

## COPYRIGHT

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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 B142.

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	5/21/99
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™ B Series notebook computers are 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 B 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 0.2.

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 LifeBook™ B Series possèdent 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 0.2.

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 péri-phériques de sorte que le total de numéros de charge de tous les périphériques n'excède pas 100.



## **A V E R T I S S E M E N T**

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.

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**LifeBook B Series from Fujitsu**

## PREFACE

Compact convenience for maximum performance, the Fujitsu LifeBook B Series is the ultimate road companion. It provides easy access to your e-mail, the internet and all your business documents. You can also maintain the desktop productivity you are accustomed to back in the office. Simply connect a full sized monitor and an external keyboard to the LifeBook B Series and use your familiar Windows software. Now you can continue to perform away or at the office without compromise.

It is hard to believe a notebook so small and light can pack so much power. From a fast 300 MHz Intel Celeron processor to an easy to read 8.4" SVGA TFT touch screen and fast internal modem, all the latest technology is included.

The LifeBook B Series comes with the Windows 98 SE operating system pre-installed.

This manual explains how to operate your LifeBook B Series hardware and built-in system software. The LifeBook B Series is compatible with the IBM PC AT.

### 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 B 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 B Series from Fujitsu**

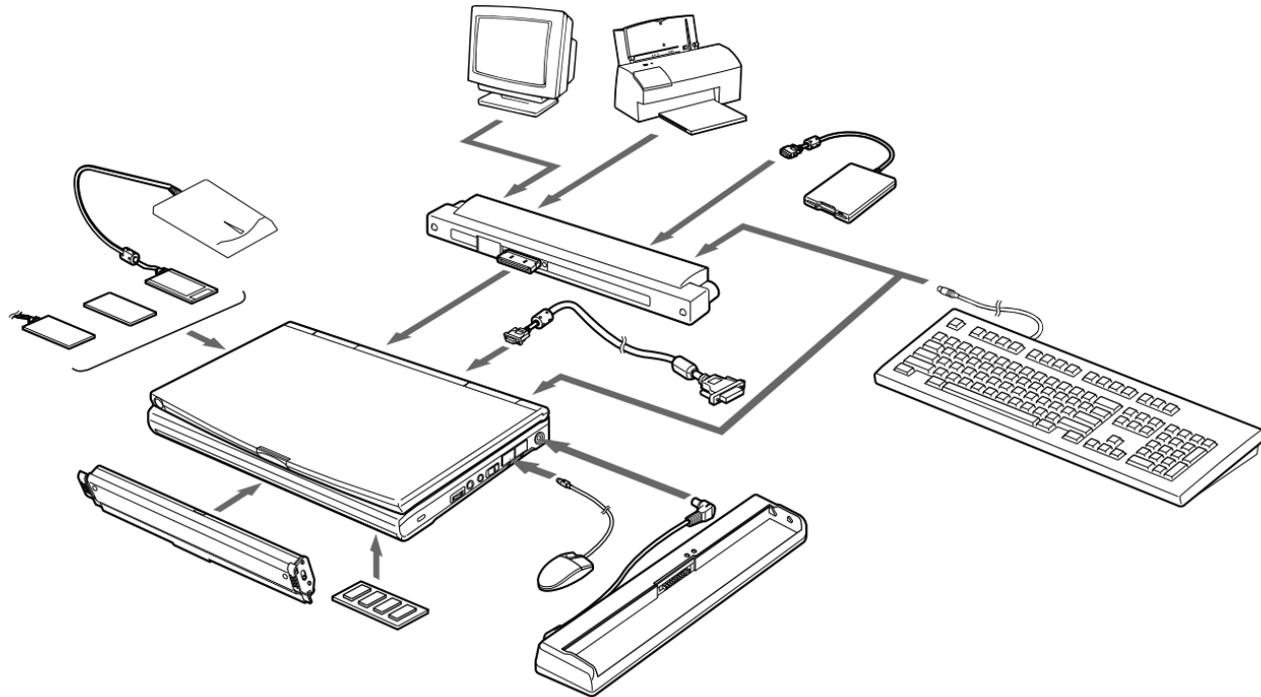


Figure P-1 LifeBook B Series with Samples of Fujitsu and Third Party Options and Accessories

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## SECTION ONE

### SETTING UP YOUR LIFEBOOK B SERIES FROM FUJITSU

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

#### UNPACKING YOUR NOTEBOOK

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

- LifeBook B Series with stylus from Fujitsu. (*Figure 1-1.*)
- Port Replicator. (*Figure 1-2.*)
- AC adapter with AC power cord (located in the accessories compartment). (*Figure 1-3.*)
- Lithium ion Battery (installed in your notebook).
- External Floppy Disk Drive. (*Figure 1-4.*)
- Modem (RJ-11) cable (located in the accessories compartment).
- Getting Started Guide.
- Accessories Catalog/Flyer.

