E Series**

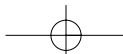
**Primary Master – Submenu**

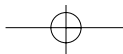
The Primary Master, Secondary Master/Slave submenus are identical for hard drives. They have the capacity displayed at the top of the screen as well as on Main menu. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-2 shows the names of the menu fields for the Primary Master submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

| PhoenixBIOS Setup Utility  |                    |   |
|--|--------------------|---|
| Main   |                    |   |
| Primary Master [FUJITSU MHD2032AT]   |                    | Item Specific Help  |
| Type:  | [Auto]             | User = you enter parameters of hard-disk drive installed at this connection.<br>Auto = autotypes ATA/ATAPI drive installed here.<br>CD-ROM = a CD-ROM drive is installed here.<br>ATAPI Removable = removable disk drive is installed here. |
| Cylinders:   | [6300]             |   |
| Heads:   | [16]               |   |
| Sectors:   | [63]               |   |
| Maximum Capacity:  | 3253 MB            |   |
| Multi-Sector Transfers:  | [16 Sectors]       |   |
| LBA Mode Control:  | [Enabled]          |   |
| Transfer Mode:   | [Fast PIO 4 / DMA] |   |
| Ultra DMA Mode:  | [Mode 2]           |   |
| F1 Help    ↑↓ Select Item    -/Space Change Values    F9 Setup Defaults<br>ESC Exit    ↔ Select Menu    Enter Select ► Sub-Menu    F10 Save and Exit |                    |   |

Figure 4-2 Primary Master, Secondary Master/Slave Submenus

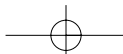




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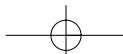
*S e c t i o n   F o u r***Table 4-2 Fields, Options and Defaults for the Primary Master, Secondary Master/Slave Submenus**

| Menu Field | Options  | Default | Description   |
|------------|--|---------|---|
| Type:      | Auto; None; CD-ROM;<br>ATAPI Removable; User.<br>ATAPI Removable 2 | [Auto]  | Selects the ATA/ATAPI device type. Select Auto to have the type automatically identified by the BIOS at POST. If None is selected, all of the following Set-up items do not appear. Select CD-ROM if a CD-ROM drive is installed at this connection. If User is selected, you must specify the number of Cylinders, Heads, and Sectors for the drive. Select ATAPI Removable if a removable disk drive is installed at this connection. |
| Cylinders: | A number between 0 and 65,535.                                     |         | This item appears only when Auto is selected and the type is identified as hard disk, or User is selected. When User is selected, you can change the value. This field is changed by incrementing (pressing the <b>Spacebar</b> ) or by typing in the number.   |
| Heads:     | A number between 1 and 16.   |         | This item appears only when Auto is selected and the type is identified as hard disk, or User is selected. When User is selected, you can change the value. This field is changed by incrementing (pressing the <b>Spacebar</b> ) or by typing in the number.   |
| Sectors:   | A number between 0 and 63.   |         | This item appears only when Auto is selected and the type is identified as hard disk, or User is selected. When User is selected, you can change the value. This field is changed by incrementing (pressing the <b>Spacebar</b> ) or by typing in the number.   |



**Table 4-2 Fields, Options and Defaults for the Primary Master, Secondary Master/Slave Submenus**

| Menu Field              | Options   | Default | Description  |
|-------------------------|---|---------|--|
| Maximum Capacity:       | Display only.   | —       | Displays the maximum capacity of the drive calculated from the parameters of the hard disk when Auto is selected and the type is identified as hard disk, or User is selected.   |
| Multi-Sector Transfers: | Disabled; 2; 4; 8; 16.<br>MAX 32; MAX 64; MAX 128.  | —       | This option cannot be changed when Auto is selected. Specify the number of sectors per block for multiple sector transfer. MAX refers to the size the disk returns when required.  |
| LBA Mode Control:       | Enabled; Disabled.  | —       | Enables or disables logical Block Addressing in place of Cylinder, Head, Sector addressing. This option cannot be changed when Auto is selected.   |
| Transfer Mode:          | Standard, Fast PIO 1; Fast PIO 2<br>Fast PIO 3; Fast PIO 4;<br>Fast PIO 3 / DMA;<br>Fast PIO 4 / DMA. | —       | Selects the method for moving data to/from the drive. Autotype the drive to select the optimum transfer mode. This option cannot be changed when Auto is selected. Multi-word DMA is automatically set to mode 1 for Fast PIO 1, Fast PIO 2, Fast PIO 3, and set to mode 2 for Fast PIO 4 / DMA. |
| Ultra DMA Mode:         | Disabled; Mode 0;<br>Mode 1; Mode 2.  | —       | Selects the method for moving data to/from the drive. Autotype the drive to select the optimum transfer mode. This option cannot be changed when Auto is selected.   |





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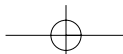
Section Four

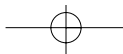
 **CAUTION**

A bootable CD-ROM may have either a floppy disk format or a hard drive format. When the bootable CD-ROM is used the drive allocations change automatically without changing the BIOS setup. If a floppy disk format CD-ROM is used the CD-ROM becomes Drive A. The CD-ROM will only take drive C: (hard drive format) if the internal hard drive is not present or is disabled. The bootable CD-ROM can never use a C: designation if a formatted internal hard drive is present since the C: designator is always reserved for the internal hard drive. The boot sequence ignores the new drive designations, however, your application software will use the new designations.

 **CAUTION**

Be careful of the operating environment when booting from a CD-ROM or you may overwrite files by mistake.





**Configuring Your LifeBook E Series**

**Memory Cache – Submenu**

The Memory Cache submenu provides the ability to enable or disable external cache memory for your processor. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-3 shows the names of the menu fields for the Memory Cache submenu, all the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

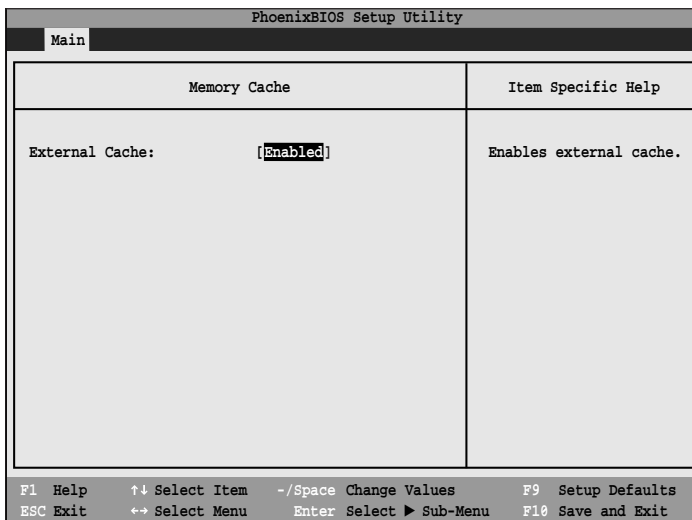
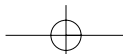


Figure 4-3 Memory Cache Submenu of the Main Menu





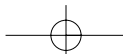
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*S e c t i o n F o u r***Table 4-3 Fields, Options and Defaults for the Memory Cache Submenu**

| Menu Field      | Options            | Default   | Description                             |
|-----------------|--------------------|-----------|---|
| External Cache: | Enabled; Disabled. | [Enabled] | Turns external memory cache on and off. |

**Exiting from the Main Menu**

When you have finished setting the parameters on this menu, you can either exit from the setup utility, or move to another menu. If you wish to exit from the setup utility, press the **ESC** key or use the cursor keys to go to the Exit menu. If you wish to move to another menu, use the cursor keys. (See *Navigating Through the Setup Utility on page 57 for more information.*)





**Configuring Your LifeBook E Series**

**ADVANCED MENU – SETTING DEVICE FEATURE CONTROLS**

The Advanced Menu allows you to:

- Enable or disable support for Plug & Play operating systems.
- Set the I/O addresses for the serial and parallel ports.
- Set the communication mode for the parallel port.
- Set an audio function I/O address, interrupt level and DMA channel.
- Select between the display panel and an external CRT display.
- Enable or disable compensation for your display.
- Configure PCI devices in your system.

Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

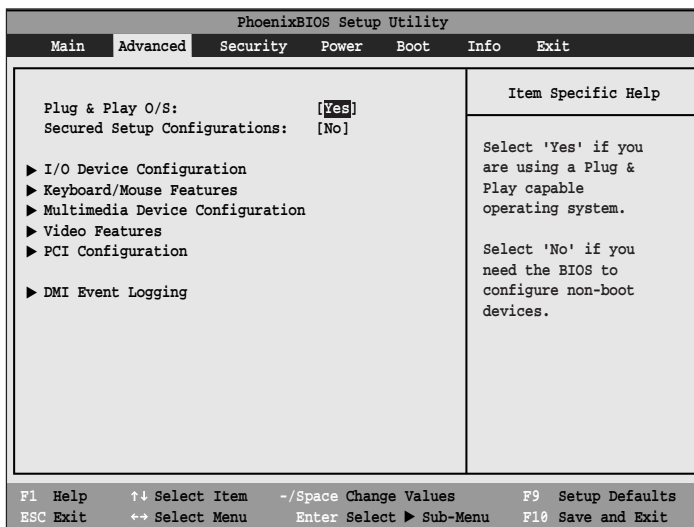
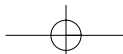


Figure 4-4 Advanced Menu

Table 4-4 shows the names of the menu fields for the Advanced Menu, all of the options for each field, the default settings and a description

of the field's function and any special information needed to help understand the field's use.

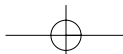


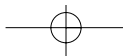


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*S e c t i o n F o u r***Table 4-4 Field Names, Options and Defaults for the Advanced Menu**

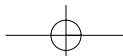
| Menu Field                       | Options  | Default | Description   |
|----------------------------------|----------|---------|---|
| Plug & Play O/S:                 | Yes; No. | [Yes]   | Select <b>Yes</b> if you are using a Plug & Play capable operating system. Select <b>No</b> if you need the BIOS to configure non-boot devices.   |
| Secure Setup Configuration:      | Yes; No. | [No]    | <b>Yes</b> prevents a Plug & Play operating system from changing system settings.   |
| I/O Device Configuration:        |          |         | When selected, opens the I/O Device Configuration submenu which allows the user to modify settings for parallel and serial ports, the floppy disk controller, and the local bus IDE adapter.          |
| Keyboard/Mouse Features:         |          |         | When selected, opens the Keyboard/Mouse Features submenu, which allows setting external and internal keyboard and mouse parameters.   |
| Multimedia Device Configuration: |          |         | When selected, opens the Multimedia Device Configuration submenu, which allows setting the hardware address and interrupt levels of audio functions and enabling or disabling the MIDI/joystick port. |
| Video Features:                  |          |         | When selected, opens the Video Features submenu, which allow setting of the display parameters, including routing of video signals to different displays.   |





**Table 4-4 Field Names, Options and Defaults for the Advanced Menu**

| Menu Field         | Description   |
|--------------------|---|
| PCI Configuration: | When selected, opens additional menus to configure PCI devices. |
| DMI Event Logging: | When selected, opens the DMI event logging configuration menu.  |





Section Four

**CAUTION**

I/O addresses, DMA channels and Interrupt levels can be entered in various ways, including via the BIOS setup utility, the control software for the I/O device, or the hardware. If any two ports or devices, serial or parallel, have the same I/O address assigned your notebook will not function normally. Please keep a record of original settings before making any changes in the event that a restoration is required. See your hardware and software documentation as well as the setup utility to determine settings, limitations, etc.

**I/O Device Configuration Submenu of the Advanced Menu**

The I/O Device Configuration submenu provides the ability to set the I/O addresses and interrupt levels for the parallel and serial ports, and disk drive controllers of your notebook. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

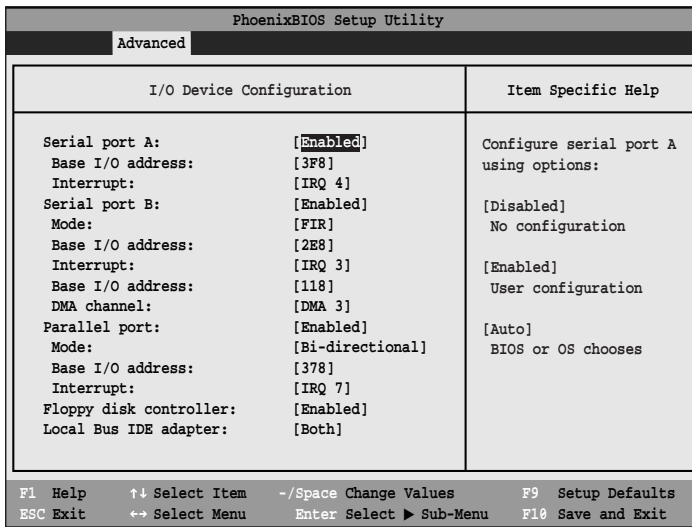
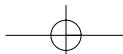
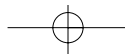


Figure 4-5 I/O Device Configuration Submenu





**Configuring Your LifeBook E Series**

Table 4-5 shows the names of the menu fields for the I/O Device Configuration submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.



**POINT**

To prevent IRQ and address conflicts, avoid changing the default settings. If you must change the settings, you can call 1-800-8FUJITSU for technical assistance.



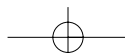
**POINT**

All I/O addresses in Table 4-5 are in hexadecimal.



**CAUTION**

The BIOS will warn you of a resource conflict by placing a yellow asterisk next to each device that is in conflict.

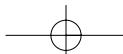


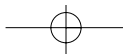


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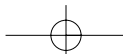
*Section Four***Table 4-5 Fields, Options and Defaults for the I/O Device Configuration Submenu of the Advanced Menu**

| <b>Menu Field</b> | <b>Options</b>                   | <b>Default</b> | <b>Description</b>   |
|-------------------|----------------------------------|----------------|--|
| Serial Port A:    | Disabled; Enabled; Auto.         | [Enabled]      | Configures the serial port A using either no configuration (Disabled), a user defined configuration (Enabled), or by allowing the BIOS or OS to choose the configuration (Auto). |
| Base I/O address: | 3F8; 2F8; 3E8; 2E8.              | [3F8]          | Allows user to set the serial port base I/O address when port A is Enabled.  |
| Interrupt:        | IRQ 3; IRQ 4;<br>IRQ 10; IRQ 11. | [IRQ 4]        | Allows user to set the serial port interrupt when port A is Enabled.   |
| Serial Port B:    | Disabled; Enabled; Auto.         | [Enabled]      | Configures the serial port B using either no configuration (Disabled), a user defined configuration (Enabled), or by allowing the BIOS or OS to choose the configuration (Auto). |
| Mode:             | IrDA; FIR.                       | [FIR]          | Allows user to set the serial port mode when port B is Enabled.  |
| Base I/O address: | 3F8; 2F8; 3E8; 2E8.              | [2E8]          | Allows user to set the serial port base I/O address when port B is Enabled.  |




**Table 4-5 Fields, Options and Defaults for the I/O Device Configuration Submenu of the Advanced Menu**

| Menu Field        | Options                              | Default          | Description   |
|-------------------|--------------------------------------|------------------|---|
| Interrupt:        | IRQ 3; IRQ 4;<br>IRQ 10; IRQ 11.     | [IRQ 3]          | Allows user to set the serial port interrupt when port B is Enabled.  |
| Base I/O address: | 100; 108; 110; 118.                  | [118]            | When the mode for serial port B is set to FIR, this option is available allowing the user to set the base I/O address for the FIR of serial port B.   |
| DMA channel:      | DMA 1; DMA 3.                        | [DMA 3]          | When the mode for serial port B is set to FIR, this option is available allowing the user to set the DMA channel for the FIR of serial port B.  |
| Parallel port:    | Disabled; Enabled; Auto.             | [Enabled]        | Configures the parallel port using either no configuration (Disabled), a user defined configuration (Enabled), or by allowing the BIOS or OS to choose the configuration (Auto).  |
| Mode:             | Output Only;<br>Bi-directional; ECP. | [Bi-directional] | When the parallel port is enabled this option is available allowing the user to set the mode for the parallel port. Bi-directional allows two-way transfer of information between your notebook and a connected parallel device. Output Only (Half Duplex) allows information to be transferred in only one direction, from your notebook to the printer or similar device. ECP Mode allows communication with the ECP class of parallel I/O devices. |

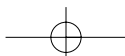




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*S e c t i o n F o u r***Table 4-5 Fields, Options and Defaults for the I/O Device Configuration Submenu of the Advanced Menu**

| Menu Field              | Options                             | Default   | Description  |
|-------------------------|-------------------------------------|-----------|--|
| Base I/O address:       | 378; 278; 3BC.                      | [378]     | Allows user to set the parallel port base I/O address when the parallel port is Enabled.   |
| Interrupt:              | IRQ 5; IRQ 7.                       | [IRQ 7]   | Allows user to set the parallel port interrupt when the parallel port is Enabled.  |
| Floppy disk controller: | Disabled; Enabled; Auto.            | [Enabled] | Enables and disables the floppy disk drive controller for both multi-function bays and the external floppy disk drive port. When Auto is selected, allows the BIOS to choose the configuration for the controller. |
| Local Bus IDE adapter:  | Both; Disabled; Primary; Secondary. | [Both]    | Enables and disables the integrated local bus IDE adapter.   |





**Configuring Your LifeBook E Series**

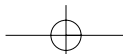
**Keyboard/Mouse Features Submenu**

The Keyboard/Mouse Features submenu is for setting the parameters of the integrated and external mouse and keyboard. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-6 shows the names of the menu fields for the Keyboard/Mouse submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

| PhoenixBIOS Setup Utility  |                                     |
|--|-------------------------------------|
| Advanced   |                                     |
| Keyboard/Mouse Features  | Item Specific Help                  |
| Numlock: [Auto]  | Selects Power-on state for NumLock. |
| Hot Plug: [Enabled]  |                                     |
| Internal Pointing Device: [Auto Disabled]  |                                     |
| F1 Help    ↑↓ Select Item    -/Space Change Values    F9 Setup Defaults<br>ESC Exit    ↔ Select Menu    Enter Select ► Sub-Menu    F10 Save and Exit |                                     |

Figure 4-6 Keyboard/Mouse Features Submenu

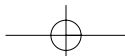


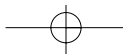


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*S e c t i o n F o u r***Table 4-6 Fields, Options and Defaults of the Keyboard/Mouse Submenu of the Advanced Menu**

| Menu Field                | Options                           | Default         | Description   |
|---------------------------|-----------------------------------|-----------------|---|
| Numlock:                  | Auto; Off; On.                    | [Auto]          | Sets the NumLock function state when the computer completes booting.  |
| Hot Plug:                 | Enabled; Disabled.                | [Enabled]       | Enables and disables the ability to plug a mouse or keyboard into the PS/2 port and have it immediately recognized and active.  |
| Internal Pointing Device: | Auto Disabled;<br>Always Enabled. | [Auto Disabled] | Sets the device controlling the mouse cursor on the screen. Always Enabled makes the pointing device always enabled whether there is an external mouse or not. Auto Disabled makes the pointing device turn off when an external pointing device is connected to the PS/2 port. |





**Configuring Your LifeBook E Series**

**Multimedia Device Configuration Submenu**

The Multimedia Device Configuration submenu is for setting the features of the built-in audio functions, and enabling joystick function. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-7 shows the names of the menu fields for the Multimedia Device Configuration submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

**POINT**  
 All I/O addresses in Table 4-7 are in hexadecimal.

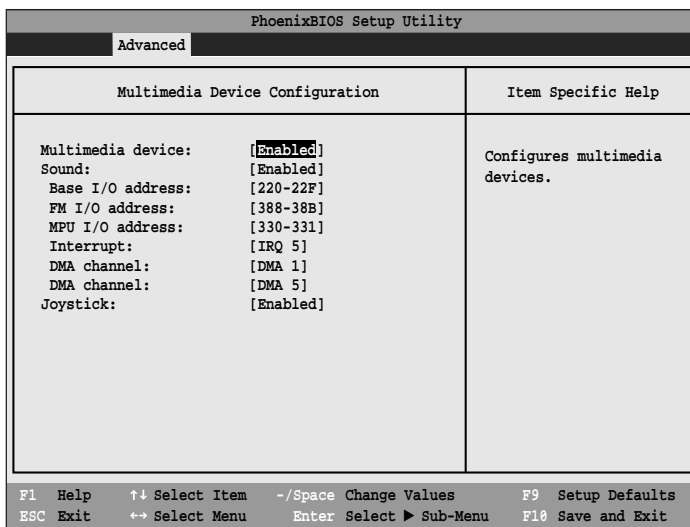
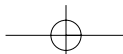


Figure 4-7 Multimedia Device Configuration Submenu





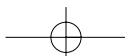

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 Section Four
 

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**Table 4-7 Fields, Options and Defaults of the Multimedia Device Configuration Submenu of the Advanced Menu**

| Menu Field         | Options                                 | Default   | Description  |
|--------------------|---|-----------|--|
| Multimedia device: | Disabled; Enabled.                      | [Enabled] | Enables or disables BIOS support for sound and joystick operation. If Disabled, none of the following items will appear.   |
| Sound:             | Disabled; Enabled; Auto.                | [Enabled] | Allows BIOS support for sound to be enabled or disabled. When set to Auto, the BIOS or OS will choose the proper sound configuration settings and some of the following items will not appear. |
| Base I/O address:  | 220-22F; 240-24F;<br>260-26F; 280-28F.  | [220-22F] | When Sound is Enabled, this option is available allowing the user to set the I/O address for the sound device.   |
| FM I/O address:    | 388-38B; 38C-38F;<br>390-393; 394-397.  | [388-38B] | When Sound is Enabled, this option is available allowing the user to set the base I/O address for the FM device.   |
| MPU-I/O address:   | 300-301; 310-311;<br>320-321; 330-331.  | [330-331] | When Sound is Enabled, this option is available allowing the user to set the I/O address for the MPU device.   |
| Interrupt:         | IRQ 5; IRQ 7; IRQ 9;<br>IRQ 10; IRQ 11. | [IRQ 5]   | When Sound is Enabled, this option is available allowing the user to set the interrupt for the sound device.   |
| DMA channel:       | DMA 0; DMA 1;<br>DMA 3; DMA 5.          | [DMA 1]   | When Sound is Enabled, this option is available allowing the user to set the DMA channel for the sound device.   |
| DMA channel:       | DMA 0; DMA 1;<br>DMA 3; DMA 5.          | [DMA 5]   | When Sound is Enabled, this option is available allowing the user to set the DMA channel for the sound device.   |
| Joystick:          | Disabled; Enabled.                      | [Enabled] | Enables or disables BIOS support for the joystick.   |





**Configuring Your LifeBook E Series**

**Video Features Submenu**

The Video Features Submenu is for setting the display parameters. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-8 shows the names of the menu fields for the Video Features submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

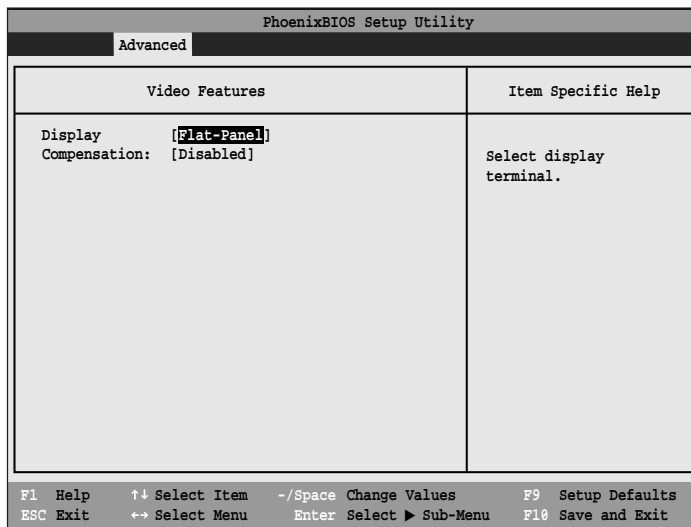
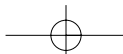
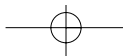


Figure 4-8 Video Features Submenu

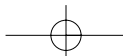




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*S e c t i o n F o u r***Table 4-8 Fields, Options and Defaults for the Video Features Submenu of the Advanced Menu**

| Menu Field    | Options                           | Default      | Description   |
|---------------|-----------------------------------|--------------|---|
| Display:      | Flat-Panel; CRT;<br>Simultaneous. | [Flat-Panel] | Selects where the video signal will be routed.  |
| Compensation: | Enabled; Disabled.                | [Disabled]   | Enables or disables compensation which controls spacing on the display. When enabled, displays with less than pixel resolution 1024 x 768 (E335, E340 and E350) or 800 x 600 (E330) will still cover the entire screen. |





**Configuring Your LifeBook E Series**

**PCI Configuration Submenu**

The PCI Configuration submenu allows the user to reserve specific interrupts (IRQs) for legacy ISA devices, and to enable or disable built in PCI device modules. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-9 shows the names of the menu fields for the PCI Configuration submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

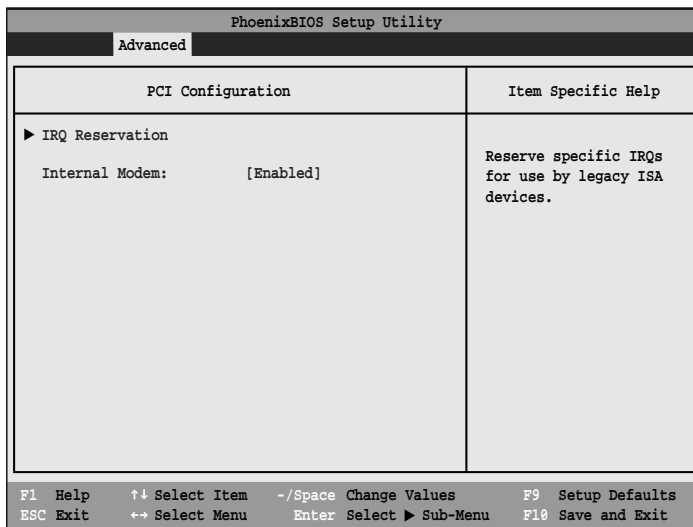
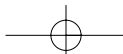
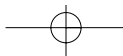


Figure 4-9 PCI Configuration Submenu





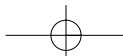
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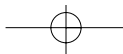
*Section Four***Table 4-9 Fields, Options and Defaults for the PCI Configuration Submenu of the Advanced Menu**

| Menu Field       | Options            | Default   | Description  |
|------------------|--------------------|-----------|--|
| IRQ Reservation: | —                  | —         | Accesses a submenu allowing the user to reserve specific IRQs for use by legacy ISA devices. |
| Internal Modem:  | Disabled; Enabled. | [Enabled] | Allows the internal modem module to be enabled or disabled.                                  |
| or               |                    |           |  |
| Internal LAN:    | Disabled; Enabled. | [Enabled] | Allows the internal LAN module to be enabled or disabled.                                    |

**POINT**

The BIOS setting for your communication device is variable depending on your LifeBook E Series Built-to-order configuration.





**Configuring Your LifeBook E Series**

**IRQ Reservation Submenu of the PCI Configuration Submenu**

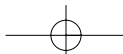
The IRQ Reservation submenu of the PCI Configuration submenu allows the user to mark various IRQs as reserved for use by legacy ISA devices. When an IRQ is reserved, the BIOS does not use it for embedded PCI or ISA devices. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

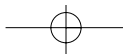
Table 4-10 shows the names of the menu fields for the IRQ Reservation submenu of the PCI Configuration submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

| PhoenixBIOS Setup Utility  |  |
|--|--|
| Advanced   |  |
| IRQ Reservation  | Item Specific Help                                       |
| IRQ 3: [Available]   | Reserve the specified IRQ for use by legacy ISA devices. |
| IRQ 4: [Available]   |  |
| IRQ 5: [Available]   |  |
| IRQ 7: [Available]   |  |
| IRQ 9: [Available]   |  |
| IRQ 10: [Available]  |  |
| IRQ 11: [Available]  |  |
| F1 Help    ↑↓ Select Item    -/Space Change Values    F9 Setup Defaults<br>ESC Exit    ↔ Select Menu    Enter Select ► Sub-Menu    F10 Save and Exit |  |

Figure 4-10 IRQ Reservation Submenu

Four





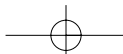
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*Section Four***Table 4-10 Fields, Options and Defaults for the IRQ Reservation Submenu of the of the PCI Configuration Submenu of the Advanced Menu**

| Menu Field | Options              | Default     | Description  |
|------------|----------------------|-------------|--|
| IRQ 3:     | Available; Reserved. | [Available] | Reserves IRQ 3. If Reserved is selected, the BIOS reserves IRQ 3 for use by legacy ISA devices and does not use it for embedded PCI or ISA devices. IRQ 3 is removed from the IRQ bitmap in the PCI IRQ routing table. |
| IRQ 4:     | Available; Reserved. | [Available] | Reserves IRQ 4.  |
| IRQ 5:     | Available; Reserved. | [Available] | Reserves IRQ 5.  |
| IRQ 7:     | Available; Reserved. | [Available] | Reserves IRQ 7.  |
| IRQ 9:     | Available; Reserved. | [Available] | Reserves IRQ 9.  |
| IRQ 10:    | Available; Reserved. | [Available] | Reserves IRQ 10.   |
| IRQ 11:    | Available; Reserved. | [Available] | Reserves IRQ 11.   |

**CAUTION**

Only IRQ's 9, 10, & 11 can be reserved without conflict.





**Configuring Your LifeBook E Series**

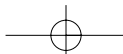
**DMI Event Logging Submenu of the Advanced Menu**

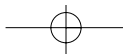
The DMI Event Logging Submenu is for setting up the logs DMI event logging. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-11 shows the names of the menu fields for the DMI Event Logging submenu, all the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

| PhoenixBIOS Setup Utility  |   |
|--|---|
| Advanced   |   |
| DMI Event Logging  | Item Specific Help  |
| Event log capacity:           Space Available  | 'Yes' clears all DMI event logs at next boot. The value is reset to 'No' after clearing logs. |
| Event log validity:           Valid  |   |
| Clear all DMI event logs: [No]   |   |
| Event Logging:                [Enabled]  |   |
| System Boot Event:        [Disabled]   |   |
| F1 Help    ↑↓ Select Item    -/Space Change Values    F9 Setup Defaults<br>ESC Exit    ↔ Select Menu    Enter Select ► Sub-Menu    F10 Save and Exit |   |

Figure 4-11 DMI Event Logging Submenu

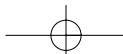


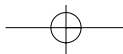


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*S e c t i o n F o u r***Table 4-11 Fields, options and Defaults for the DMI Event Logging Submenu**

| Menu Field                | Options            | Default           | Description  |
|---------------------------|--------------------|-------------------|--|
| Event log capacity:       | Display only.      | [Space Available] |  |
| Event log validity:       | Display only.      | [Valid]           |  |
| Clear all DMI event logs: | Yes; No.           | [No]              | A Yes selection causes the event logs to clear at the next boot. Once the logs are cleared this automatically sets to No until reset to yes by selecting yes here. |
| Event Logging:            | Enabled; Disabled. | [Enabled]         | Turns event logging on and off for all DMI events.   |
| System Boot Event:        | Enabled; Disabled. | [Disabled]        | Turns event logging on and off for DMI system boot events.   |





**Configuring Your LifeBook E Series**

**SECURITY MENU – SETTING THE SECURITY FEATURES**

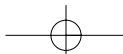
The Security menu allows you to set up the data security features of your notebook to fit your operating needs and to view the current data security configuration. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

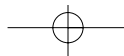
Table 4-12 shows the names of the menu fields for the Security menu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use. The default condition is no passwords required and no write protection.

| PhoenixBIOS Setup Utility  |                |   |
|----------------------------|----------------|---|
| Main                       | Advanced       | Security  |
| Supervisor Password Is:    | Clear          | Item Specific Help  |
| User Password Is:          | Clear          |   |
| Set Supervisor Password    | [Enter]        | Supervisor Password controls access to the setup utility. |
| Set User Password          | [Enter]        |   |
| Diskette access:           | [All]          |   |
| Password on boot:          | [Disabled]     |   |
| Power Management security: | [Disabled]     |   |
| Fixed disk boot sector:    | [Normal]       |   |
| Fixed disk security:       |                |   |
| Primary Master:            | [Disabled]     |   |
| Secondary Master:          | [Disabled]     |   |
| Secondary Slave:           | [Disabled]     |   |
| F1 Help                    | ↑↓ Select Item | -/Space Change Values                                     |
| ESC Exit                   | ↔ Select Menu  | Enter Select ▶ Sub-Menu                                   |
|                            |                | F9 Setup Defaults   |
|                            |                | F10 Save and Exit   |

Figure 4-12 Security Menu

Four





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Section Four

 **POINT**

If you set a password, write it down and keep it in a safe place. If you forget the password you will have to contact your support representative to regain access to your secured functions and data.

 **POINT**

If you make an error when re-entering the password a [Warning] will be displayed on the screen. To try again press the **Enter** key and then retype the password. Press the **Esc** key to abort the password setting process.

 **CAUTION**

Entering a password incorrectly 3 times in a row will cause the keyboard and mouse to be locked out and the warning [System Disabled] to be displayed. If this happens restart the computer by turning off and on the power with the power switch and use the correct password on reboot.

 **CAUTION**

If the Power Management Security is Enabled and the Password on Boot is Disabled you will not be able to resume operation from the Suspend or Save-to-Disk modes.

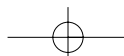
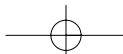
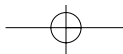




Table 4-12 Fields, Options and Defaults for the Security Menu

| Menu Field               | Options | Default | Description   |
|--------------------------|---------|---------|---|
| Supervisor Password is:  | —       | Clear   | A display-only field. Set is displayed when the system supervisor password is set and Clear when it is not.   |
| User Password is:        | —       | Clear   | A display-only field. Set is displayed when the general user password is set, and Clear when it is not.   |
| Set Supervisor Password: | [Enter] | —       | Sets, changes or cancels the Supervisor Password. The Supervisor Password may be up to seven characters long and must include only lower-case letters or numbers. To cancel a password press the <b>Enter</b> key instead of entering characters in the Enter New Password field and in the Re-enter New Password field. When a Supervisor Password is set it must be used to access the BIOS setup utility.  |
| Set User Password:       | [Enter] | —       | (This field can only be accessed if the Supervisor Password is set.) Sets, changes or cancels the User Password. The User Password may be up to seven characters long and must include only lower case letters or numbers. To cancel a password press the <b>Enter</b> key instead of entering characters in the Enter New Password field and in the Re-enter New Password field. When a User Password is set it must be used to access the BIOS setup utility. |

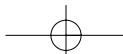




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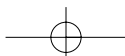
*S e c t i o n F o u r***Table 4-12 Fields, Options and Defaults for the Security Menu**

| <b>Menu Field</b>          | <b>Options</b>         | <b>Default</b> | <b>Description</b>   |
|----------------------------|------------------------|----------------|--|
| Diskette access:           | All; Supervisor Only.  | [All]          | Sets the floppy disk access to be secured for access only with Supervisor's password or by all users with a password. The default is all users with a password.  |
| Password on boot:          | Enabled; Disabled.     | [Disabled]     | When set to Enabled, a password (User or Supervisor) is required after the Power On Self Test (POST) before the operating system will be read from a disk. When set to Disabled no password is required. If no Supervisor Password is set this feature is not available and no password is required.                         |
| Power Management Security: | Enabled; Disabled.     | [Disabled]     | When set to Enabled, a password (User or Supervisor) is required to resume from Suspend or Save-to-Disk mode. The password required is the same one required by the Password on Boot function.   |
| Fixed disk boot sector:    | Normal; Write Protect. | [Normal]       | Sets write protection for the sector of the boot disk which contains the operating system. When set to Write Protect, the BIOS will prevent any application from writing into the sector of the internal hard drive containing the operating system. When set to Normal there is no BIOS protection of the operating system. |



**Table 4-12 Fields, Options and Defaults for the Security Menu**

| Menu Field           | Options            | Default    | Description  |
|----------------------|--------------------|------------|--|
| Fixed disk security: |                    |            |  |
| Primary Master:      | Enabled; Disabled. | [Disabled] | When set to Enabled , a password (User or Supervisor) is required to access data on the disk drive on the Primary Master interface.  |
| Secondary Master:    | Enabled; Disabled. | [Disabled] | When set to Enabled, a password (User or Supervisor) is required to access data on the Secondary Master interface.                   |
| Secondary Slave:     | Enabled; Disabled. | [Disabled] | When set to Enabled , a password (User or Supervisor) is required to access data on the disk drive on the Secondary Slave interface. |





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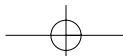
Section Four

 **POINT**

Boot sector protection must be set to [Normal] to install or upgrade an operating system.

**Exiting from the Security Menu**

When you have finished setting the parameters on the Security Menu, you can either exit from setup utility or move to another menu. If you wish to exit from setup utility, press the **Esc** key to go to the Exit Menu. If you wish to move to another menu, use the cursor keys.





**Configuring Your LifeBook E Series**

**POWER MENU –  
SETTING POWER MANAGEMENT  
FEATURE CONTROLS**

The Power menu allows you to set and change the power management parameters. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-13 shows the names of the menu fields for the Power menu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

**POINT**  
Most power management parameters can also be set from the Windows 95 and Windows NT desktop without entering the setup utility, using PowerPanel by Phoenix Technologies. Changing the settings with PowerPanel does not change what is stored in the CMOS memory.

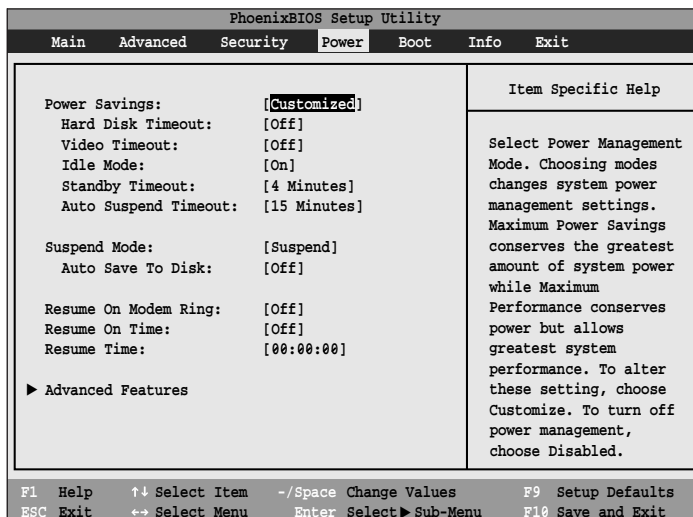
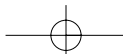


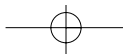
Figure 4-13 Power Menu

**POINT**  
In Windows 98 Auto-suspend Timeout, Hard Disk Timeout, and Video Timeout

features are available exclusively through the operating system.

Four

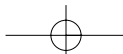


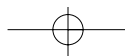


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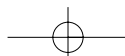
*S e c t i o n F o u r***Table 4-13 Fields, Options and Defaults for the Power Menu.**

| Menu Field         | Options   | Default      | Description   |
|--------------------|---|--------------|---|
| Power Savings:     | Customized; Maximum Performance; Maximum Power Savings, Disabled. | [Customized] | Sets the power savings parameters to a factory installed combination of parameters, a custom set of parameters set by you or no power saving features.  |
| Hard Disk Timeout: | 30 seconds to 20 minutes; Off.                                    | [Off]        | Sets the length of time that the hard drive can be inactive before your notebook automatically turns off the power to the hard drive controller and drive motor. If you choose a factory installed combination of parameters this field will display the setting. If you choose to customize the parameters you will be able to set this yourself. The options available vary from Off, which has no inactivity shutoff, to 20 minutes. |
| Video Timeout:     | 2 minutes to 20 minutes; Off.                                     | [Off]        | Sets the length of time without any user input device activity before the display is turned off. If you choose a factory combination of parameters, this field will display the setting. If you choose to customize the parameters, you will be able to set this yourself. Off has no inactivity shutoff.   |
| Idle Mode:         | On; Off.  | [On]         | Turns on and off the slow down of the CPU during periods of inactivity. When this is turned on the CPU clock slows by the amount set in the Advanced submenu when there is no activity for 16 seconds or more. Normal speed resumes automatically as soon as there is any activity.   |



**Table 4-13 Fields, Options and Defaults for the Power Menu.**

| Menu Field            | Options                      | Default      | Description   |
|-----------------------|------------------------------|--------------|---|
| Standby Timeout:      | 1 minute to 16 minutes; Off. | [4 Minutes]  | Sets the length of time without any user input device activity before the CPU is set to half speed and the display and the hard drive are turned off. If you choose a factory combination of parameters this field will display the setting. If you choose to customize the parameters you will be able to set this yourself.                                     |
| Auto Suspend Timeout: | 5 to 60 minutes; Off.        | [15 Minutes] | Sets the length of time without any I/O activity before your notebook goes into Suspend mode. If you choose a factory combination of parameters this field will display that setting. If you choose to customize the parameters you will be able to set this yourself. Off has no inactivity suspension.  |
| Suspend Mode:         | Suspend; Save-to-Disk.       | [Suspend]    | Sets the form of suspension state. If you choose Suspend, you will suspend operation with power to system memory, and everything else powered down or in a very low power state. If you choose Save-to-Disk your notebook will save all of system memory and the operating parameters to the hard drive before turning your notebook to the pseudo-off condition. |





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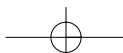
*S e c t i o n   F o u r*

 **POINT**

When resuming from a Save-to-Disk suspension there will be a delay while the contents of system memory and operating parameters are loaded from the hard drive.