- User's Guide.
- Microsoft Windows Manual and Certificate of Authenticity.
- Registration card and customer information pack.
- Recovery CD-ROM (located in the accessories compartment).
- Bootable floppy diskette for use with Recovery CD-ROM (located in the accessories compartment).

Once you have checked and confirmed that your notebook system is complete, read through the following sections to learn about all of the components and features.

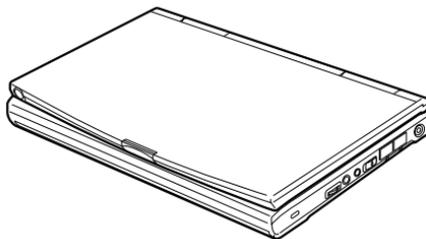


Figure 1-1 LifeBook B142 Notebook

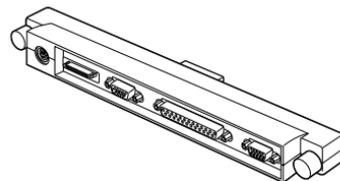


Figure 1-2 Port Replicator

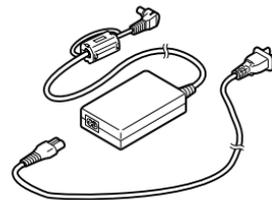


Figure 1-3 AC Adapter Unit

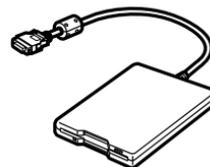


Figure 1-4 External Floppy Disk Drive

## Setting Up Your LifeBook B Series

### OVERVIEW OF LIFEBOOK B SERIES FEATURES

The LifeBook B Series is a compact, yet powerful notebook computer available with a variety of features including: *(See Appendices, page 90, for detailed information.)*

- 300 MHz Intel Celeron processor.
- 32MB SDRAM standard, expandable to 160MB.
- Built-in 6.4 GB hard drive.
- 8.4" active-matrix (TFT) touch screen color display with SVGA support.
- 2MB video memory.
- Internal Lithium ion battery.
- PS/2 connection for an external keyboard or mouse.
- Built-in 56K V.90 modem.
- Integrated Quick Point pointing device for easy cursor control.
- Two USB ports for connecting USB mouse, USB scanner, USB hubs, etc.
- Compact size: 9" x 6.7" x 1.2".
- Weighs less than 2.65 lbs.



#### POINT

The internal modem is designed to the ITU-T V.90 standard. Its maximum speed of 53000bps is the highest allowed by the FCC, 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.

- External 3.5" floppy disk drive
- Full audio and video features:
  - 32-bit SoundBlaster Pro-compatible sound chip.
  - Zoomed Video support for full motion video acceleration.
  - Two built-in stereo speakers.
  - Stereo Headphone jack.
  - Microphone jack.
- One Type II PC Card slot.
- Fast IrDA (4Mbps) compatible infrared port for wireless data transfer.
- External monitor support (with port replicator) for simultaneous display capability.
- 83-key keyboard with three dedicated Windows keys.

- Standard pre-installed software:
  - Microsoft Windows 98 Second Edition operating system.
  - Microsoft Works.
  - LapLink Professional from Traveling Software for file transfers via modem, cable or infrared port.
  - ESS AudioRack.
  - PC-Doctor for system diagnostics.
  - McAfee VirusScan for virus protection.
  - Adobe Acrobat Reader.
  - PMSet 98 for system power management.
  - Microsoft Press Interactive Training. (Windows 98)
  - Microsoft Internet Explorer.
  - Netscape Communicator.
- Internet Service Providers:
  - AOL.
  - CompuServe.
  - Earthlink.

## COMPONENT IDENTIFICATION

For detailed specifications refer to *Appendicies on page 90.*

### TOP AND FRONT COMPONENTS

#### Display Panel

This is a color LCD panel with back lighting for the display of text and graphics and Touch Screen functionality. (*Figure 1-5.*)

#### Status Indicator Panel

LCD display of the status of the power state and source, Suspend mode, AC connected/disconnected, battery charge for primary battery, hard drive activity, PC Card activity, CapsLock, NumLk and Scr Lk. (*Figure 1-5.*)

#### 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 35-39 for more information.*)



## CAUTION

Be sure you know what settings are active for your Suspend/Resume button before you use it as misuse can result in data loss. (*See the Power Menu of the BIOS setup utility, page 44, for more information.*)

### Stereo Speakers

The built-in speakers output sound from the notebook. (*Figure 1-5.*)

### Closed Cover Switch

The closed cover switch turns off the LCD back lighting when the display panel is closed, thus saving power. It can also be set as a Suspend/Resume switch in the BIOS Setup utility. (*See page 44.*) (*Figure 1-5.*)

## Setting Up Your LifeBook B Series

### Keyboard

An 83-key keyboard with 3 dedicated Windows keys for easy operation. (Figure 1-5.)

### Integrated Quick Point Pointing Device

The Quick Point pointing device is a finger contact cursor control system with two click buttons. (Figure 1-5.)

### Display Panel Latch

This latch locks and releases the display panel. (Figure 1-5.)

### Touch Screen Stylus

The stylus is used as the pointing device for the touch screen. (Figure 1-5.)

### Lithium ion Battery

See full description under Bottom Panel Components, page 8. (Figures 1-5 and 1-9.)

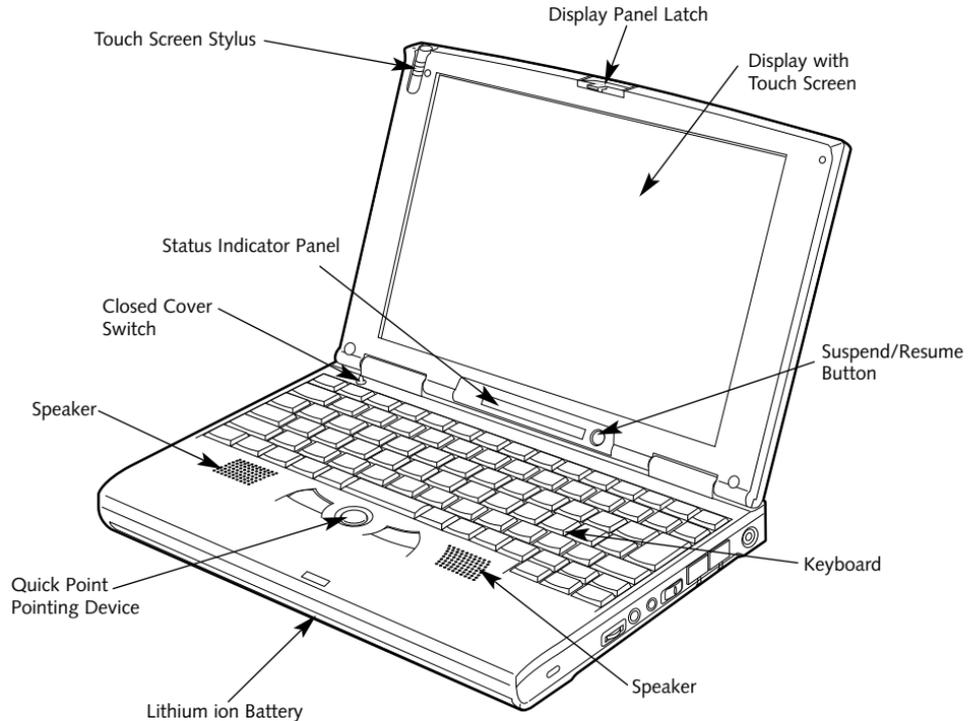


Figure 1-5 LifeBook B Series with Display Open

## LEFT-SIDE PANEL COMPONENTS

### Modem (RJ-11) Jack

This is the jack for attaching a telephone line to the internal modem. (Figure 1-6.)