 **CAUTION**

In Save-to-Disk mode there is no indication on the Status Indicator to let you know you are suspended rather than shut off from the power switch. You may want to make a habit of always trying the Suspend/Resume button before using the power switch.



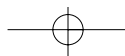
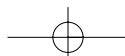


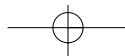
Table 4-13 Fields, Options and Defaults for the Power Menu.

| Menu Field            | Options            | Default | Description  |
|-----------------------|--------------------|---------|--|
| Auto Save to Disk:    | Off; After 1 Hour. | [Off]   | When set to <i>After 1 Hour</i> your notebook will automatically save all of system memory and the operating parameters to the hard drive and go to the pseudo-off if you leave your notebook in Suspend mode for an hour.   |
| Resume On Modem Ring: | On; Off.           | [Off]   | Sets whether or not to Resume from a suspension state when a message is received by telephone line. This feature is not available if the Save-to-Disk mode is enabled. This feature applies to internal, external and PC Card modems.  |
| Resume On Time:       | On; Off.           | [Off]   | Sets whether or not to resume from a suspension state at a designated time. This feature is available from either the Suspend mode or the Save-to-Disk mode.   |
| Resume Time:          | –                  | –       | Sets the designated time, on a 24-hour clock, when the notebook is to automatically resume operation from the Suspend state. The format of the clock setting is hours:minutes:seconds. Each segment of the time is set separately, either by incrementing or by typing in the numbers. You move between the segments with the <b>Tab</b> key or the <b>Shift+Tab</b> keys. This only applies when Resume on Time is set to On. |

 **CAUTION**

Wake on Modem ring when enabled will draw power from the bridge battery alone when your system is running off battery power. This may potentially drain your bridge battery. Disabling Wake on Modem ring will prevent this from happening.






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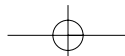
 Section Four

**Table 4-13 Fields, Options and Defaults for the Power Menu.**

| Menu Field         | Options | Default | Description   |
|--------------------|---------|---------|---|
| Advanced Features: | –       | –       | When selected, opens the Advanced Features submenu which allows setting additional power saving parameters. |

**Factory Installed Values for Power Saving Profiles**

|  | Hard Disk Timeout | Video Timeout | Idle Mode | Standby Timeout | Auto Suspend Timeout |
|--|-------------------|---------------|-----------|-----------------|----------------------|
| Customized:  | Off               | Off           | On        | 4 Minutes       | 15 Minutes           |
| Maximum Power Savings:   | 30 Seconds        | 2 Minutes     | On        | 1 Minute        | 5 Minutes            |
| Maximum Performance:   | Off               | Off           | Off       | Off             | 15 Minutes           |
| Disabled:  | Off               | Off           | Off       | Off             | Off                  |
| Sample Customized Profile:<br>(To get even better battery life keep the display and volume settings as low as possible and use the sample customized profile.) | 2 Minutes         | 1 Minute      | On        | 1 Minute        | 5 Minutes            |





**Configuring Your LifeBook E Series**

**Advanced Features  
Submenu of the Power Menu**

The Advanced Features submenu is for setting some non-time related power saving parameters. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

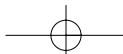
Table 4-14 shows the names of the menu fields for the Video Features submenu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

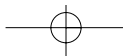
**Exiting from the Power Menu**

When you have finished setting the parameters on the Power menu, you can either exit from the Setup utility or move to another menu. If you wish to exit from Setup utility press the **Esc** key to go to the Exit menu. If you wish to move to another menu, use the cursor keys.

| PhoenixBIOS Setup Utility   |             | Power                   |
|---|-------------|-------------------------|
| Advanced Features   |             | Item Specific Help      |
| SUS/RES Switch:   | [Enabled]   | Set the SUS/RES Switch. |
| Lid Closure Suspend:  | [On]        |                         |
| Lid Open Resume:  | [On]        |                         |
| APM CPU Idle Mode:  | [Low Power] |                         |
| Serial Mouse Activity:  | [Disabled]  |                         |
| F1 Help    ↑↓ Select Item    -/Space Change Values    F9 Setup Defaults<br>ESC Exit    ←→ Select Menu    Enter Select ► Sub-Menu    F10 Save and Exit |             |                         |

Figure 4-14 Advanced Features Submenu

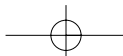


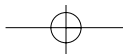


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*S e c t i o n F o u r***Table 4-14 Fields, Options and Defaults for the Advanced Features Submenu of the Power Menu**

| Menu Field             | Options              | Default     | Description  |
|------------------------|----------------------|-------------|--|
| SUS/RES Switch:        | Enabled; Disabled.   | [Enabled]   | Sets the function of the Suspend/Resume button when your notebook is in an active state. The resume function can not be disabled as it works regardless of any other settings. |
| Lid Closure Suspend:   | On; Off.             | [On]        | Enables and disables having closure of the Display panel put your notebook in Suspend mode.  |
| Lid Open Resume:       | On; Off.             | [On]        | Enables and disables having opening the Display panel acting as an automatic resume.   |
| APM CPU Idle Mode:     | Low Power; Standard. | [Low Power] | Sets the CPU speed during Idle mode.   |
| Serial Mouse Activity: | Enabled; Disabled.   | [Disabled]  | Enables and disables having activity on the serial port cause the system to reactivate from inactivity timeouts.   |





**Configuring Your LifeBook E Series**

**BOOT MENU – SELECTING THE OPERATING SYSTEM SOURCE**

The Boot Menu is used to select the order in which the BIOS searches sources for the operating system.

Table 4-15 shows the names of the menu fields for the Boot menu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

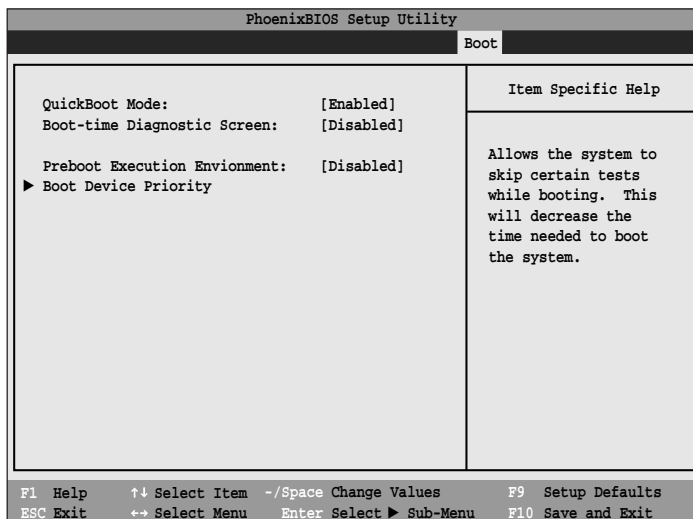
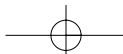
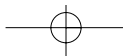


Figure 4-15 Boot Menu

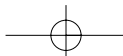


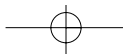


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*S e c t i o n F o u r***Table 4-15 Fields, Options and Defaults for the Boot Menu**

| Menu Field                     | Options                                   | Default    | Description   |
|--------------------------------|---|------------|---|
| QuickBoot Mode:                | Enabled; Disabled.                        | [Enabled]  | Turns on and off booting with a truncated set of Power On Self Test. (Fewer tests mean faster turn on.) |
| Boot-time Diagnostic Screen:   | Enabled; Disabled.                        | [Disabled] | Turns on and off display of test results instead of Fujitsu logo screen during Power On Self Test.      |
| Preboot Execution Environment: | Enabled; Disabled.                        | [Disabled] | Turns on and off the preboot execution environment feature.   |
| Boot Device Priority:          | Selects the Boot Device Priority submenu. | —          | This menu allows setting up the source for the operating system.  |





**Configuring Your LifeBook E Series**

**The Boot Device Priority Submenu of the Boot Menu**

The Boot Device Priority Submenu is for setting the order of checking of sources for the operating system. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-16 shows the names of the menu fields for the Boot Device Priority submenu, all the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

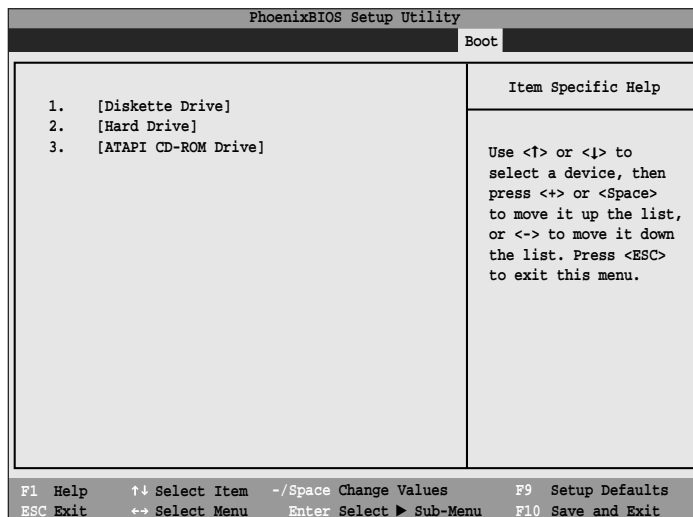
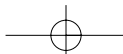
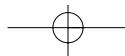


Figure 4-16 Boot Device Priority Submenu





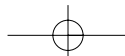
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*Section Four***Table 4-16 Fields, Options and Defaults for the Boot Device Priority Submenu**

| Menu Field             | Options | Default | Description  |
|------------------------|---------|---------|--|
| 1. Diskette Drive:     | —       | —       | The boot selections determine the order in which the BIOS searches for the operating system during a startup sequence. To change the order highlight one source by using the up ↑, down ↓ cursor keys and then press the + or - key to change the order number for that source. Be sure to save your changed order when you exit the BIOS setup utility. |
| 2. Hard Drive:         | —       | —       |  |
| 3. ATAPI CD-ROM Drive: | —       | —       |  |

**Exiting from Boot Menu**

When you have finished setting the boot parameters with the Boot menu, you can either exit from the setup utility or move to another menu. If you wish to exit from the setup utility press the **Esc** key to go to the Exit menu. If you wish to move to another menu, use the cursor keys.





**Configuring Your LifeBook E Series**

**INFO MENU**

The Info menu is a display only menu that provides the configuration information for your notebook.

Table 4-17 shows the names of the menu fields for the Info menu, all the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.



**POINT**

The asset number is an optional user-entered field and can be entered through the use of a third party DMI Compliant software, such as LANdesk Client Manager.

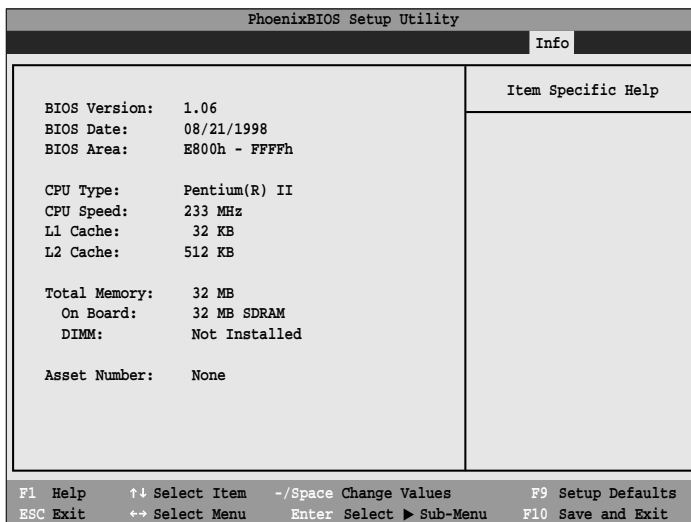
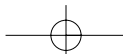
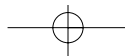


Figure 4-17 Info Menu





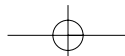
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*Section Four***Table 4-17 Fields, Options and Defaults for the Info Menu**

| Menu Field    | Options | Default       |
|---------------|---------|---------------|
| BIOS Version: | —       | 1.06          |
| BIOS Date:    | —       | 08/21/1998    |
| BIOS Area:    | —       | E800h – FFFFh |
| CPU Type:     | —       | Pentium(R) II |
| CPU Speed:    | —       | 233 MHz       |
| L1 Cache:     | —       | 32 KB         |
| L2 Cache:     | —       | 512 KB        |
| Total Memory: | —       | 32 MB         |
| On Board:     | —       | 32 MB SDRAM   |
| DIMM:         | —       | Not Installed |
| Asset Number  | —       | None          |

**POINT**

The information displayed on this screen is variable according to the unit you purchased. The CPU Type could be 233 Mhz, 266 Mhz or 300 Mhz and the total memory could be 32MB, 64MB or 96MB on your Info screen.





**Configuring Your LifeBook E Series**

**EXIT MENU – LEAVING THE SETUP UTILITY**

The Exit Menu is used to leave the setup utility. Follow the instructions for Navigating Through the Setup Utility to make any changes. (See page 71.)

Table 4-18 shows the names of the menu fields for the Exit menu, all of the options for each field, the default settings and a description of the field's function and any special information needed to help understand the field's use.

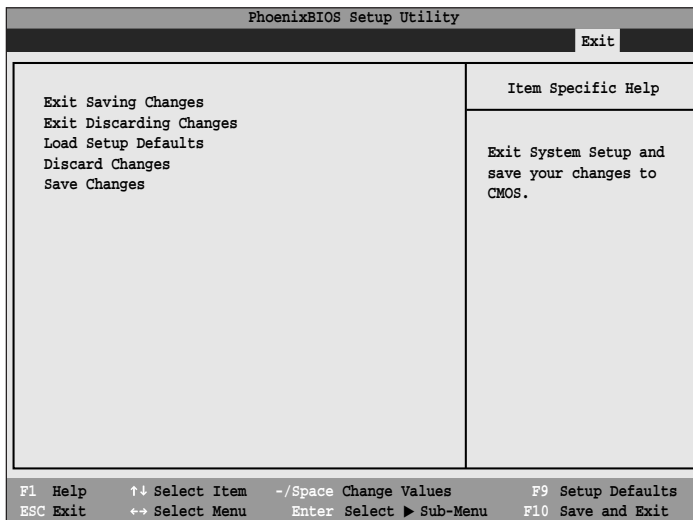
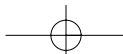


Figure 4-18 Exit Menu

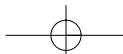


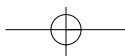


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**Section Four****Table 4-18 Fields, Options and Defaults for the Exit Menu.**

| Menu Field               | Options | Default | Description   |
|--------------------------|---------|---------|---|
| Exit Saving Changes:     | —       | —       | Exit Saving Changes and Exit will store all the entries on every menu of the setup utility to the BIOS memory and then exit the setup utility. A confirmation message <code>Save Configuration Changes and Exit Now? [Yes] [No]</code> will be displayed.   |
| Exit Discarding Changes: | —       | —       | Selecting Exit Discarding Changes and Exit will exit the setup utility with out writing to the BIOS memory. When the BIOS recognizes this selection it will load the operating system and begin operation. A message <code>Warning Configuration Changes have not been saved. Save before exiting? [Yes] [No]</code> will be displayed.   |
| Load Setup Defaults:     | —       | —       | Selecting Load Setup Defaults will load the factory preset default values for all menu fields, then display the message <code>Setup Confirmation Load Default configuration now? [Yes] [No]</code> When confirmed the setup utility will return to the Exit Menu. To return to another menu follow the directions in the Navigating Through the Setup Utility Section. (See page 71.) |

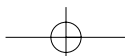


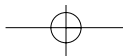


**Configuring Your LifeBook E Series**

**Table 4-18 Fields, Options and Defaults for the Exit Menu.**

| Menu Field       | Options | Default | Description   |
|------------------|---------|---------|---|
| Discard Changes: | —       | —       | Selecting Discard Changes will load the values in BIOS memory for all menu fields. Setup Confirmation Load Previous values now? [Yes] [No] When confirmed the setup utility will return to the Exit menu. To return to another menu, follow the directions in the Navigating Through the Setup Utility Section. (See page 71.)        |
| Save Changes:    | —       | —       | Selecting Save Changes will cause the new settings in all menus to be written to the BIOS memory. Setup Confirmation Save Changes now? [Yes] [No] When confirmed the setup utility will return to the Exit menu. To return to another menu, follow the directions in the Navigating Through the Setup Utility section. (See page 71.) |





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## Section Four

### SETTING UP YOUR SAVE-TO-DISK FILE ALLOCATION

Your notebook comes with an allocation of space on the internal hard drive adequate to operate the Save-to-Disk function for the amount of memory installed at the factory. If you add a memory upgrade module or do not use the Save-to-Disk function and wish to free up the disk space, you will need to change your allocation. The utility to change the allocations is PHDISK.EXE and is activated from the MS-DOS prompt.

PHDISK allows you to perform five different functions related to the Save-to-Disk space on your internal hard drive. They are:

1. Allocate a space for the Save-to-Disk function.
2. Remove all space allocation for the Save-to-Disk function.
3. Find out details about the hard drive and the current Save-to-Disk space allocation.

4. Re-allocate space and mark bad blocks in the space allocated to the Save-to-Disk function when a disk error has occurred.
5. Find out how much space is needed to perform the Save-to-Disk function with the current memory configuration and how much unused space is available on the internal hard drive.

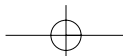
**To find out how much space is needed to perform the Save-to-Disk function with the current memory configuration and how much unused space is available on the internal hard drive, do the following:**

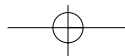
1. Restart your notebook in MS-DOS mode.
2. At the DOS prompt type  
`CD C:\Fujitsu`
3. Type `PHDISK`
4. Press the **Enter** key.

The screen will display the amount disk space needed to perform the Save-to-Disk function with the current memory configuration and how much unused space is available on the internal hard drive.

**To find out details about the hard drive and the current Save-to-Disk space allocation, do the following:**

1. Restart your notebook in MS-DOS mode.
2. At the DOS prompt type  
`CD C:\Fujitsu`
3. Type `PHDISK /INFO`
4. Press the **Enter** key.
5. The screen will display the size of the space currently allocated to the Save-to-Disk function and other parameters about the space and the hard drive.





To remove all space allocation for the Save-to-Disk function, do the following:

1. Go to the Start Menu and select MS-DOS Prompt.
2. Type `CD C:\Fujitsu`
3. Type `PHDISK /DELETE /FILE`.
4. Press the **Enter** key.

The utility will remove the space allocation for the Save-to-Disk function and free that space for other use.

To create a space allocation for the Save-to-Disk function, do the following:

1. Restart your notebook in MS-DOS mode.
2. Type `CD C:\Fujitsu`
3. At the DOS prompt type `PHDISK /CREATE /FILE`
4. Press the **Enter** key.
5. The utility will create a Save-to-Disk file called `SAVE2DSK.BIN` in the root directory.

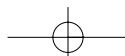
It will be of the minimum size needed to support the Save-to-Disk function with the current memory configuration.

If you have had a read or write error when you tried to perform a Save-to-Disk operation you can re-allocate space to compensate for bad blocks on your drive. To do this:

1. Go to the MS-DOS prompt.
2. Type `CD:\Fujitsu`
3. Type `PHDISK /REFORMAT /FILE`
4. Press the **Enter** key.
5. The utility will re-create the Save-to-Disk file called `SAVE2DSK.BIN` with the same usable size and any bad blocks marked.

**CAUTION**

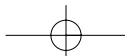
Never use PARTITION in place of FILE with the PHDISK Utility or you will reformat your internal hard drive and all data, applications and operating system will be destroyed.





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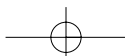
*S e c t i o n   F o u r*

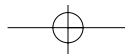




**User Installable Features**

|   |     |
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| Multi-function Bay Devices . . . . .                      | 129 |
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*Section Five*

## SECTION FIVE

### USER INSTALLABLE FEATURES

Your LifeBook E Series has a number of user installable features:

- PC Card slots in the left side panel of your notebook allow you to install PC Cards, IC memory cards (SRAM card) or Zoomed Video cards (Slot 1 only).
- The dual hot-swappable Multi-function bays in the front of your notebook allow you to install a CD-ROM drive, a floppy disk drive, a second hard drive, a DVD-ROM drive, an SuperDisk disk drive, a Zip drive.
- A compartment on the bottom of your notebook allows you to install a memory upgrade module.
- A microphone jack on the right side of your notebook allows you to connect a mono microphone.

- A stereo line in jack on the right side of your notebook allows you to connect a sound source such as a cassette recorder.
- A headphone jack on the right side of your notebook allows you to connect headphones or powered speakers.
- A PS/2 port on the back of your notebook allows you to connect an external mouse, keyboard or numeric keypad.
- An external floppy disk drive port on the left side of your notebook allows you to attach an external floppy disk drive when the Multi-function bays are being used for other purposes.
- A USB port on the right side of your notebook allows you to connect a Universal Serial Bus device.