### 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.

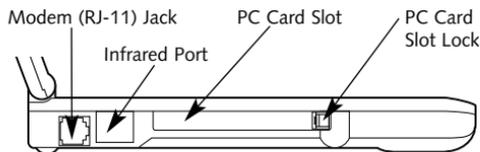


Figure 1-6 LifeBook B Series Left-side Panel

### Infrared Port

The fast IrDA 1.1 (4Mbps) compatible port allows you to communicate with another IrDA compatible infrared device without a cable. (Figure 1-6.)

### PC Card Slot

The PC Card Slot allows you to install one type II PC Card. (See pages 50-52 for more information on PC Cards.) (Figure 1-6.)

### PC Card Slot Lock

This button locks a PC card in place or ejects a card from the slot. (Figure 1-6.)

## RIGHT-SIDE PANEL COMPONENTS

### Theft Prevention Lock Slot

This is a slot that allows you to attach a physical lock down device. (Figure 1-7.)

### Volume Control

The volume control is a wheel which provides manual control of the sound level of all audio output from your notebook. (Figure 1-7.)

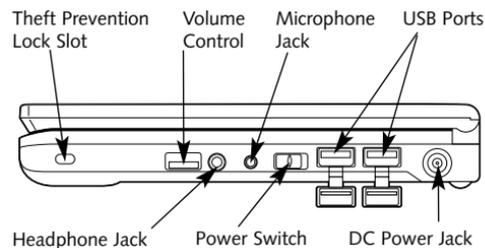


Figure 1-7 LifeBook B Series Right-side Panel

### CAUTION

There are software volume controls. The knob setting and the software settings will interact. The software volume setting will control the maximum knob setting, and if the software setting is all the way down, the maximum setting of the knob will be all the way down. (See Volume Control on page 28 for more information.)

**Headphone Jack**

You can connect headphones or powered external speakers to the stereo headphone jack.

(Figure 1-7.)

**Microphone Jack**

The microphone jack allows you to connect an external mono microphone. (Figure 1-7.)

**Power Switch**

This switch is the main power switch for your notebook. (Figure 1-7.)

**USB Ports**

These ports allow you to connect Universal Serial Bus devices, such as external mouse, game pads, pointing devices, keyboards, USB hubs and speakers. (Figure 1-7.)

**DC Power Jack**

The DC power jack allows you to plug in the AC adapter or the optional battery charger. (Figure 1-7.)

**REAR PANEL COMPONENTS****PS/2 Port**

This port allows you to connect an external PS/2 keyboard or PS/2 mouse. (Figure 1-8.)

**Mini-Serial Port**

This port is for connection of the optional Mini-Serial Adapter, which allows you to use serial devices without the Port Replicator. (Figure 1-8.)

**Docking Connector Port**

Allows you to connect a Port Replicator to your notebook. (Figure 1-8.)

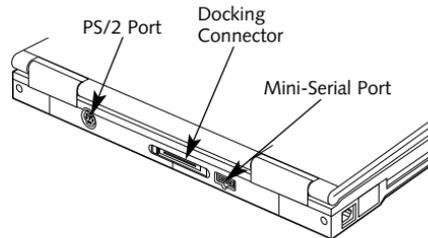


Figure 1-8 LifeBook B Series Rear Panel

**BOTTOM COMPONENTS****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. (Figure 1-9.)

**Memory Upgrade Compartment**

The socket for Memory Upgrade Modules is in this compartment. (See pages 54-57 for more information on installing memory.) (Figure 1-9.)

**Battery Lock**

These sliding locks hold the Lithium ion battery securely in place. (Figure 1-9.)

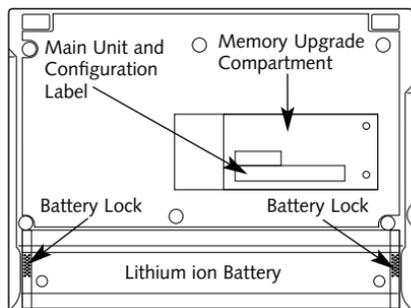


Figure 1-9 LifeBook B Series Bottom

### Lithium ion Battery

This battery acts as your notebook's main source of power when the AC adapter is not being used. This primary battery can be replaced, when discharged, with a charged battery for additional run time. (Figure 1-9.)



### CAUTION

The system must be shut down, or an AC adapter must be installed when changing the battery or data will be lost.

## PORT REPLICATOR

### Front Components

#### Docking Connector

Allows you to connect the Port Replicator to your notebook. (Figure 1-10.)