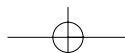
- An RJ-11 or RJ-45 jack on the left side of your notebook allows you to connect a telephone line to the internal modem or an Ethernet cable to the internal network card.
- A docking port on the back of your notebook allows the connection of a docking device.
- A serial port in the back of your notebook allows you to connect serial devices, such as RS-232C serial printers or scanners.
- A parallel port in the back of your notebook allows you to connect a parallel printer, photo or text scanner, etc.
- An external monitor port in the back of your notebook allows you to connect an external monitor.

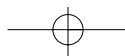
This section describes how to install and remove equipment for each of the expansion features.



#### POINT

Zoomed Video cards, USB ports and infrared ports are not supported by the Windows NT 4.0 operating system.





**User Installable Features**

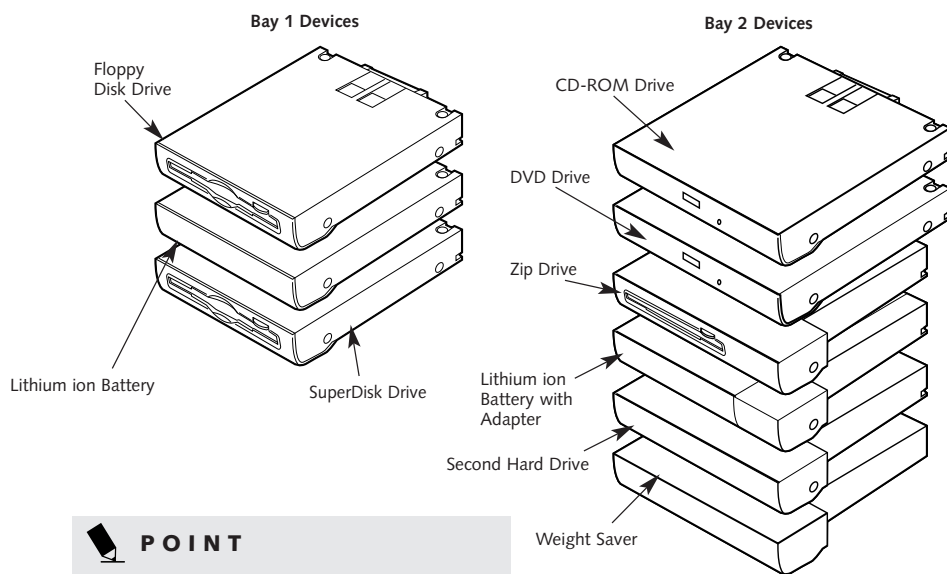


Figure 5-1 Multi-function Bay Devices

**POINT**

This section describes all the possible options available with the LifeBook E series. You may not have all the optional features described in this section.

**MULTI-FUNCTION BAY DEVICES**

The bays in the front panel of your notebook can accommodate a CD-ROM drive, a floppy disk drive, Lithium ion batteries, a second hard drive, a SuperDisk drive, a DVD drive, or a weight saver.

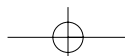
The Multi-function bays support a variety of configurations and optional devices.

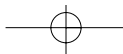
Multi-function Bay 1 supports:

- Primary ■ 3.5" floppy disk drive.
- Optional ■ Lithium ion battery.
- Optional ■ SuperDisk drive.

Multi-function Bay 2 supports:

- Optional ■ 24x maximum CD-ROM drive.
- Optional ■ 1.5-speed maximum DVD-ROM drive.
- Optional ■ Iomega Zip 100 drive.
- Optional ■ Second 5.0GB hard drive.





Section Five

- Lithium ion battery installed with Battery Adapter for Multi-function Bay 2. (Adapter included with your Battery.)
- Weight Saver.

The Lithium ion battery included with your notebook can power your notebook from either bay. Your notebook also supports a dual battery configuration with a Lithium ion battery in both bays at the same time. (The optional second battery must be purchased separately.)

**CAUTION**

The LifeBook E Series notebook does not support multiple floppy disk drives, but has two different places to install one.

**CAUTION**

Be careful aligning and seating modules in the bay. If the fit is incorrect you may damage the bay or the module. If the module does not move easily, remove it, and check for dirt or foreign objects. It will require a firm push to latch the module in place.

**Removing a Device in Multi-function Bay 1 or 2 When the System is Off.**

1. Close any open files on the removable device that you plan to eject from the computer, if a device is currently installed and shut down.
2. Slide the release latch at the left rear corner of the Multi-function Bay toward the outer edge of your notebook.
3. Slide the device forward until the unit is clear of the compartment. This will require some force. Use the finger ridge on the bottom of the device.

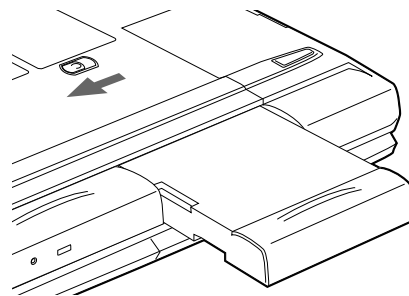
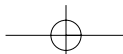
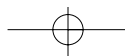


Figure 5-2 Removing and Installing a Device in Multi-function Bay 1

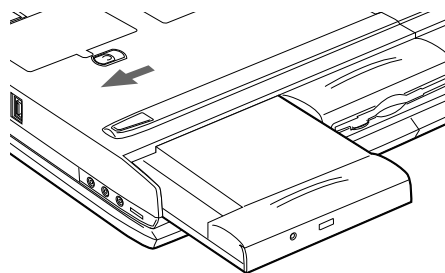
**Installing a Device in Multi-function Bay 1 or 2 When the System is Off.**

1. Orient the item to be installed with the finger ridge away from the body of your notebook and the connector toward the body of your notebook.
2. With the module connector toward the back of your notebook align the grooves on the side of the device with the tracks in the side of the bay. (Figure 5-3.)





**User Installable Features**



**Figure 5-3 Removing and Installing a Device in Multi-function Bay 2**

3. Slide the module toward the back of your notebook until it clicks into place.

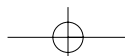
**Removing a Device in Multi-function Bay 1 or 2 Using Tioman Hot Swap.**

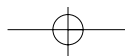
1. Close any open files on the removable device(s) that you plan to eject from the computer.
2. Right-click on either 'Tioman Taskbar Icon' to display its menu.

3. Select the 'Swap Devices' menu.
4. The 'Agate Tioman' window will pop up and display the following message: It is now safe to remove and insert devices in either Multi-function Bay. After you have completed device swapping, click the OK button.
5. Slide the release latch at the left rear corner of the Multi-function Bay toward the outer edge of your notebook.
6. Slide the device forward until the unit is clear of the compartment. This will require some force. Use the finger ridge on the bottom of the device.

**Installing a Device in Multi-function Bay 1 or 2 Using Tioman Hot Swap**

1. Orient the item to be installed with the finger ridge away from the body of your notebook and the connector toward the body of your notebook.
2. With the module connector toward the back of your notebook align the grooves on the side of the device with the tracks in the side of the bay. (Figure 5-3.)
3. Slide the module toward the back of your notebook until it clicks into place.
4. Press the 'OK' button to continue.
5. The software will automatically detect the new devices and place them online.





Section Five

**CD-ROM Drive or Optional DVD Drive**

Your CD-ROM drive or DVD drive is durable but you must treat it with care. Please pay attention to the following points:

- The drive rotates the compact disk at very high speed. Do not carry it around or subject it to shock or vibration with the power on.
- Avoid using or storing the drive or CDs where they will be exposed to extreme temperatures.
- Avoid using or storing the drive or CDs where it is damp or dusty.
- Avoid using or storing the drive near magnets or devices that generate strong magnetic fields.
- Avoid storing the drive where it will be subjected to shock or vibration.
- Do not disassemble or dismantle the CD-ROM drive or DVD drive.

For guidance on loading a CD in your CD-ROM drive or DVD drive and caring for CDs see Section Two. (See pages 44-46.)



**POINT**

DVD playback is not supported in Windows NT 4.0.

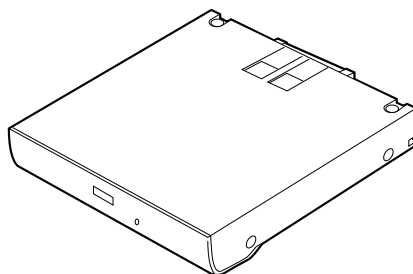


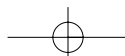
Figure 5-4 CD-ROM Drive or DVD Drive

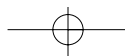
**Optional Second Hard Drive**

The optional second hard drive is durable but must be treated with care. Please pay attention to the following points:

- The drive rotates the disk at very high speed. Do not carry it around or subject it to shock or vibration with the power on.
- Avoid using or storing the drive where it will be exposed to extreme temperatures.
- Avoid using or storing the drive where it is damp or dusty.
- Avoid using or storing the drive near magnets or devices that generate strong magnetic fields.
- Avoid storing the drive where it will be subjected to shock or vibration.
- Do not disassemble or dismantle the hard disk drive.

After the optional second hard drive is installed it will take a short time for your notebook to recognize it.





**User Installable Features**

**Fdisk/Format**

You will need to Fdisk/format your optional second hard drive when you install it for the very first time. Check your operating system documentation for information on initializing a hard drive. Be careful to only format your optional second hard drive once or you will erase everything you have stored on it.

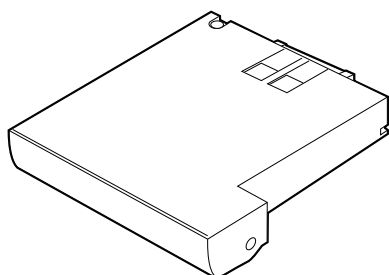


Figure 5-5 Optional Second Hard Drive

**Lithium ion Battery**

Your Lithium ion battery is durable and long lasting but should not be exposed to extreme temperatures, high voltages, chemicals or other hazards.



**CAUTION**

If the Lithium ion battery connector is not fully seated, you may not be able to use your notebook or charge your battery.

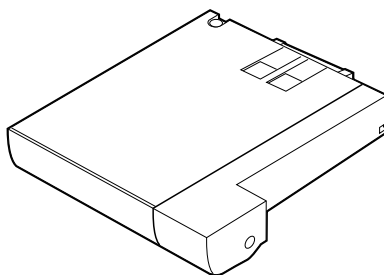
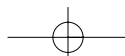


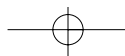
Figure 5-6 Lithium ion Battery with Adapter for Multi-Function Bay 2

**Installing the Battery**

The battery may be installed singly in either bay, using the Battery Adapter for Multi-function Bay 2. With the purchase of an additional battery, batteries may be installed in a dual configuration, one in each bay. A bridge battery allows a charged Lithium ion battery to be exchanged for a discharged one by “warm-swapping”. To warm-swap, have a charged battery ready to install, put your notebook in Suspend mode, remove the low battery and quickly insert the charged battery. The NiCd bridge battery is built-in your notebook and is constantly being charged. The bridge battery capacity is not large, about 3 minutes, and can vary with the condition of your notebook. (See page 38.)

Batteries should be removed and stored separately in a cool dry place if your notebook is not going to be used for an extended period of time.





Section Five

 **CAUTION**

Data may be lost and/or system errors introduced if the warm-swap is not performed quickly or a power adapter is not installed.

 **CAUTION**

The bridge battery can not support an operating notebook. The notebook must be in Suspend mode.

Under federal, state or local law it may be illegal to dispose of batteries by putting them in the trash. Please take care of our environment and dispose of batteries properly. Check with your local government authority for details regarding recycling or disposing of your old battery, or contact your support representative at 1-800-8FUJITSU (1-800-838-5487).

**Optional Zip Drive**

The optional Zip drive using removable Zip disks, with a capacity of 100MB, can be installed in Multi-function Bay 2 only.

The first time you use a Zip drive on your LifeBook E Series notebook, you should install the Zip Tools software onto your system.

**Installing the Zip Tools software.**

1. Insert the Zip drive in Multi-function Bay 2 as described on page 130.
2. Insert the Zip Tools disk into the Zip drive.
3. Use the Run command from the Windows Start menu to run d:\install from the Zip drive. Note that your system may assign a drive designator other than d: to the Zip drive.
4. Select your language preference and follow the instructions that appear on the screen.

 **POINT**

You may receive the following error while installing the Zip Tools software: "No lomega drives found." Select OK. The installation process will continue correctly.

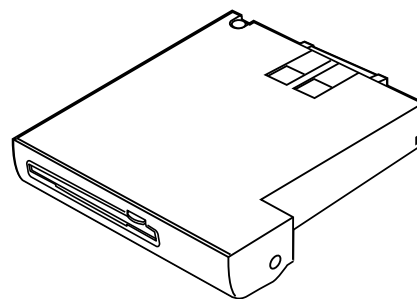
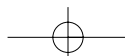


Figure 5-7 Zip Drive





**User Installable Features**

**Weight Saver**

The Weight Saver bay device can be installed in Multi-function Bay 2 only and is used to fill the bay when no device is needed.

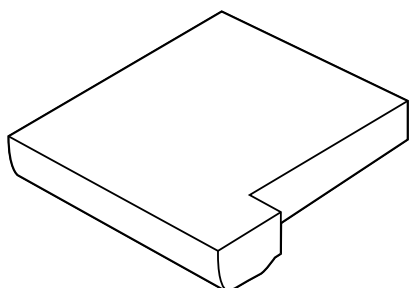


Figure 5-8 Weight Saver

**Optional SuperDisk Drive**

An optional Imation SuperDisk drive, using Super floppy disks with a capacity of 120MB and standard floppy disks, can be installed in Multi-function Bay 1. The SuperDisk drive can take the place of a standard floppy disk drive and offers greater storage capacity using the new 120MB Super floppy disks.

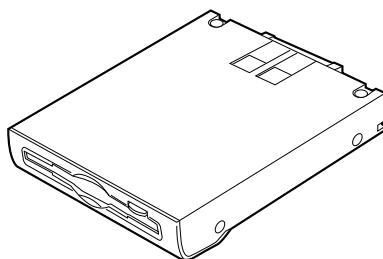


Figure 5-9 Floppy Disk Drive or SuperDisk Drive

**Floppy Disk Drive**

The floppy disk drive can be installed in Multi-function Bay 1. In addition, the floppy disk drive may be installed externally when the Multi-func-

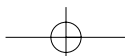
tion bay is needed for other uses. (For information on the care and use of floppy disk drives see *Floppy Disk Drive in Section Two on pages 42-43. To install the floppy disk drive externally, see External Installation of a Floppy Disk Drive on page 140.*)

**PC CARDS**

PC Cards perform a wide variety of functions, and are ideal for mobile computers.

Some available PC Cards:

- Fax/data modem cards (Type II).
- Local area network (LAN) cards (Type II).
- Wireless LAN cards (Type II).
- 1MB and 2MB static RAM (SRAM) cards (Type I).
- IDE solid-state disk cards (Type II).
- SCSI cards (Type II).
- Zoomed Video cards (Type II, Slot 1 only).
- ATA cards (Type III).





Section Five

- Other PC Cards that conform to PCMCIA 2.1 or CardBus standards.

For further information, refer to the instructions supplied with your PC Card.

**Caring for PC Cards**

PC Cards are durable; however, you must treat them with care. The documentation supplied with your PC Card will provide specific information but you should pay attention to the following points:

- To keep out dust and dirt, store PC Cards in their protective sleeves when they are not installed in your notebook.
- Avoid prolonged exposure to direct sunlight or excessive heat.
- Keep the cards dry.
- Do not flex or bend the cards, and do not place heavy objects on top of them.
- Do not force cards into the slot.
- Avoid dropping cards, or subjecting them to excessive vibration.

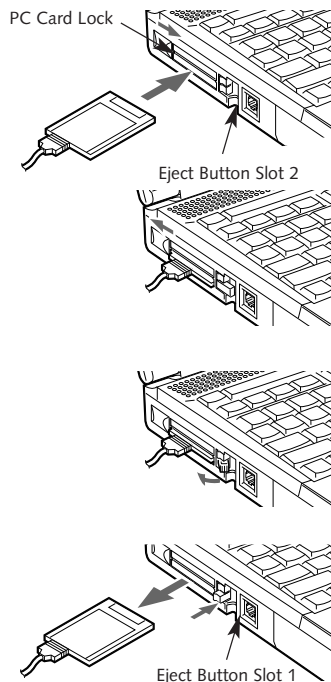
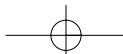


Figure 5-10 Installing and Removing a PC Card



**POINT**

Windows NT 4.0 does not support Zoomed video cards.

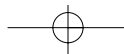
**Installing or Removing PC Cards in Your Notebook**

PC cards are installed in the PC Card slot in the left side panel of your notebook. Some PC Cards will not work when all possible devices are enabled. If a PC Card is not recognized, you will need to open the Control panel, the System folder, and then the Device Manager, and choose a device to disable so that the resources can be used by the PC Card.



**CAUTION**

Do not insert a PC Card into a slot if there is water or any other substance on the card; you may permanently damage the card, your notebook, or both.



**User Installable Features**

**Installing a PC Card**

1. See your PC Card manual for instructions on installation of that specific card.
2. Make sure that there is not already a PC Card in the slot. If there is, eject it, as described in Removing PC Cards.
3. Insert the PC Card in the card slot, with the product name label facing up. (Figure 5-10.)



**CAUTION**

Some PC Cards can only be installed or removed with the power in Suspend mode, some only with power Off. Please check the card documentation for correct usage.



**CAUTION**

Installing or removing a card while your notebook is in the process of going through the power on or power off sequence may damage the card and/or your notebook.

4. When the PC Card is fully inserted, the eject button will pop out.
5. Flip this button toward the front of your notebook to fold it out of the way.
6. When the card is installed, lock it in place by sliding the Lock button toward the front of your notebook. (Figure 5-10.)



**CAUTION**

Windows has a shutdown procedure for PC Cards that must be followed before beginning to remove a card.

**Removing PC Cards**

1. Shutdown operation of the card.
2. Click on the PC Card indicator on the Windows taskbar.
3. Select the card to be removed and click on the Stop button.
4. Verify that the You can safely remove your card message appears.

5. If the device cannot be removed message appears, save all files, close all applications, and exit Windows then shutoff the power with the power switch. (See Power Off on pages 24-25.)

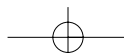


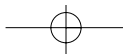
**CAUTION**

If the PC Card has an external connector and cable, do not pull on this cable when removing the card.

**PARALLEL PORT DEVICES**

To connect a parallel interface device to the parallel port, be sure that the connector is the right size and aligned, then push in until it is fully seated. When it is seated tighten the hold-down screws, one on each end of the connector. (See Figure 1-9 on page 10.)





Section Five

### SERIAL PORT DEVICES

To connect an RS-232C device to the serial port, be sure that the connector is the right size and aligned, then push in until it is fully seated. When it is seated tighten the hold-down screws, one on each end of the connector.  
(See Figure 1-9 on page 10.)

### USB DEVICES

When installing a device on the USB Port, be sure that the connector is the right size, aligned, and fully seated. (See Figure 1-8 on page 9.)

#### POINT

Windows NT 4.0 does not support USB devices.

#### CAUTION

Due to the limitations of Windows 95 at the time USB technology was evolving, not all USB devices and/or drivers are guaranteed to work with Windows 95.

### MICROPHONE

Make sure that your mono microphone is equipped with an 1/8" (3.5 mm) mono mini-plug. Make sure the plug is aligned and push it into the jack until fully seated.  
(See Figure 1-8 on page 9.)

### STEREO LINE IN DEVICE

Make sure that your stereo line in audio device, a cassette recorder, for example, is equipped with an 1/8" (3.5 mm) stereo mini-plug. Make sure the plug is aligned and push it into the jack until fully seated. (See Figure 1-8 on page 9.)

### HEADPHONES

Make sure that your stereo headphones are equipped with an 1/8" (3.5 mm) stereo mini-plug. Make sure the plug is aligned and push it into the jack until fully seated.  
(See Figure 1-8 on page 9.)

#### POINT

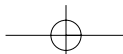
Plugging in headphones disables the built-in stereo speakers.

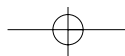
### TELEPHONE LINES

To attach a telephone line to the internal modem, locate the RJ-11 jack on the left side of your notebook. Plug one end of the telephone cable into the telephone line outlet. Orient the telephone cable with the release latch on the connector down. Push it into the jack until it clicks and latches. (See Figure 1-9 on page 10.)

#### CAUTION

The internal modem is not intended for use with Digital PBX systems. Do not connect the internal modem to a digital PBX as it may cause serious damage to the internal modem or your entire notebook. Consult your PBX manufacturer's documentation for details. Some hotels have Digital PBX systems. Be sure to find out BEFORE you connect your modem.





**User Installable Features**

**ETHERNET CABLES**

To attach an Ethernet cable to your internal LAN card, locate the RJ-45 connector on the left side of your notebook. Plug one end of the Ethernet cable into your LAN (see your systems administrator if you are unsure). Orient the Ethernet cable with the release latch on the connector down. Push it into the RJ-45 connector until it clicks and latches.

**MOUSE, KEYBOARD OR KEYPAD**

Make sure the connector on your device is the correct PS/2 type. Align the arrow on the connector to point to the bottom of your notebook and push it in until the connector seats. A mouse, keyboard or keypad may be installed and automatically recognized by your notebook without restarting or changing setups. (See Figure 1-8 on page 9.)

**EXTERNAL MONITOR**

You may install an external monitor on the external monitor port on the rear panel of your notebook. Make sure that the wide side of the connector is up and attach it to the port by pushing in until it is seated, then tighten the hold-down screw on each end of the connector. (See Figure 1-9 on page 10.)

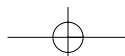


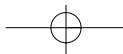
**CAUTION**

Pressing **F10** while holding down the **Fn** key allows you to change your selection of where to send your display video. Each time you press the combination of keys you will step to the next choice. The choices, in order, are: built-in display panel only, external monitor only, or both built-in display panel and external monitor.

**THEFT PREVENTION LOCK**

A physical security system lock can be installed on the right side of your notebook. (See Figure 1-8 on page 9 for the location of the lock slot.) Simply insert the key end of your security system in the slot, rotate 90 degrees and lock. (See Figure 1-8 on page 9.)





Section Five

**EXTERNAL INSTALLATION OF A FLOPPY DISK DRIVE**

To install a floppy disk drive externally, you must mount the modular floppy disk drive in the optional external adapter and attach the external adapter to the connector on your notebook.

**To connect a floppy disk drive externally:**

1. Close all files and exit all applications.
2. Turn off power to your notebook, close the display and remove the AC adapter. (See pages 24-25 for more information.)
3. Mount the floppy disk drive in the external adapter by aligning the connector ends and pushing the drive into the external adapter until it clicks into place.
4. Open the external floppy disk drive port cover on the left side panel of your notebook, (see Figure 5-11), by gently pulling on the right side of the cover and then tilting it open.

5. Align the connector of the external floppy disk drive adapter with the connector towards the body of your notebook with the wide side of the connector up. (Figure 5-11)
6. Insert the connector of the external floppy disk drive adapter firmly into the port on your notebook until it clicks.

**To disconnect an external floppy disk drive:**

1. Close all files and exit all applications
2. Turn off power to your notebook, close the display and remove the AC adapter. (See pages 24-25 for more information.)
3. Squeeze together firmly on the release buttons on either side of the external floppy disk drive connector next to the body of your notebook. (Figure 5-11.)
4. Pull the connector free.
5. Close the floppy disk drive port cover on your notebook and press it shut until it latches.
6. Remove the floppy disk drive from the external adapter.

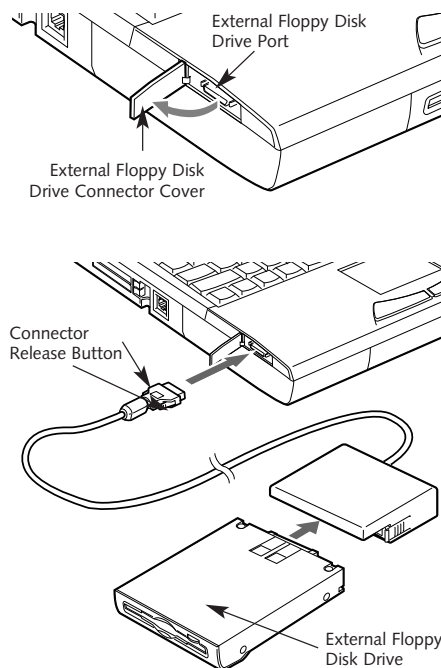
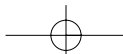
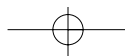


Figure 5-11 External Installation of a Floppy Disk Drive.





**User Installable Features**

**MEMORY UPGRADE MODULE**

Your notebook has 32MB of on-board SDRAM. To increase your memory capacity you may install a memory upgrade module in the memory upgrade compartment in the bottom of your notebook. The memory upgrade module is a Small Outline dual-in-line memory module (SODIMM). You may add modules of different capacity.

**POINT**

If your LifeBook E Series is a Built-to-order configuration with 64 or 96MB of pre-installed SDRAM you will already have a memory module DIMM installed in the upgrade compartment. To replace or remove the module, follow the directions that precede.

**To Install a Memory Upgrade Module:**

1. Turn off power to your notebook using the power switch, (*see Power Off on pages 24-25*), and remove any power adapter (AC or auto/airline).
2. Make sure that all the connector covers are closed.
3. Turn the notebook bottom side up, with the front panel toward you.
4. Remove the screws at the front of the memory upgrade module compartment. (*See Figure 5-12.*)
5. Remove the cover by tilting the front edge up and then pulling forward until the tabs on the cover are free. (*See Figure 5-12.*)

**CAUTION**

Never remove screws except the ones specifically shown in the directions for installing and removing the memory upgrade module.

6. Remove the memory upgrade module from the static guarded sleeve.

**CAUTION**  
The memory upgrade module can be severely damaged by electro-static discharge (ESD). Be sure you are properly grounded when handling and installing the module.

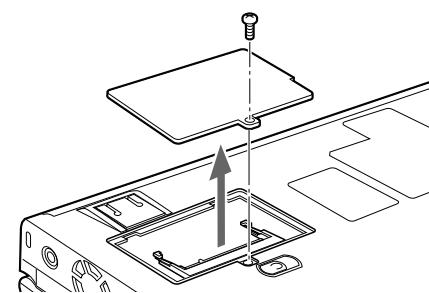
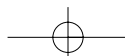
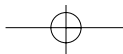


Figure 5-12 Opening the Memory Upgrade Compartment





Section Five

7. Align the memory upgrade module with the part side up. Align the connector edge of the memory upgrade module with the connector slot in the compartment. The connector will be pointing toward the rear of the notebook. (Figure 5-13.)

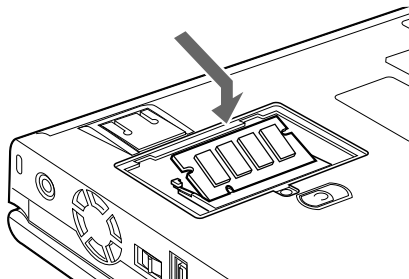


Figure 5-13 Installing a Memory Upgrade Module

8. Insert the memory upgrade module at a 45° angle. (Figure 5-13.) Press the connector edge of the module firmly down and into the connector.

9. Press the memory upgrade module down into the compartment until it lodges under the retaining clip. You will hear a click when it is properly in place.
10. Replace the cover by hooking the tabs under the rear edge of the compartment opening and tilting down until flush with the bottom of your notebook.
11. Replace the screws.

The memory upgrade module is not something you routinely remove from your notebook. Once it is installed, you can leave it in place unless you want to increase system memory capacity.



**CAUTION**

Before you install or remove the memory upgrade module, save changes and close all files and turn power off to your notebook. (See *Power Off* on pages 24-25.)

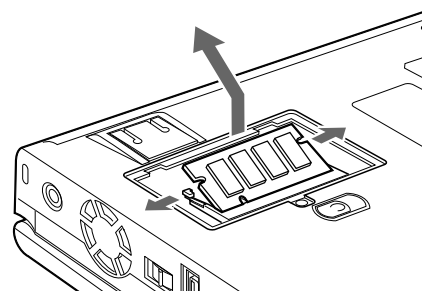
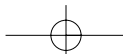


Figure 5-14 Removing a Memory Upgrade Module

**To Remove a Memory Upgrade Module:**

1. Perform steps 1 through 5 of To Install a Memory Upgrade Module.
2. Pull the clips sideways away from each side of the memory upgrade module at the same time. (Figure 5-14.)
3. While holding the clips out, remove the module from the slot by lifting it up and pulling towards the front of your notebook. (Figure 5-14.)





**User Installable Features**

- 4. Store the memory upgrade module in a static guarded sleeve.
- 5. Replace the cover by following the instructions in steps 10 and 11 of the instructions for To Install a Memory Upgrade Module, or install a new memory upgrade module and then replace the cover by following the instructions in steps 7 through 11 of the instructions To Install a Memory Upgrade Module.



**CAUTION**

The memory upgrade module can be severely damaged by electro-static discharge (ESD). Be sure you are properly grounded when handling and removing the module.

**Checking the Computer Recognition of New Memory Capacity**

When you have changed system memory capacity by adding or removing a memory upgrade module, be sure to check that your notebook has recognized all of the memory. You can check memory capacity by looking at the Main menu of the setup utility:

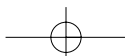
1. Turn on power using the power switch.
2. Enter the setup utility by pressing the **F2** key as soon as the Fujitsu logo appears on the screen.
3. The System Memory and the Extended Memory capacity, as detected by your notebook during the Power On Self Test (POST), are displayed at the bottom of the Main menu screen.

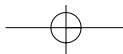
Example: A system with 32MB of memory will display 640K System Memory, 31MB Extended Memory.

When you have installed additional memory, the display should change. For example for:

| Total RAM Installed | System Memory | Extended Memory |
|---------------------|---------------|-----------------|
| 32 MB               | 640 K         | 31.7 MB         |
| 48 MB               | 640 K         | 48.5 MB         |
| 64 MB               | 640 K         | 64.5 MB         |
| 96 MB               | 640 K         | 97 MB           |
| 128 MB              | 640 K         | 128.5 MB        |

If the total memory displayed is not what you believe it should be, check that your memory upgrade module is properly installed. If it is properly installed and the capacity is not correctly recognized, see the Troubleshooting Section starting on page 150.





Section Five

**CAUTION**

Follow the instructions that come with your LANdock or Port Replicator. The instructions and illustrations in this manual are only to serve as a guideline. The LANdock manual that is included with the LANdock unit supersedes these instructions.

**CAUTION**

Make sure you always have a battery installed in Multi-function Bay 1 or 2 when hot-docking your notebook. Failure to do so can severely damage the system.

**LANDOCK**

**To Hot Dock your Notebook in a LANdock with Windows 95 or Windows 98**

1. To use a docking device with your notebook they both must be on a flat surface.

2. Remove all connections from the rear panel of your notebook. (See Figure 1-9 on page 10.)
3. Make sure that the adjustment feet are flat against the bottom of the notebook and the covers of the connectors, both rear panel and right side panel, are closed.
4. Make sure that the slide cover in the rear panel is completely open.
5. Set your notebook on the Docking Station Leveler, making sure that the Alignment pins on the leveler (Figures 5-15 and 5-17.) fit into the Docking Alignment receptacles in the bottom of your notebook (Figure 1-10 on page 11.)

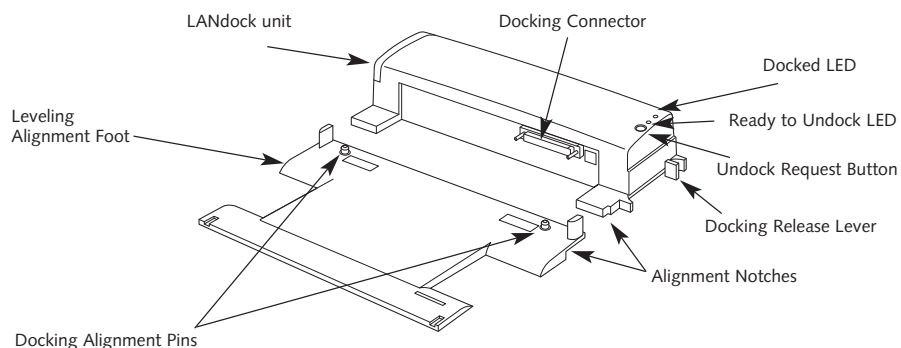
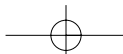


Figure 5-15 LANdock Front View





**User Installable Features**

- 6. Arrange the notebook/leveler combination to align the docking connector on the docking device body with the Docking port on your notebook and the notches on the leveler with the notches on the docking device body.
- 7. Push together firmly.
- 8. Lock in place by pulling the Docking Release lever forward.
- 9. Verify that docking is complete by checking that the LifeBook Docked LED is illuminated. (See Figure 5-16.)
- 10. Your notebook is ready to use. (When setting it up for the first time you must use the power switch.)

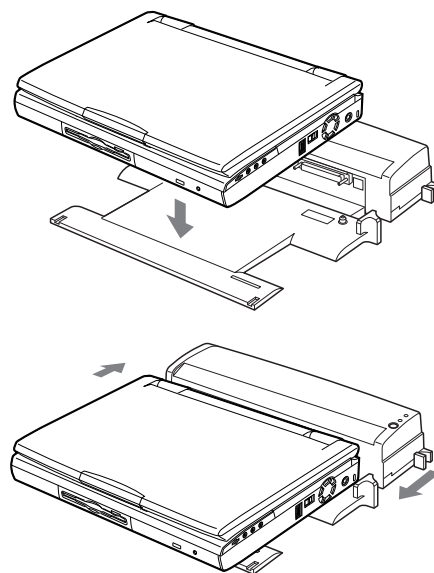


Figure 5-17 Installing a LANdock

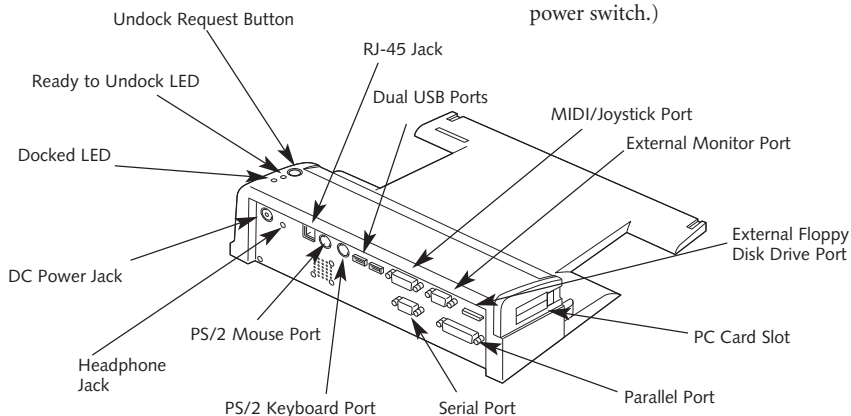
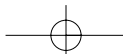
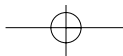


Figure 5-16 LANdock Rear View





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*Section Five* **POINT**

You may also put your notebook in Suspend mode to dock the unit. It is always safe to dock the unit with the power switch off.

**Connecting Devices to the LANdock or Port Replicator**

Connect devices to your LANdock or Port Replicator in exactly the same way you would your notebook. Figure 5-16 shows the location of LANdock ports and jacks. Figure 5-19 shows the location of the Port Replicator ports and jacks. Remember that on the LANdock and the Port Replicator there are separate ports for mouse and keyboard. You must use the correct one.

**To Hot-Undock Your Notebook from the LANdock with Windows 95 and Windows 98**

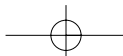
1. From the Start menu click on Eject PC or press the Undock button on the LANdock.
2. Wait for the Safe to Undock LED to illuminate, even if a message appears on your screen saying that you may undock.
3. Your notebook will not suspend.
4. Push the lever on the side of the station backward until the docking device connectors are completely clear of your notebook.
5. Very carefully lift your notebook clear of the Alignment pins in the bottom.

 **POINT**

If the notebook power switch is turned off it is always safe to undock. You do not have to turn on your notebook and use the Eject PC feature.

 **CAUTION**

When your notebook is mounted in the LANdock it is essentially a desktop PC not a mobile notebook. **DO NOT** unplug the docking device with the operating system active. You may cause a loss of data and a system error when you restart your notebook.





**User Installable Features**

**Using Your Notebook**

**While it is Installed in the LANdock**

There are a few differences you will notice between using your notebook in and out of the LANdock.

In the LANdock you have added capabilities:

- In the Windows 95 Start menu there is an Eject PC choice between the Suspend mode and Shutdown selections. (Use the Eject PC choice to enable the undocking of your LifeBook.)
- In the Windows 98 Start menu there is an Eject PC choice above the Shutdown selection. (Use the Eject PC choice to enable the undocking of your LifeBook.)
- Both an external mouse and an external keyboard can be connected at the same time. Be sure to plug them into the correct PS/2 ports.
- There is an RJ-45 jack for 10/100 Base-T Ethernet connections.
- There is an additional PC Card slot.

**PORT REPLICATOR**

To connect your notebook to the Port Replicator, follow the docking instructions that come with the Port Replicator.

**Using Your Notebook**

**While it is Installed in the Port Replicator**

There are a few differences you will notice between using your notebook in and out of the Port Replicator.

- Both an external mouse and an external keyboard can be connected at the same time. Be sure to plug them into the correct PS/2 ports.

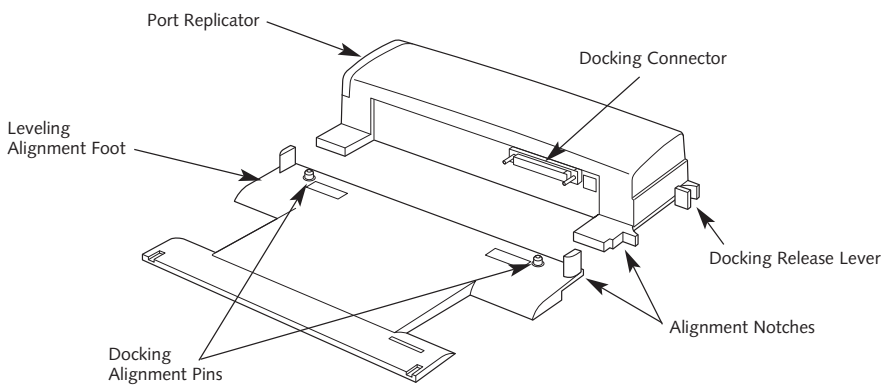
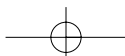


Figure 5-18 Port Replicator Front View





Section Five

**CAUTION**

When your notebook is mounted in the Port Replicator it is essentially a desktop PC not a mobile notebook. DO NOT unplug the Port Replicator with the operating system active. You may cause a loss of data and a system error when you restart your notebook.

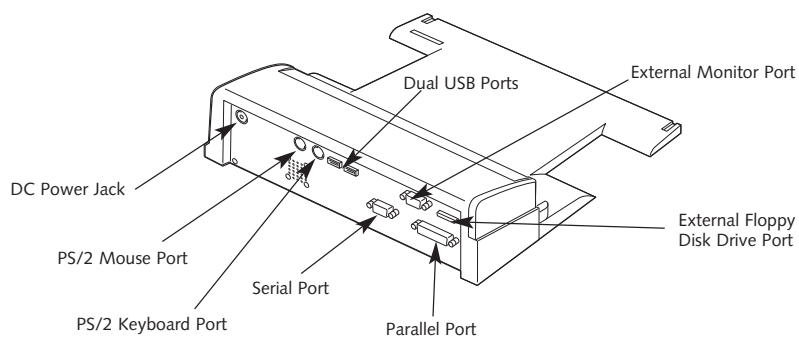
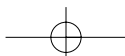


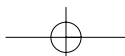
Figure 5-19 Port Replicator Rear View

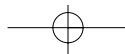




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| Modem Setup and Commands . . . . .             | 173 |
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 Section Six

## SECTION SIX TROUBLESHOOTING

The LifeBook E Series from Fujitsu is sturdy and subject to few problems in the field. However, you may encounter simple setup or operating problems that you can solve on the spot, or problems with peripheral devices, that you can solve by replacing the device. The information in this section helps you isolate and resolve some of these straightforward problems, and identify failures that require service.

### IDENTIFYING THE PROBLEM

If you encounter a problem, go through the following procedure before pursuing complex troubleshooting:

1. Turn off your notebook using the power switch on the right side panel.
2. Make sure the AC adapter is plugged into your notebook and to an active AC power source.
3. Make sure that any card installed in the PC Card slot is seated properly. You can also remove the card from the slot, thus eliminating it as a possible cause of failure.
4. Make sure that any devices connected to the external connectors are plugged in properly. You can also disconnect such devices, thus eliminating them as possible causes of failure.
5. Turn on your notebook using the power switch. Make sure it has been off at least 10 seconds before you turn it on.
6. Go through the boot sequence.
7. If the problem has not been resolved, refer to the problem guide table, which follows, for more detailed troubleshooting information. (*Page 151 has an index to the table.*)
8. If you have tried the solutions suggested in Specific Problems without success, contact your support representative:  
toll free 1-800-8FUJITSU (1-800-838-5487)  
fax 1-901-259-5700  
e-mail 8fujitsu@fpc.fujitsu.com  
Web Site <http://www.8fujitsu.com>.



### CAUTION

Do not return a failed notebook to your supplier until you have talked to a support representative.

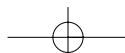
Before you place the call, you should have the following information ready so that the customer support representative can provide you with the fastest possible solution:

- Product name.
- Product configuration number.
- Product serial number.
- Purchase date.