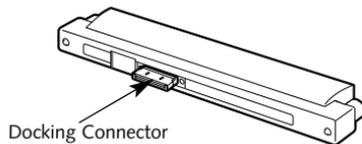


Figure 1-10 Port Replicator Front Panel

### Rear Components

#### Port Replicator Attachment Knobs

These two knobs secure the connection between the Port Replicator and your notebook. (Figure 1-11.)

#### PS/2 Port

This port allows you to connect an external PS/2 keyboard or PS/2 mouse. (Figure 1-11.)



### POINT

To use a PS/2 mouse you must adjust the settings in the BIOS. (See the BIOS Guide at [www.8fujitsu.com](http://www.8fujitsu.com).)

#### External Floppy Disk Drive Port

A port for attaching the external floppy disk drive. (Figure 1-11.)

#### Serial Port

The serial port allows you to connect Serial (RS-232C) devices, such as serial printers or scanners. (Figure 1-11.)

#### Parallel Port

The parallel port allows you to connect parallel devices, such as a parallel printer to your notebook. (Figure 1-11.)

#### External Monitor Port

This port allows you to connect an external VGA or SVGA CRT monitor. (Figure 1-11.)

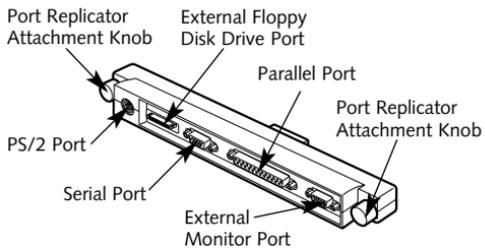


Figure 1-11 Port Replicator Rear Panel

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## SECTION TWO

### STARTING YOUR LIFEBOOK B 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; the AC adapter; an optional auto/airline adapter; or an optional dual Lithium ion battery configuration.



#### CAUTION

The primary Lithium ion battery is not fully charged when you purchase your notebook. Initially you will need to connect the AC adapter or the auto/airline adapter to use your notebook.

#### 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 wall connector cable into the AC Adapter.
2. Plug the DC Output cable of the AC adapter into the DC Power jack on the right side of your notebook.
3. Plug the wall plug and end of the wall connector cable into an AC electrical outlet.

##### 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 adapter.

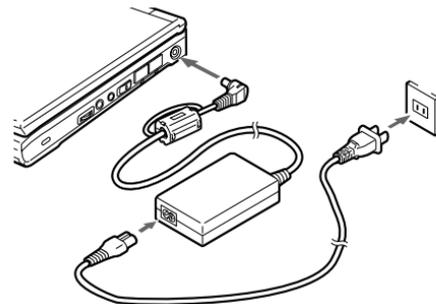


Figure 2-1 Connecting the AC Adapter

#### Optional Dual Battery Configuration

You can configure your notebook to run in a dual battery configuration by using an additional charged Lithium ion battery installed in the optional battery charger. The primary battery must be installed for this power configuration to work; your notebook cannot be run from a secondary battery alone.

##### To Set Up the Dual Battery Configuration

1. Make sure you have two fully charged Lithium ion batteries.

## Starting Your LifeBook B Series

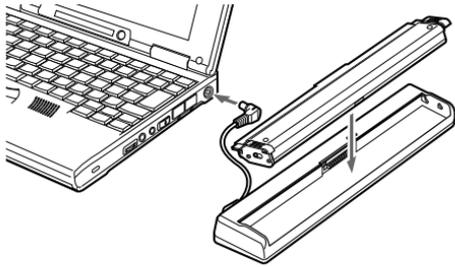


Figure 2-2 Optional Dual Lithium ion Battery Setup

2. Install one battery in your notebook and install the other in the optional battery charger. (Figure 2-2.)
3. Connect the battery charger to the DC power jack of your notebook. (Figure 2-2.)

### DISPLAY PANEL

#### Opening the Display Panel

Pressing the latch releases the top of the display panel from the front of the notebook body. Tilt the display panel backward until the screen is at a comfortable viewing angle. (Figure 2-3.)

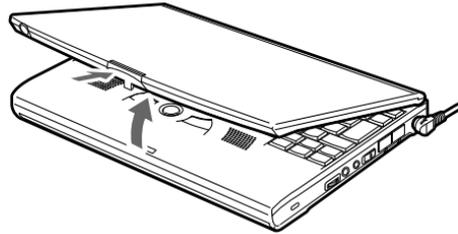


Figure 2-3 Opening the Display Panel

### 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.

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 notebook in Suspend mode, (see pages 35-36), 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, page 16, for the recommended shutoff procedures.)