### POINT

If you keep notes about what you have tried, your support representative may be able to help you more quickly by giving additional suggestions over the phone.





**Troubleshooting**

- Conditions under which the problem occurred.
- Any error messages that have occurred.
- Hardware configuration.
- Type of printer connected, if any.

See the Configuration Label on the bottom of your notebook for configuration and serial numbers. (Refer to Figure 1-10 on page 11.)

**SPECIFIC PROBLEMS**

**Using PC-Doctor**

PC-Doctor is a diagnostic program by Watergate Software, Inc. which comes pre-installed on your notebook. If you are an experienced computer user you may find it useful, however, it is intended primarily to help your Fujitsu support representative better serve you. When you call for help your support representative may ask you to setup your notebook for modem operation. You will be told

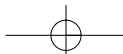
what to do step by step, and then to hang up the phone and plug your phone line into the back of your notebook. Your support representative will then use the service computer to call your notebook and perform diagnostic tests to find the nature of your problem. Messages will be displayed on the screen explaining what is being done and giving any instructions that you need.

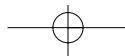
**User Problem Guides**

When you have problems with your notebook, try to find the symptoms under the **Problem** column of the table for the feature giving you difficulty. You will find a description of common causes for that symptom under the column **Possible Cause** and what, if anything, you can do to correct the condition under **Possible Solution**.

Remember that it helps to keep notes of what you have tried and the results when you are troubleshooting.

| <b>Problem</b>                               | <b>Page</b> |
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**Section Six****Problem****Audio Problems**

There is no sound coming from the built-in speakers.

**Possible Cause**

1. The volume knob is turned too low.
2. The software volume control is set too low.
3. Headphones are plugged into your notebook.
4. BIOS audio settings are incorrect.
5. Software driver is not configured correctly.

**Possible Solution**

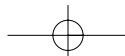
1. Adjust the volume control knob on the right side of your notebook.
2. Adjust the sound volume control settings in your software, both operating system and applications.
3. Plugging in headphones disables the built-in speakers, remove the headphones.
4. Set the BIOS setup utility, Multimedia Device Configuration submenu of the Advanced menu to the default values. (See pages 84-85.)
5. Refer to your application and operating system documentation for help.

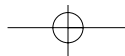
**CD-ROM Drive Problems**

Notebook fails to recognize CD-ROM.

1. Shipping card is still in the CD-ROM drive tray.
2. CD-ROM is installed with label face down.
3. CD-ROM is not pushed down onto raised center circle of drive.
4. CD-ROM tray is not latched shut.

1. Remove shipping card and replace CD in tray.
2. Open CD-ROM tray and re-install CD with proper orientation.
3. Open CD-ROM tray and re-install CD properly.
4. Push on the front of the CD-ROM tray until it latches.





## Troubleshooting

### Problem

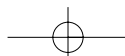
The CD-ROM Access indicator on the Status Indicator panel blinks at regular intervals when no CD is in the tray or the CD-ROM drive is not installed.

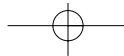
### Possible Cause

5. Setup utility is set to something other than CD-ROM or Auto for the Secondary Master Controller.
  6. Wrong drive designator was used for CD-ROM in the application.
  7. Windows CD auto insertion function is disabled.
1. The Windows CD auto insertion function is active and is checking to see if a CD is ready to run.

### Possible Solution

5. Revise BIOS settings to set the Secondary Master correctly. (See *Main menu and Primary Master submenu pages 75-78 for more information.*)
  6. Verify the drive designator used by the application is the same as the one used by the operating system. When the operating system is booted from a CD-ROM drive designations are automatically adjusted.
  7. Start the CD from the desktop or application software or re-enable the Windows CD auto insertion function. (See *CD-ROM Access Indicator on pages 30-31 for more information.*)
1. This is normal. You can disable this function if you wish. (See *CD-ROM Access Indicator on pages 30-31 for more information.*)






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 Section Six
**Problem****Possible Cause****Possible Solution****Docking Problems**

Notebook does not turn on when installed in Docking Station.

1. LANdock AC adapter is not plugged in.
2. Notebook is not properly seated in the LANdock.

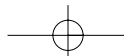
1. Provide power to the LAN-Docking Station.
2. Remove and re-dock your notebook, and verify that the Docked LED illuminates.

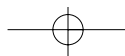
**Floppy Disk Drive**

You cannot access your floppy disk.

1. Security is set to protect access to floppy disk data.
2. Floppy disk is not loaded correctly.
3. BIOS setup utility has `Diskette Controller: Disabled`.
4. The floppy disk drive may not be properly installed.
5. You tried to write to a write protected floppy disk.

1. Verify your password and security settings.
2. Eject floppy disk, check orientation and re-insert. (*See Floppy Disk Drive on pages 42-43.*)
3. Revise the setup utility Main menu settings. (*See Main Menu on page 72.*)
4. Remove and re-install your floppy disk drive. (*See Multi-function Bays on pages 129-131, or External Installation of a Floppy Disk Drive on page 140.*)
5. Eject the floppy disk and set it to write enabled. (*See page 43.*)





## Troubleshooting

### Problem

#### Hard Drive Problems

You can not access your hard drive.

### Possible Cause

1. The setup utility is set to something other than the characteristics of your internal or optional second hard drive.
2. The wrong drive designator was used by an application when a bootable CD-ROM was used to start the notebook.
3. Security is set so operating system can not be started without a password.

### Possible Solution

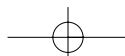
1. Revise BIOS settings to set both Primary Master and Primary Slave correctly. (See *Main Menu and Primary Master Submenu pages 75-78 for more information.*) (Internal is Primary Master and optional second is Primary Slave.)
2. Verify drive designator used by application is in use by the operating system. When the operating system is booted from a CD-ROM, drive designations are automatically adjusted.
3. Verify your password and security settings. (See *Security menu on page 101.*)

#### Keyboard or Mouse Problems

The built-in keyboard does not seem to work.

1. The notebook has gone into Suspend mode.
2. Your application has locked out your keyboard.

1. Push the Suspend/Resume button.
2. Try to use the ErgoTrac pointing device to access the Start menu and then the ShutDown menu and restart the System. If this fails then turn your notebook off, wait 10 seconds or more, and then turn it on using the power switch.





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**S e c t i o n   S i x****Problem**

You have installed an external keyboard.

**Possible Cause**

1. Your external device is not properly installed.
2. Your operating system software is not setup with the correct software driver for that device.
3. Your mouse or keyboard is connected to the wrong PS/2 port on the LANdock.

**Possible Solution**

1. Re-install your device. (See *Mouse or Keyboard on page 139.*) or mouse, and it does not seem to work.
2. Check your device and operating system documentation and activate the proper driver.
3. Plug the mouse into the PS/2 Mouse port and the external keyboard or numeric key pad into the PS/2 Keyboard port. (Figure 1-9 on page 10.)

You have connected an external keyboard or a mouse and it seems to be locking up the system.

1. Your operating system software is not setup with the correct software driver for that device.
2. Your system has crashed.

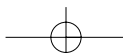
1. Check your device and operating system documentation and activate the proper driver.
2. Restart your system by shutting down and/or turning off the power, waiting at least 10 seconds and then turning the power on again.

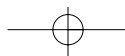
**Memory Problems**

Your power on screen or Main menu of the BIOS setup utility information does not show the correct amount of installed memory.

1. Your memory upgrade module is not properly installed.
2. You have a memory failure.

1. Remove and re-install your memory upgrade module. (See *Memory Upgrade Module on pages 141-143.*)
2. Check for Power On Self Test (POST) messages. (See *pages 170-172 for possible messages and their meanings.*)





## Troubleshooting

### Problem

#### Modem Problems

Messages about modem operation.

#### Parallel, Serial, and USB Device Problems

You have installed a parallel-port device, a serial-port device or a USB device. Your notebook does not recognize the device, or the device does not seem to work properly.



#### CAUTION

Windows NT 4.0 does not support USB devices.



#### CAUTION

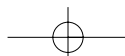
Due to the limitations of Windows 95 at the time USB technology was evolving, not all USB devices and/or drivers are guaranteed to work with Windows 95.

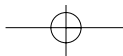
### Possible Cause

1. Messages about modem operation are generated by whichever modem application is in use.
1. The device is not properly installed.
2. The device may have been installed with an application running and your notebook doesn't know it's there.
3. Your software may not have the correct software driver active.
4. You may have the wrong I/O address selected for your device.
5. Your device and another device are assigned the same I/O address.

### Possible Solution

1. See your application software documentation for additional information.
1. Remove and re-install the device. (See *Parallel Port Devices* on page 137, *Serial Port on Devices* on page 138, or *USB Devices* on page 138.)
2. Close your application and restart your notebook.
3. See your software documentation and activate the correct driver.
4. See your device documentation and software documentation to determine the required I/O address.
5. Check all I/O addresses in the BIOS Setup Utility and your other installed hardware and software and make sure there are no duplications.





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Section Six

**Problem**

**PC Card Problems**

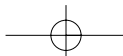
A card inserted in the PC Card slot does not work or is locking up the system.

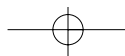
**Possible Cause**

1. The card is not properly installed.
2. The card may have been installed with an application running and your notebook doesn't know it's there.
3. Your software may not have the correct software driver active.
4. You may have the wrong I/O address selected for your PC Card device.
5. Your PC Card device and another device are assigned the same I/O address.

**Possible Solution**

1. Remove and re-install the card.  
(See *PC Cards* on pages 135-137.)
2. Close your application and restart your notebook.
3. See your software documentation and activate the correct driver.
4. See your PC Card documentation to determine the required I/O address.
5. Check all I/O addresses in the BIOS setup utility and your other installed hardware and make sure there are no duplications.





**T r o u b l e s h o o t i n g**

**Problem**

**Power Failures**

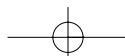
You turn on your notebook and nothing seems to happen.

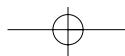
**Possible Cause**

1. The installed primary battery is completely discharged, there is no optional second battery installed and there is no Power adapter (AC or auto/airline) installed.
2. The primary battery is installed but is completely discharged, there is no optional second battery installed and the Power adapter (AC or auto/airline) is not plugged in properly.

**Possible Solution**

1. When all the batteries are dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (See page 41.) Check the Status Indicator panel to determine the presence and condition of the batteries. (See pages 28.) Install the primary battery if it is not installed or a Power adapter if all batteries are dead or unavailable.
2. When the batteries are dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (See page 41.) Check the Status Indicator panel to determine the presence and condition of the batteries and adapter. (See Figure 3-1 on page 28.) Verify that your adapter is connected correctly. (See page 14.)





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Section Six

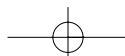
**Problem**

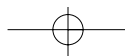
**Possible Cause**

**Possible Solution**

3. The primary battery is installed but is completely discharged, there is no optional second battery installed and the Power adapter (AC or auto/airline) has no power from the AC outlet, airplane seat jack, or the car's cigarette lighter.
4. The primary battery is installed but is completely discharged, there is no optional second battery installed and the Power adapter (AC or auto/airline) is faulty.

3. When the battery is dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (See page 41.) Check the Status Indicator cigarette lighter panel to determine the presence and condition of the batteries and adapter. (See Figures 3-1 on page 28.) Move the AC cord to a different outlet, check for a line switch or tripped circuit breaker for the AC outlet, if you are using an auto/airline adapter in a car make sure the ignition switch is in the On or Accessories position.
4. When the battery is dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (See page 41.) Verify the cause using the Status Indicator panel to determine the presence and condition of the batteries and adapter. (See Figure 3-1 on page 28.) Try a different Power adapter or install a charged optional second battery.





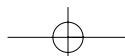
**T r o u b l e s h o o t i n g**

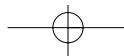
**Problem**

**Possible Cause**

**Possible Solution**

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>5. Power switch is already in the On position.</li><br/><li>6. There is no battery installed and there is no Power adapter (AC or auto/airline) installed.</li><br/><li>7. The primary battery is installed but is faulty, there is no optional second battery installed and there is no Power adapter (AC or auto/airline) installed.</li></ul> | <ul style="list-style-type: none"><li>5. Try the Suspend/Resume button. If that doesn't work, slide your power switch firmly to the front, pause 10 seconds or more and then firmly to the rear.</li><li>6. Use the Status Indicator panel to verify the presence and condition of the batteries. (See <i>Figure 3-1 on page 28.</i>) Install a Power adapter or install a battery in one of the Multi-function bays in the front of your notebook. (See <i>Multi-function Bay Devices on pages 129-131.</i>) If the battery is not charged use a Power adapter until it is charged.</li><li>7. Use the Status Indicator panel to verify the presence and condition of the batteries. (See <i>Figure 3-1 on page 28.</i>) If a battery is indicating a short, remove that battery and operate from another power source or replace that battery.</li></ul> |
|--|--|

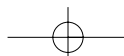


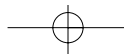


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Section Six

| <b>Problem</b>                         | <b>Possible Cause</b>  | <b>Possible Solution</b>   |
|--|--|--|
| Your notebook turns off all by itself. | <ol style="list-style-type: none"><li>8. The battery or batteries are low.</li></ol><br><ol style="list-style-type: none"><li>1. The power management parameters are set for auto timeouts which are too short for your operating needs.</li><li>2. You are operating on battery only and have ignored a low battery alarm until the batteries are all at the dead battery state and your machine has gone into Dead Battery Suspend mode.</li></ol> | <ol style="list-style-type: none"><li>8. If the batteries are dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (See page 41.) Check the Status Indicator panel to determine the presence and condition of the – batteries. (See Figure 3-2 on page 30.) Use a Power adapter to operate until a battery is charged or install a charged battery.</li><li>1. Use the keyboard or pointer and if that does not restore operation, push the Suspend/Resume button. Check the power management settings or close your applications and go to the setup utility Power Savings menu and adjust the timeout values to better suit your operation needs.</li><li>2. Install a Power adapter and then push the Suspend/Resume button. (See Low Battery State on page 41.)</li></ol> |





**Troubleshooting**

**Problem**

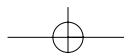
Your notebook won't work on battery alone.

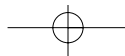
**Possible Cause**

3. You have a battery failure.
4. Your Power adapter has failed or lost its power source.
1. The installed batteries are dead.
2. No batteries are installed.
3. The batteries are improperly installed.
4. Your installed batteries are faulty.

**Possible Solution**

3. Verify the condition of the batteries using the Status Indicator panel (*Figure 3-2 on page 30*), and replace or remove any that are shorted.
4. Make sure the adapter is plugged in and the outlet has power.
1. When the batteries are dead there will be a beep when the power switch is turned on and the notebook will immediately go into Dead Battery Suspend mode. (*See page 41.*) Replace the battery with a charged one or install a Power adapter.
2. Install a charged battery. (*See Multi-function Bay Devices on pages 129-131.*)
3. Verify that the batteries are properly connected by re-installing them.
4. Verify the condition of the batteries using the Status Indicator panel and replace or remove any that are shorted.





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Section Six

**Problem**

The batteries seem to discharge too quickly.

**Possible Cause**

1. You are running an application which uses a great deal of power because of frequent hard drive access or CD-ROM/DVD access, use of a modem card or of a LAN card.
2. The power savings features may be disabled.
3. The brightness is turned all the way up.
4. The batteries are very old.
5. The batteries have been exposed to high temperatures.
6. The batteries are too hot or too cold.  
(See *Batteries* on page 26.)

**Possible Solution**

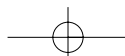
1. Use both the primary battery and an optional second battery and/or use a Power adapter for this application when at all possible.
2. Check the power management and/or setup utility settings in the Power Savings menu (see pages 107-112), and adjust according to your operating needs.
3. Turn down the brightness adjustment. The higher the brightness the more power your display uses.
4. Replace the batteries.
5. Replace the batteries.
6. Restore the notebook to normal operating temperature. (The Charging icon on the Status Indicator panel will flash when the battery is outside its operating range.)

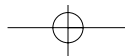
**Shutdown and Startup Problems**

The Suspend/Resume button does not work.

1. The Suspend/Resume button is disabled from the Advanced submenu of the Power menu of the setup utility.

1. Enable the button from the setup utility.





## Troubleshooting

### Problem

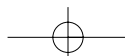
The system powers up, and displays power on information, but fails to load the operating system.

### Possible Cause

2. You did not hold the button in long enough.
3. There may be a conflict with the application software.
1. The boot sequence settings of the setup utility are not compatible with your configuration.
2. You have a secured system requiring a password to load your operating system.
3. Internal hard drive was not detected.

### Possible Solution

2. Hold the button longer. This may need to be a few seconds if your application is preventing the CPU from checking for button pushes.
3. Close all applications, and try the button again.
1. Set the operating source by pressing the **Esc** key while the Fujitsu logo is on screen or use the **F2** key and enter the setup utility and adjust the source settings from the Boot menu on page 103.
2. Make sure you have the right password. Enter the setup utility and verify the Security settings and modify them as appropriate. (See *Security Menu on pages 101-106.*)
3. Use the BIOS setup utility Main menu, Primary Master submenu to try to auto detect the internal hard drive.





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Section Six

**Problem**

An error message is displayed on the screen during the notebook turn on (boot) sequence.

**Possible Cause**

1. Power On Self Test (POST) has detected a problem.

**Possible Solution**

1. See the Power On Self Test (POST) Messages (*pages 170-172*) to determine the meaning and severity of the problem. Not all messages are errors; some are simply status indicators.

Your notebook appears to change setup parameters when you start it.

1. BIOS setup changes were not saved when you made them and exited the BIOS setup utility returning it to previous settings.
2. The BIOS CMOS hold-up battery has failed.

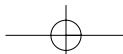
1. Make sure you select Save Changes And Exit when exiting the BIOS setup utility.
2. Contact your support representative for repairs. This is not a user serviceable part but has a normal life of 3 to 5 years.

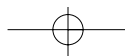
**Video Problems**

The built-in display is blank when you turn on your notebook.

1. Something is pushing on the Closed Cover switch. (*See Figure 2-2 on page 15.*)
2. The notebook is set for an external monitor only.

1. Clear the Closed Cover switch.
2. Pressing F10 while holding down the **Fn** key allows you to change your selection of where to send your display video. Each time you press the combination of keys you will step to the next choice. The choices, in order, are built-in display only, external monitor only, both built-in display and external monitor.





**T r o u b l e s h o o t i n g**

**Problem**

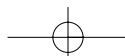
The display goes blank by itself after you have been using it.

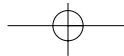
**Possible Cause**

- 3. The angle of the display and the brightness settings are not adequate for your lighting conditions.
- 4. The power management timeouts may be set for very short intervals and you failed to notice the display come on and go off again.
- 5. The notebook turned on with a series of beeps.
- 1. The notebook has gone into Video timeout, Standby mode, Suspend mode or Save-to-Disk mode because you have not used it for a period of time.
- 2. Something is pushing on the Closed Cover switch. (See Figure 2-2 on page 15.)

**Possible Solution**

- 3. Move the display and the brightness control until you have adequate visibility.
- 4. Press any key or move the pointer, if this doesn't work press the Suspend/Resume button. (The display may be shut off by Standby mode, Auto Suspend, or Video Timeout.)
- 5. Power On Self Test (POST) has detected a failure which does not allow the display to operate. Contact your support representative.
- 1. Use the keyboard or pointer and if that does not restore operation, push the Suspend/Resume button. You may want to change your Power Management settings (page 48) or close your application and go to the setup utility Power Savings menu (page 107) and adjust the timeout values to better suit your operation needs.
- 2. Clear the Closed Cover switch.

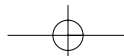


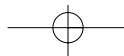



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 Section Six

| Problem   | Possible Cause   | Possible Solution  |
|---|--|--|
| The Built-in Display does not close.  | 3. The power management timeouts may be set for very short intervals and you failed to notice the display come on and go off again.<br><br>1. A foreign object, such as a paper clip, is stuck between the display and the keyboard. | 3. Press any key or move the pointer, if this doesn't work press the Suspend/Resume button.<br><br>1. Remove all foreign objects from the keyboard.  |
| The Built-in Display has bright or dark spots.  | 1. If the spots are very tiny and few in number, this is normal for a large LCD display.<br>2. If the spots are numerous or large enough to interfere with your operation needs.   | 1. This is normal; do nothing.<br>2. Display is faulty; contact your support representative.   |
| The application display uses only a portion of your screen and is surrounded by a dark frame. | 1. You are running an application that does not support 800 x 600 pixel resolution display and display compression is enabled.   | 1. Display compression gives a clearer but smaller display for applications that do not support 800 x 600 pixel resolution. You can fill the screen but have less resolution by changing your display compression setting, ( <i>See Video Features Submenu of the Advanced Menu on pages 93.</i> ) |





## Troubleshooting

### Problem

You have connected an external monitor and it does not come on.

### Possible Cause

1. Your BIOS setup is not set to enable your external monitor.
2. Your external monitor is not properly installed.
3. Your operating system software is not setup with the correct software driver for that device.
4. Your external monitor is not compatible with your notebook.

### Possible Solution

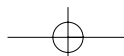
1. Try toggling the video destination by pressing **Fn** and **F10** together or check your BIOS setup and enable your external monitor. (See the *Video Features Submenu of the Advanced Menu on page 93.*)
2. Reinstall your device. (See *External Monitor on page 139.*)
3. Check your device and operating system documentation and activate the proper driver.
4. See your monitor documentation and the External Monitor Support portions of Appendix A on pages 182-185.

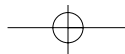
### Miscellaneous Problems

An error message is displayed on the screen during the operation of an application.

1. Application software often has its own set of error message displays.

1. See your application manual and help displays screens for more information. Not all messages are errors; some may simply be status.






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 Section Six
 

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### POWER ON SELF TEST MESSAGES

The following is an alphabetic list of error-and-status messages that Phoenix BIOS and/or your operating system can generate and an explanation of each message. Error messages are marked with an \*. Comments in italics are suggestions of possible actions for you to consider, or risks resulting from ignoring the message. The most common errors are marked with a #. If an error message is displayed that is not in this list, write it down and check your operating system documentation both on screen and in the manual. If you can find no reference to the message and its meaning is not clear, contact your support representative for assistance.

**nnnn Cache SRAM Passed** Where nnnn is the amount of system cache in kilobytes successfully tested by the Power On Self Test. (This can only appear if you have an SRAM PC Card installed.)

\*Diskette drive A error or Diskette drive B error Drive A: or B: is present but fails the BIOS Power On Self Test diskette tests. Check

to see that the drive is defined with the proper diskette type in the Setup Utility, (*see page 69*) and that the diskette drive is installed correctly. If the disk drive is properly defined and installed, avoid using it and contact your support representative.

**\*Extended RAM Failed at offset: nnnn** Extended memory not working or not configured properly. If you have an installed memory upgrade module, verify that the module is properly installed. If it is properly installed, you may want to check your Windows Setup to be sure it is not using unavailable memory until you can contact your support representative.

**nnnn Extended RAM Passed** Where nnnn is the amount of memory in kilobytes successfully tested.

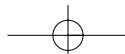
**\*Failing Bits: nnnn** The hex number nnnn is a map of the bits at the memory address (in System, Extended, or Shadow memory) which failed the memory test. Each 1 (one) in the map indicates a failed bit. This is a serious fault that

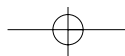
might cause you to lose data if you continue. Contact your support representative.

**\*Fixed Disk x Failure or Fixed Disk Controller Failure** (where x = 1-4) Fixed disk is not working or not configured properly. This may mean that the hard drive type identified in your Setup Utility does not agree with the type detected by the Power On Self Test. Run the Setup Utility to check for the hard drive type settings and correct them if necessary. If the settings are OK and the message appears when you restart the system, there may be a serious fault which might cause you to lose data if you continue. Contact your support representative.

**\*Incorrect Drive A type – run SETUP** Type of floppy drive A: not correctly identified in Setup. This means that the floppy disk drive type identified in your Setup Utility does not agree with the type detected by the Power On Self Test. Run the Setup Utility to correct the inconsistency.

**\*Incorrect Drive B type – run SETUP** Type of floppy drive B: not correctly identified in Setup.





## Troubleshooting

This means that the floppy disk drive type identified in your Setup Utility does not agree with the type detected by the Power On Self Test. Run the Setup Utility to correct the inconsistency.

**\*Invalid NVRAM media type** Problem with NVRAM access. In the unlikely case that you see this message you may have some display problems. You can continue operating but should contact your support representative for more information.

**\*Keyboard controller error** The keyboard controller test failed. You may have to replace your keyboard or keyboard controller but may be able to use an external keyboard until then. Contact your support representative.

**\*Keyboard error** Keyboard not working. You may have to replace your keyboard or keyboard controller but may be able to use an external keyboard until then. Contact your support representative.

**\*Keyboard error nn** BIOS discovered a stuck key and displays the scan code for the stuck key.

You may have to replace your keyboard but may be able to use an external keyboard until then. Contact your support representative.

**\*Monitor type does not match CMOS – Run SETUP** Monitor type not correctly identified in Setup. This error probably means your BIOS is corrupted, run the Setup Utility and set all settings to the default conditions. If you still get this error, contact your support representative.

**#\*Operating system not found** Operating system cannot be located on either drive A: or drive C: Enter the Setup Utility and see if fixed disk and drive A: are properly identified and that the boot sequence is set correctly. Unless you have changed your installation greatly, the operating system should be on drive C:.. If the setup utility is correctly set your hard drive is probably corrupted and your system may have to be re-installed from your back up media.

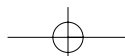
**\*Parity Check 1 nnnn** Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate

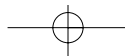
the address, it displays ?????. This is a potentially data destroying failure. Contact your support representative.

**\*Parity Check 2 nnnn** Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ?????. This is a potentially data destroying failure. Contact your support representative.

**#\*Press <F1> to resume, <F2> to SETUP** is displayed after any recoverable error message. Press the **F1** key to continue the boot process or the **F2** key to enter Setup and change any settings.

**#\*Previous boot incomplete – Default configuration used** Previous Power On Self Test did not complete successfully. Power On Self Test loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail also. If using the default settings does not allow you to complete a successful boot





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Section Six

sequence, you should turn off the power with the Power Switch and contact your support representative.

**\*Real time clock error** Real-time clock fails BIOS test. May require board repair. Contact your support representative.

**\*Shadow RAM Failed at offset: nnnn** Shadow RAM failed at offset nnnn of the 64k block at which the error was detected. You are risking data corruption if you continue. Contact your support representative.

**nnnn Shadow RAM Passed** Where nnnn is the amount of shadow RAM in kilobytes successfully tested.

**\*System battery is dead – Replace and run SETUP** The BIOS CMOS RAM memory hold up battery is dead. This is part of your BIOS and is a board mounted battery which requires a support representative to change. You can continue operating but you will have to use Setup Utility default values or reconfigure your Setup Utility every time you turn off your

notebook. This battery has an expected life of 2 to 3 years.

**System BIOS shadowed** System BIOS copied to shadow RAM.

**\*System CMOS checksum bad – run SETUP** BIOS CMOS RAM has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in BIOS memory. Run Setup and reconfigure the system.

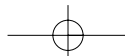
**\*System RAM Failed at offset: nnnn** System memory failed at offset nnnn of in the 64k block at which the error was detected. This means that there is a fault in your built-in memory. If you continue to operate you risk corrupting your data. Contact your support representative for repairs.

**nnnn System RAM Passed** Where nnnn is the amount of system memory in kilobytes successfully tested.

**\*System timer error** The timer test failed. The main clock that operates the computer is faulty. Requires repair of system board. Contact your support representative for repairs.

**UMB upper limit segment address: nnnn** Displays the address of the upper limit of Upper Memory Blocks, indicating released segments of the BIOS memory which may be reclaimed by a virtual memory manager.

**Video BIOS shadowed** Video BIOS successfully copied to shadow RAM.



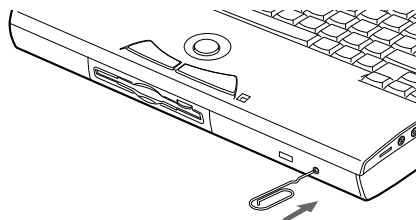
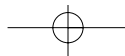


Figure 6-1 Emergency CD-ROM/DVD Tray Release

### EMERGENCY CD-ROM/DVD TRAY RELEASE

If for some reason the eject button fails, you can open the CD-ROM/DVD tray with a paper clip or similar tool inserted into the eject hole in the far right side of the front of the tray. Straighten one side of a paper clip and push it gently into the hole. The tray will pop out a short distance.

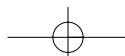
### MODEM SETUP AND COMMANDS

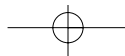
The operating system and application software that is factory installed detects the modem characteristics and provides the necessary command strings to operate the modem. The internal modem operation is controlled by generic AT commands from the operating system and application software. The standard long form result codes may, in some cases, be displayed on your screen to keep you informed of the actions of your modem. The operating system and application software may suppress display of the result codes.

Examples of result codes are:

OK  
 NO CARRIER  
 NO DIALTONE  
 CONNECT 56000  
 (Connection complete at 56,000 bps.)  
 ERROR  
 FAX  
 RING (This means an incoming call.)  
 BUSY  
 NO ANSWER

When using the internal modem with applications which are not factory installed see the application documentation.





## Section Six

### RECOVERY CD-ROM

Included with your notebook (in the Accessories box) is an Emergency Recovery CD-ROM with the following content:

A backup copy of the software originally installed on your new Fujitsu LifeBook (can only be used on the listed LifeBook models).

Sets of device drivers and utilities (in specific directories) that are unique to your notebook configuration for use as documented below.

Read-me files that provide additional use information for items on this CD-ROM.

If you have access to the internet, visit the Fujitsu PC Corporation Web Site at [www.8fujitsu.com](http://www.8fujitsu.com) to check for the most current information and hints on how to perform recovery and system updates.

### Restoring Your Pre-installed Software from CD-ROM

The Emergency Recovery CD-ROM enables restoration of your notebook disk drive contents as they were originally shipped from the

factory. Most often this is necessary if files or software programs (only those files/programs that came pre-installed) become corrupt or accidentally erased.

You have two options available when performing recovery:

1. Recover Hard Drive without Format. This choice replaces all the original factory installed files and program structures without eliminating your data files. You will have to re-install any software that was not included with the computer when you bought it (but your data will be intact as long as the installation of the additional programs is performed in the same manner).
2. Format and Recover Hard Drive. This choice removes all the information on the hard disk. If you choose this option, you will lose any software you have installed and any other files you created since you setup your computer. You will have to re-install any software that was not included with the computer when you bought it.



#### POINT

It is recommended that you back-up all data files prior to performing either of the recovery options.



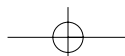
#### POINT

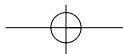
Make certain you have your Operating System Product ID # available (from the Certificate of Authenticity) prior to performing recovery. Once the process is complete and you re-start your notebook, you will be required to perform all the setup steps as when the computer was first bought. (see the section *Starting Your LifeBook for the First Time*).



#### CAUTION

User data and user installed software CAN NOT be recovered from the Emergency Recovery CD





## Troubleshooting

### To Run the Emergency Recovery Program

To use this portion of the CD-ROM, your notebook must BOOT (upon power up or full system reset/restart) from the CD-ROM drive. (See Section Four, page 68.)

1. Insert the Emergency Recovery CD in the CD-ROM drive.
2. If your notebook is running when you insert the CD, exit your operating system and power down the notebook.
3. Start (power up) your notebook.
4. At this point, you must either change your BIOS setup configuration (F2 key) to have the computer boot from the CD-ROM "first" (if you have not previously done so), or use the Esc key during this boot-up sequence and select the CD-ROM from the menu which will appear. (For more information and detailed instructions on changing the BIOS setup, refer to Section Four of this manual.)
5. If correctly configured to boot from the Recovery CD-ROM, you will notice your sys-

tem run a full virus scan of the hard drive and then reach the Emergency Recovery Welcome screen. If this is not what is displayed, check to see that the Recovery CD is installed in the CD-ROM drive and repeat the previous steps (starting with 2.).

If you received a message "This program may not be used on your computer" you are using the wrong Recovery CD for the model of notebook.

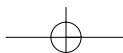
6. Read the information displayed on the Welcome screen, then Click OK.
7. Select one of the two icons displayed in the Emergency Recovery menu and follow the instructions that follow.
8. When recovery is complete, remove the Recovery CD, replace it in its sleeve and store it in a safe location (with your Operating System Manual/Certificate of Authenticity).
9. Restart your notebook.
10. Reset your boot device priority in the BIOS setup as desired.

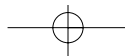
Your notebook now has all of the software installed that was included when you received it from the factory. You must now load any programs which you purchased and installed after you got your notebook. If you chose the Format and Recover option, you should now restore your data files. If you performed Recovery without format, your data files will still exist (within their original directory structures).



### POINT

As long as there is no bootable disk in the CD-ROM drive or the floppy disk drive, your notebook will boot from the hard drive regardless of the BIOS Boot Device Priority setting.





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Section Six

#### Device Drivers, Utilities and Read-me Files

The Emergency Recovery CD also includes a section for providing device driver files/directories and specific Lifebook model utilities that give you additional flexibility and functionality for using your Fujitsu notebook.

This section of the CD is only available if your notebook is already functioning from either your hard drive boot/operating system or as a result of using a bootable floppy disk that is configured to recognize the CD-ROM drive.

Please locate and read any of the Read-Me files that are included on the CD. These files will provide information that pertains specifically to the additional files and utilities that are provided on the Recovery CD for your particular Lifebook model.



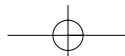
#### CAUTION

Do not boot your notebook from the CD-ROM drive as is done for restoring your pre-installed software.



#### POINT

Look for and open files with the extensions .DOC and .TXT



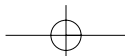


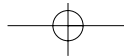
**Care and Maintenance**

Caring for Your Notebook. . . . . 178

Increasing Battery Life. . . . . 179

Caring for Your Batteries . . . . . 179





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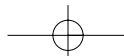
Section Seven

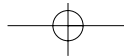
## SECTION SEVEN CARE AND MAINTENANCE

If you use your LifeBook E Series from Fujitsu carefully, you will increase its life and reliability. This section provides some tips for looking after the notebook and the battery packs.

### CARING FOR YOUR NOTEBOOK

- The LifeBook E Series is a durable but sensitive electronic device. Treat it with respect and care.
- Make a habit of transporting it in a suitable carrying case.
- Keep it away from food and beverages.
- If you accidentally spill liquid on your notebook:
  1. Turn it off.
  2. Position it so that the liquid can run out.
  3. Let it dry out for 24 hours, or longer if needed.
  4. If your notebook will not boot after it has dried out, call your support representative.
- Avoid exposure to water, sand, dust, and other environmental hazards.
- Do not expose your notebook to direct sunlight for long periods of time as temperatures above 140° F (60° C) may damage your notebook.
- Keep the covers closed on the connectors and slots when they are not in use.
- Do not put heavy or sharp objects on the computer.
- If you are carrying your notebook in a briefcase, or any other carrying case, make sure that there are no objects in the case pressing on the lid of your notebook.
- Do not drop your notebook.
- Clean your notebook with a damp, lint-free cloth. Do not use abrasives or solvents.
- Use a soft cloth to remove dust from the screen. Never use glass cleaners on your notebook.





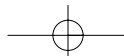
### INCREASING BATTERY LIFE

To increase battery life:

1. Power your notebook through the AC or optional auto/airline adapter whenever possible.
2. If your notebook is running on battery power all day, connect it to the AC adapter overnight to recharge the battery.
3. Keep brightness to the lowest level comfortable.
4. Set the power management for maximum battery life.
5. Put your notebook in Suspend mode when it is turned on and you are not actually using it.
6. Limit your CD-ROM access.
7. Disable the Windows CD automatic insertion function.
8. Always use fully charged batteries.

### CARING FOR YOUR BATTERIES

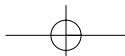
If your notebook is to be stored for a month or longer, turn the machine off and remove all Lithium ion batteries. Store your notebook and batteries separately in a cool, dry location. If you store your notebook with a battery installed, the battery will discharge, and battery life will be reduced. In addition, a faulty battery might damage your notebook.





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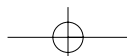
*S e c t i o n   S e v e n*





**Specifications and Glossary**

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*A p p e n d i c e s*

## APPENDIX A SPECIFICATIONS

Appendix A provides the hardware and environmental specifications and the model and part numbers for your LifeBook E Series and its peripherals.

### WARRANTY

Your notebook is backed by a three year International Limited Warranty and includes toll-free technical support; call 1-800-8FUJITSU (1-800-838-5487). Check the service kit that came with your notebook for warranty terms and conditions.

### LIFEBOOK E SERIES SPECIFICATIONS

#### Microprocessor

##### E330/E335

Intel Pentium II 233MHz, PCI bus architecture, and CardBus architecture.

##### E340

Intel Pentium II 266MHz, PCI bus architecture, and CardBus architecture.

##### E350

Intel Pentium II 300MHz, PCI bus architecture, and CardBus architecture.

#### Memory

##### System Memory (on-board)

32MB SDRAM.

##### L2 Cache Memory

512KB.

##### Expansion Memory Options

16MB, 32MB, 64MB and 128MB SDRAM Modules extend system memory up to 160MB maximum; installable in a single DIMM (dual-in-line memory module) slot in a compartment in the bottom of the notebook.

##### Fujitsu product numbers:

16MB SDRAM, FPCEM05.  
32MB SDRAM, FPCEM06.  
64MB SDRAM, FPCEM07.  
128MB SDRAM, FPCEM08.

##### BIOS Memory

512KB Flash ROM.  
256 Bytes CMOS-RAM with back-up battery.

#### Video RAM

2MB EDO RAM.

#### Display

Built-in color flat-panel TFT active matrix LCD display with simultaneous display capability.

#### Recommended Video Color and Resolution E330

Diagonal dimension: 12.1"

##### Internal

800 x 600 pixel resolution, 256k colors.  
(Select 16M colors on Window Display setting)

##### External

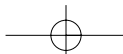
1024 x 768 pixel resolution, 64k colors.  
800 x 600 pixel resolution, 16M colors.  
Simultaneous Video = Yes  
800 x 600, 256 colors  
SVGA, and VGA compatible.

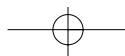
#### E335/E340/E350

Diagonal dimension: 13.3"

##### Internal

1024 x 768 pixel resolution, 64k colors.  
800 x 600 pixel resolution, 256k colors.  
(Select 16M colors on Window Display setting)





## Appendices

### External

1024 x 768 pixel resolution, 64k colors.  
800 x 600 pixel resolution, 16M colors.  
Simultaneous Video = Yes  
124 x 768, 64K color  
XGA, SVGA, and VGA compatible.

### Mass Storage Device Options

#### Multi-function Device Bays

Two hot-swappable.

#### Floppy Disk Drive

Included modular 3.5" floppy disk drive which accommodates 1.44MB or 720KB floppy disks, Fujitsu Model FPCFDD05.  
Optional modular SuperDisk 120 Super floppy disk drive which accomodates 120MB Super floppy disks and standard 3.5" floppy disks, Fujitsu Model FPCLS02

#### Hard Drive

##### E330/E335

One factory installed 3.2GB, 2.5" fixed hard drive unit.

##### E340

One factory installed 4.0GB, 2.5" fixed hard drive unit.

### E350

One factory installed 5.0GB, 2.5" fixed hard drive unit.

Optional modular 5.0GB, 2.5" hard drive unit, Fujitsu Model FPCHDD17.

#### CD-ROM Drive

Included modular, 24x maximum, 5.25" CD-ROM drive, Fujitsu Model FPCCD09.

#### DVD Drive

Optional modular, DVD Media 2x max, CD Media 20x max, 5.25" DVD-ROM drive, Fujitsu Model FPCDV04.

#### Audio

SoundBlaster Pro-compatible 16-bit stereo PCM/FM sound chip.  
Spatializer 3D-Stereo multiple speaker effect support.  
Stereo headphone jack, 1 Vrms, or less, minimum impedance 32 Ohms.  
Stereo line in jack, 880 mVrms or less, minimum impedance 10K Ohms.  
Mono microphone jack, 125 mVp-p or less, minimum impedance 10K Ohms.

Two built-in speakers, 28 mm diameter (Stereo).  
One built-in monaural microphone.

#### Integrated Pointing Device

ErgoTrac pointing device (standard)  
Touchpad pointing device (custom)

#### Communication Options

Internal V.90 standard 56K fax/modem  
(ITU V.90, 56K data, 14.4K fax.)  
(See page 3 for caution on modem.)

or

Internal Fast Ethernet (10/100 Base-Tx) network interface card with RJ-45 connector.

IrDA 1.1 compatible fast infrared port (4 Mbps).

#### Video

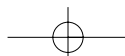
MPEG-1 video data decompression software.  
Zoomed Video support via PC Card Slot 1.

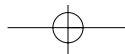
#### Battery Adapter for Bay 2

Battery adapter for Bay 2,  
Fujitsu Model FPCBYA02.

#### Floppy Disk Drive Adapter

Adapter for external installation of modular floppy disk drive, Fujitsu Model FPCFDA03.





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Appendices

### Input/Output Connections

- One Type III/two Type I/II PC Card slot: PCMCIA Standard 2.1 with CardBus support; Zoomed Video support via Slot 1.
- One 6-pin mini DIN PS/2 compatible connector, for external keyboard, external mouse or external numeric keypad.
- One 25-pin D-SUB two-way Centronics type connector for parallel input/output devices; Bi-directional, output only or ECP.
- One 240-pin connector for docking devices.
- One 15-pin D-SUB connector for VGA external monitor (*see Display specifications*).
- One 9-pin D-SUB connector for RS-232C serial input/output devices.
- One connector for USB (Universal Serial Bus) input/output devices.
- One 25-pin special connector for external floppy disk drive connection.
- One modular RJ-11 or RJ-45 communications connector.
- One stereo headphone jack.  
(*See Audio specifications*.)

- One mono microphone jack.  
(*See Audio specifications*.)
- One stereo line in jack.  
(*See Audio specifications*.)

### Keyboards

- Built-in keyboard with all functions of 101 key PS/2 compatible keyboards.
- Total number of keys: 86.
- Function keys: 12, **F1** through **F12**.
- Feature extension key: **Fn**.
- Windows keys: 3, two **Start** keys and one **Application** key.
- Key pitch: 19 mm.
- Key stroke: 3 mm.
- Built-in ErgoTrac pointing device with left and right buttons.
- Built-in palmrest.

### External Keyboard Support

- PS/2 compatible.

### External Numeric Keypad Support

- PS/2 compatible.

### External Mouse Support

- PS/2 compatible.

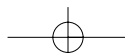
### Management Standard

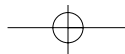
- DMI 2.0/WFM 2.0 Compliant.

### Power

#### Batteries

- One modular Lithium ion battery, Fujitsu Model FPCBP14. Rechargeable, 10.8V, 3600 mAh. Operating time of up to 3 hours. Rapid charge (notebook off or in suspend mode) in about three (3) hours. Standard charge (normal use with limited CD and hard drive access) in about nine (9) hours.





## Appendices

### CAUTION

Actual battery life will vary based on screen brightness, applications, features, power management settings, battery conditioning, and other customer preferences. CD-ROM or hard drive usage may also have a significant impact on battery life.

#### Dual Battery Configuration

Operating time of up to 6 hours. Rapid charge (notebook off or in Suspend Mode) in about five (5) hours. Standard charge (normal use with limited CD and hard drive access) in about fifteen (15) hours.

#### AC Adapter

Autosensing 100-240V AC, 43W, supplying 16V DC to the Notebook, Fujitsu Model FPCAC05 which includes an AC cable.

#### Optional Auto/Airline Adapter

Autosensing 12/24V DC, 43W supplying 16V DC to the Notebook, Fujitsu Model FPCCAA02.

#### Power Management

Conforms to ACPI (Advanced Configuration and Power Interface) version 1.0.

#### Dimensions and Weight

##### Overall Dimensions

Approximately 11.7" x 9.7" x 2.3"  
(297 mm x 246 mm x 58 mm).

##### Weights

Approximately 6.5 lbs (Battery with Weight Saver).  
Approximately 6.94 lbs (FDD and Battery).  
Approximately 7.2 lbs (CD-ROM and Battery).

#### Environmental Requirements

##### Temperature

Operating: 5° to 35° C (41° to 95° F).  
Non-operating: -15° to 60° C (5° to 140° F).

#### Humidity

Operating: 20% to 85%, relative, non-condensing.  
Non-operating: 8% to 85%, relative, non-condensing.

#### Altitude

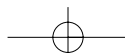
Operating: 10,000 feet (3,048 m) maximum.

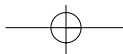
#### Electro-Static Discharge (ESD)

9 kV.

#### Theft Prevention Lock

Lock slot on the right side panel for use with physical restraining security systems. The locking system by Kensington is recommended.





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Appendices

**Pre-Installed Software**

Tioman HotSwap by Agaté Technologies.  
SoftPEG by CompCore Multimedia Inc.  
Audio Rack 32 by ESS Technology, Inc.  
PMSet 98 by Fujitsu Limited.  
Microsoft Windows 95, 98 or NT 4.0.  
McAfee VirusScan by Network Associates, Inc.  
Card Executive by Phoenix Technologies.  
NoteDock by Phoenix Technologies.  
PowerPanel by Phoenix Technologies.  
LapLink by Traveling Software.  
PC-Doctor by Watergate Software, Inc.

**APPROVALS**

**Emissions**

FCC Part 15, FCC Part 68, FTZ.

**Safety**

UL, C-UL, CSA.

**FCC Certification**

See statement at the front of this User's Guide.

**DOC (Industry Canada) Certification**

See statement at the front of this User's Guide.

**POPULAR ACCESSORIES**

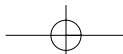
Other accessories are available, contact your authorized Fujitsu reseller.  
Optional second modular Lithium ion battery, Fujitsu Model FPCBP11.  
Optional modular 5.0GB hard drive, Fujitsu Model FPCHDD15.  
Optional Floppy Disk Drive Adapter for external FDD connection FPCFDA03.  
LANdock, Fujitsu Model FPCDS18. The LANdock provides connections for:

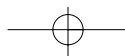
- RS-232C Serial device.
- Parallel device.
- VGA/SVGA/XGA monitor.
- Mouse (PS/2).
- Keyboard (PS/2).
- Slot for Two Type II/one Type III PC Cards without Zoomed Video support.
- Telephone line (RJ-11).
- 10/100 Base-T Ethernet line (RJ-45).
- MIDI/joystick device.
- Two USB devices.

- External floppy disk drive.
- Stereo Headphone.
- Microphone.
- Stereo Line In.

Port Replicator, Fujitsu Model FPCPR10. The Port Replicator provides connections for:

- RS-232C Serial device.
- Parallel device.
- VGA/SVGA/XGA monitor.
- Mouse (PS/2).
- Keyboard (PS/2).
- Telephone line (RJ-11).
- Two USB devices.
- External floppy disk drive.
- Microphone.
- Stereo Line In.
- Iomega Zip Drive.
- SuperDisk™ 120 drive.
- Battery Charger.
- External FDD.
- Modular FDD Adapter.
- Various RAM memory upgrades.





## APPENDIX B GLOSSARY

### AC Adapter

A device which converts the AC voltage from a wall outlet to the DC voltage needed to power your Computer.

### ACPI 1.0

Advanced Configuration and Power Interface specification version 1.0. Conforming systems contain BIOS support to allow the Windows 98 operating systems to manage power consumption of system components.

### Active-Matrix Display

A type of technology for making flat-panel displays which has a transistor or similar device for every pixel on the screen.

### Auto/Airline Adapter

A device which converts the DC voltage from an automobile cigarette lighter or aircraft DC power outlet to the DC voltage needed to power your notebook.

### BIOS

Basic Input-Output System. A computer program and set of default parameters stored in ROM which tests and operates your computer when you turn it on until it loads your installed operating system from disk. Information from the BIOS is transferred to the installed operating system to provide it with information on the configuration and status of the hardware.

### Bit

An abbreviation for binary digit. A single piece of information which is either a one (1) or a zero (0).

### bps

An abbreviation for bits per second. Used to describe data transfer rates.

### Boot

To start-up a computer and load its operating system from disk, ROM or other storage media into RAM.

### Bus

An electrical circuit which passes data between the CPU and the sub-assemblies inside your computer.

### Byte

8 bits of parallel binary information.

### Cache Memory

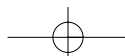
A block of memory built into the micro-processor which is much faster to access than your system RAM and used in specially structured ways to make your overall data handling time faster.

### CardBus

A faster, 32-bit version of the PC Card interface which offers performance similar to the 32-bit PCI architecture.

### CD-ROM

Compact disc read only memory. This is a form of digital data storage which is read optically with a laser rather than a magnetic head. A typical CD-ROM can contain about 600MB of data and is not subject to heads crashing into the surface and destroying the data when there is a failure nor to wear from reading.





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*A p p e n d i c e s*

**CHS Translation**

Cylinder, head and sector translation. Conversion of hard drive access addressing to the cylinder, head and sector form. The terminology is historical left from the days when data was stored on a series of cylindrical drums. The head designates the reading device, similar to the head on a cassette recorder only mounted on a movable arm. Another addressing method is LBA.

**CMOS RAM**

Complementary metal oxide semiconductor random access memory. This is a technology for manufacturing random access memory which requires very low levels of power to operate.

**COM Port**

Abbreviation for communication port. This is your serial interface connection.

**Command**

An instruction which you give your operating system. Example: run a particular application or format a floppy disk.

**Configuration**

The combination of hardware and software that makes up your system and how it is allocated for use.

**CRT**

Cathode Ray Tube. A display device which uses a beam of electronic particles striking a luminescent screen. It produces a visual image by varying the position and intensity of the beam.

**Data**

The information a system stores and processes.

**DC**

Direct current. A voltage or current that does not fluctuate periodically with time.

**Default Value**

A preprogrammed value to be used if you fail to set your own.

**DIMM**

Dual-in-line memory module.

**Disk**

A spinning platter of magnetic data storage media. If the platter is very stiff it is a hard drive, if it is highly flexible it is a floppy disk, if it is a floppy disk in a hard housing with a shutter it is commonly called a diskette.

**Disk Drive**

The hardware which spins the disk and has the heads and control circuitry for reading and writing the data on the disk.

**Diskette**

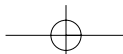
A floppy disk in a hard housing with a shutter.

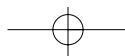
**DMA**

Direct Memory Access. Special circuitry for memory to memory transfers of data which do not require CPU action.

**DMI**

Desktop Management Interface. A standard that provides PC management applications with a common method of locally or remotely querying and configuring PC computer systems, hardware and software components, and peripherals.



**A p p e n d i c e s****DOS**

Disk Operating System (MS-DOS is a Microsoft Disk Operating System).

**Driver**

A computer program which converts application and operating system commands to external devices into the exact form required by a specific brand and model of device in order to produce the desired results from that particular equipment.

**ECP**

Extended Capability Port. A set of standards for high speed data communication and interconnection between electronic devices.

**ESD**

Electro-Static Discharge. The sudden discharge of electricity from a static charge which has built-up slowly. Example: the shock you get from a doorknob on a dry day or the sparks you get from brushing hair on a dry day.

**Extended Memory**

All memory more than the 640KB recognized by MS-DOS as system memory.

**FCC**

Federal Communication Commission.

**Floppy Disk**

A spinning platter of magnetic data storage media which is highly flexible.

**GB**

Gigabyte.

**Gigabyte**

1,073,741,824 bytes  
(2 raised to the thirtieth power).

**Hard drive**

A spinning platter of magnetic data storage media where the platter is very stiff.

**Hexadecimal**

A decimal notation for the value of a 4 bit binary number. (0-9, A, B, C, D, E, F) Example: 2F in hexadecimal = 00101111 in binary = 47 in decimal.

**I/O**

Input/Output. Data entering and leaving your computer in electronic form.

**I/O Port**

The connector and associated control circuits for data entering and leaving your computer in electronic form.

**IDE**

Intelligent Drive Electronics. A type of control interface for a hard drive which is inside the hard drive unit.

**Impedance**

The amount of resistance to the flow of electric current.

**Infrared**

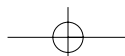
Light just beyond the red portion of the visible light spectrum which is invisible to humans.

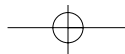
**IR**

An abbreviation for infrared.

**IrDA**

Infrared Data Association. An organization which produces standards for communication using infrared as the carrier.





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**A p p e n d i c e s****IRQ**

Interrupt Request. An acronym for the hardware signal to the CPU that an external event has occurred which needs to be processed.

**KB**

Kilobyte.

**Kilobyte**

1,024 bytes (2 raised to the tenth power).

**LAN**

Local Area Network. An interconnection of computers and peripherals within a single limited geographic location which can pass programs and data amongst themselves.

**LBA**

Logical Block Addressing. A method of locating data stored on a disk.

**LCD**

Liquid Crystal Display. A type of display which makes images by controlling the orientation of crystals in a crystalline liquid.

**Lithium ion Battery**

A type of rechargeable battery which has a high power-time life for its size and is not subject to the memory effect as Nickel Cadmium batteries.

**LPT Port**

Line Printer Port. A way of referring to parallel interface ports because historically line printers were the first and latter the most common device connected to parallel ports.

**MB**

Megabyte.

**Megabyte**

1,048,576 bytes  
(2 raised to the twentieth power).

**Megahertz**

1,000,000 cycles per second.

**Memory**

A repository for data and applications which is readily accessible to your computer CPU.

**MHz**

Megahertz.

**MIDI**

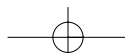
Musical Instrument Digital Interface. A standard communication protocol for exchange of information between computers and sound producers such as synthesizers.

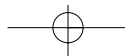
**Modem**

A contraction for MOdulator-DEModulator. The equipment which connects a computer or other data terminal to a communication line.

**MMX Technology**

MMX technology is an Intel processor enhancement that improves multimedia and communication applications. The Pentium processor with MMX technology boasts three primary architectural design enhancements: 57 powerful new instructions specifically designed to manipulate and process video, audio and graphical data efficiently; Single Instruction Multiple Data (SIMD) enabling one instruction to perform the same function on multiple pieces of data; and more L1 cache for a total of 32KB.





**A p p e n d i c e s**

**Monaural**

A system using one channel to process sound from all sources.

**MPU-401**

A standard for MIDI interfaces and connectors.

**NTSC**

National TV Standards Commission. The standard for TV broadcast and reception for the USA.

**Operating System**

A group of control programs that convert application commands, including driver programs, into the exact form required by a specific brand and model of microprocessor in order to produce the desired results from that particular equipment.

**PAL**

Phase Alternation by Line. The standard for color television in Western Europe and most of Asia and Africa.

**Parallel Port**

A connection to another device through which data is transferred as a block of bits simultaneously with a wire for each bit in the block and with other wires only for control of the device not for transfer of data.

**Partition**

A block of space on a hard drive which is set aside and made to appear to the operating system as if it were a separate disk, and addressed by the operating system accordingly.

**PCMCIA**

PCMCIA is a trademark of the Personal Computer Memory Card International Association. The Personal Computer Memory Card International Association is an organization that sets standards for add-in cards for personal computers.

**Peripheral Device**

A piece of equipment which performs a specific function associated with but not integral to a computer. Examples: a printer, a modem, a CD-ROM.

**PIO**

Parallel Input/Output.

**Pitch (keyboard)**

The distance between the centers of the letter keys of a keyboard.

**Pixel**

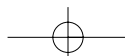
The smallest element of a display, a dot of color on your display screen. The more pixels per area the clearer your image will appear.

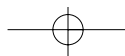
**POST**

Power On Self Test. A program which is part of the BIOS which checks the configuration and operating condition of your hardware whenever power is applied to your Computer. Status and error messages may be displayed before the operating system is loaded. If the self test detects failures that are so serious that operation can not continue, the operating system will not be loaded.

**Program**

An integrated set of coded commands to your computers telling your hardware what to do and how and when to do it.





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*A p p e n d i c e s*

**PS/2**

An IBM series of personal computers which established a number of standards for connecting external devices such as keyboards and monitors.

**RAM**

Random Access Memory. A hardware component of your computer that holds binary information (both program and data) as long as it has the proper power applied to it.

**RAM Module**

A printed circuit card with memory and associated circuitry which allows the user to add additional memory to the computer without special tools.

**Reset**

The act of reloading the operating system. A reset erases all information stored in RAM.

**Restart**

See Reset.

**Resume**

To proceed after interruption. In your Computer this refers to returning to active operation after having been in one of the suspension states.

**ROM**

Read Only Memory. A form of memory in which information is stored by physically altering the material. Data stored in this way can not be changed by your Computer and does not require power to maintain it.

**SCSI**

Small Computer Systems Interface (pronounced scuzzy). An American National Standards Institute (ANSI) standard for connecting multiple (up to 7) high speed parallel devices to a computer.

**SDRAM**

Synchronous Dynamic Random Access Memory.

**Serial Port**

A connection to another device through which data is transferred one bit at a time on a single wire with any other wires only for control of the device not for transfer of data.

**Shadow RAM**

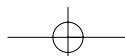
A technique of copying data or applications stored in ROM (Read Only Memory) into RAM (Random Access Memory) for access during actual operation. RAM is much faster to access than ROM, however ROM contents are not lost when power is removed. Shadowing allows permanently stored information to be rapidly accessed.

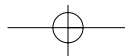
**SRAM**

Static random access memory. A specific technology of making RAM which does not require periodic data refreshing.

**Status Indicator**

A display which reports the condition of some portion of your hardware. On your Computer this is an LCD screen just above the keyboard.





**A p p e n d i c e s**

**Stereo (audio)**

A system using two channels to process sound from two different sources.

**Stroke (keyboard)**

The amount of travel of a key when it is pressed from resting to fully depressed.

**Suspend**

To make inoperative for a period of time. Your notebook uses various suspension states to reduce power consumption and prolong the charge of your battery.

**SVGA**

Super VGA.

**S-Video**

Super Video. A component video system for driving a TV or computer monitor.

**System Clock**

An oscillator of fixed precise frequency which synchronizes the operation of the system and is counted to provide time of day and date.

**TFT**

Thin Film Transistor – A technology for flat display panels which uses a thin film matrix of transistors to control each pixel of the display screen individually.

**UL**

Underwriters Laboratories – An independent organization that tests and certifies the electrical safety of devices.

**VGA**

Video Graphics Array. A video display standard originally introduced by IBM with the PS/2 series of personal computers.

**VRAM**

Video Random Access Memory. A memory dedicated to video display data and control.

**Write Protect**

Prevent alteration of the binary state of all bits in a storage media. Example: all information on a device such as a floppy diskette; a block of space in a storage media such as a partition of a hard drive; a file or directory of floppy diskette or hard drive.

**XGA**

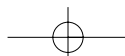
Extended VGA.

**Zip Drive**

A 100MB read/write removable media disk drive.

**Zoomed Video**

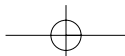
A PC Card port which allows notebook PCs to deliver full screen broadcast quality video through third party PC Cards, including TV tuners, video capture, and MPEG full-motion video.

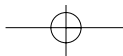




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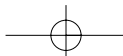
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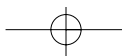




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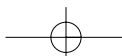
**I n d e x**

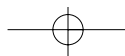




*I n d e x*

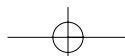
|  |   |                                   |  |   |  |
|--|---|-----------------------------------|--|---|--|
| 3D-Stereo . . . . .                    | 5, 54   | Battery . . . . .                 | 2-5, 7-8, 14-16, 28-30, 38-41, 48-49, 51, 55-60, 62, 64-65, 111-112, 129-130, 133-134, 144, 159-164, 166, 172, 177-179                                   | Boot Sector Protection. . . . .           | 106  |
| AC adapter . . . . .                   | 2, 9, 14, 16, 25, 28-29, 38-41, 62, 140, 154                                | Battery Level indicator . . . . . | 29-30, 40-41   | Boot sequence . . . . .                   | 67-68, 78, 150, 165-166, 171   |
| AC Adapter indicator . . . . .         | 29  | Battery life . . . . .            | 15, 39, 56-58, 112, 177, 179   | Bootable CD-ROM. . . . .                  | 69, 78, 155  |
| Access indicators. . . . .             | 24, 29, 31, 49-50   | Battery power . . . . .           | 7, 14, 48, 51, 57, 62, 111   | Booting . . . . .                         | 17, 19-20, 70, 78, 90, 116   |
| Adjustment feet . . . . .              | 11, 15, 44-45, 144  | Bi-directional . . . . .          | 87   | Bridge battery . . . . .                  | 5, 38-39, 111, 133-134   |
| Advanced Menu. . . . .                 | 54, 67, 81-84, 86-88, 90, 92, 94, 96, 98-99, 152, 168-169                   | BIOS . . . . .                    | 7, 16-17, 19-20, 33, 48, 50-54, 56-58, 67-71, 74, 76, 78, 82, 84-88, 92, 96-98, 103-104, 115, 118, 120, 122-123, 152-153, 155-158, 165-166, 169-172, 175 | Brightness. . . . .                       | 6-7, 15, 39, 48, 164, 167, 179   |
| Applications. . . . .                  | 24-25, 29-30, 39, 46-47, 125, 137, 140, 152, 162, 165, 168, 173             | BIOS setup utility . . . . .      | 7, 16-17, 19-20, 48, 50-54, 56-58, 67-69, 71, 84, 103, 118, 152, 156, 165-166  | Cache Memory . . . . .                    | 79   |
| Arrow icon. . . . .                    | 29  | Block Addressing . . . . .        | 77   | Calendar . . . . .                        | 72   |
| Audio functions . . . . .              | 82, 91  | Boot . . . . .                    | 16, 20, 33, 67-71, 78, 100, 102, 104, 106, 115-118, 150, 165-166, 171, 175-176, 178  | CapsLock . . . . .                        | 7, 28, 31  |
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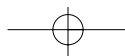




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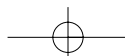
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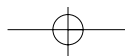




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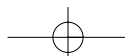
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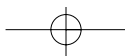




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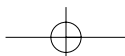
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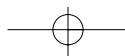




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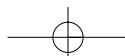
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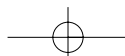
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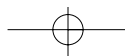




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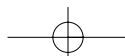
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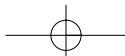
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