Figure 2-4 Power On

 **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 your notebook. 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.

 **CAUTION**

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

 **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 performs a Power On Self Test (POST) to check the internal parts and configuration. If a fault is found you will hear a beep and/or an error message will be displayed. (See *Troubleshooting on pages 78-80.*)

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. (See *BIOS Guide on page 44 for more information.*)

After satisfactory completion of the Power On Self Test (POST) your notebook will load your operating system. (See *Boot Menu on pages 91-94 to see which kind of disk will be the source.*)

 **CAUTION**

Never turn off your notebook during Power On Self Test (POST) or an error message will be displayed when you turn your notebook on the next time. (See *the Troubleshooting information on pages 78-80.*)

**Booting the System with Windows 98 Second Edition**

We strongly recommend that you not attach any other external devices 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 SE Welcome will begin.

## Starting Your LifeBook B Series

Designed to accommodate the needs of many users, in many different countries, Windows 98 SE needs to be configured for you the first time you use it. The Windows 98 SE has four parts: Getting Started – here you have the opportunity to enter this custom information and setup your phone so that your LifeBook will be prepared to dial out, Registration – easy on-line registration for Windows 98 SE with Microsoft and your LifeBook with Fujitsu PC Corporation, Windows License – a required procedure to activate Windows 98 SE, and Final Settings – Windows 98 SE takes the information you have entered and makes your configuration. If you need to stop the process, you may click on "cancel" on any screen, and Windows 98 SE will shut down. You may restart the process at any time, but you must complete it to use your LifeBook.

### Getting Started

Read the instructions on the screens carefully, and fill in the information as directed. You will be asked for such items as the language you wish to use, the country in which you live, your first and last name, and about how you dial out

from where you will be using your computer. For the phone settings, enter the information for the location where you are setting up your LifeBook. Windows 98 SE will help you dial from other locations as they come up. If you are not connected to a phone line and plan to register your LifeBook at a later time, you may click on "skip", and you will go directly to the condition of use page.

Once you have setup your LifeBook to dial out, Windows 98 SE will make a free telephone call which will test these settings. If the call is unsuccessful, you will be returned to the phone settings page where you may try to fix them at this time. If you are unable to fix the settings please contact Fujitsu PC Service and Support. (*See page 60.*) If you would simply like to move on, and register your LifeBook at a later time, simply click on "skip" and you will go directly to the condition of use page.

### Registration

If your connection is successful, you will go to the Registration Confirmation page. On this page simply enter the requested information,

and then check the box at the bottom to register your copy of Windows 98 SE with Microsoft. Once you have finished, click on next to continue.



### POINT

If you do not register at this time you can do it later simply by double-clicking on the **LifeBook Registration** icon on your desktop, and following the instructions.

You will then go into Fujitsu Registration. Follow the instructions on the screens, and enter all of the information so that if you need help FPC service and support will be able to serve you better.

### Final Settings

The first part of your final settings is the Windows End User License Agreement. Read the agreement carefully. You can scroll through the text using your pointing device to activate the scroll bar or use the up arrow ↑ and the 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 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 98 SE or to shut down your notebook.

Next you will need to enter your Windows Product Key. Look in the box that your notebook came in and you will find a Windows 98 SE Certificate of Authenticity shrink wrapped with the Windows 98 SE 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 need to enter on the Product Key screen. When you have entered the number exactly as shown click on the Next > button.



#### POINT

You cannot use your notebook until you have accepted the License Agreement and entered your product key. If you stop the process your notebook will return to the beginning of the Windows 98 SE Welcome Process, even if you shut your LifeBook down and start it up again.

Wait for a few moments as Windows 98 SE prepares for you. Once it is ready, your desktop will appear, and you are ready to begin!



#### POINT

Windows 98 SE will briefly initialize a system device before displaying the Windows desktop for the first time.



#### POINT

You will find a Emergency 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 page 81.*)

## 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.

## Starting Your LifeBook B Series

### How do I register?

By modem, fax, mail, telephone, or on the web. With Windows 98 SE, it is a part of the Windows 98 SE Welcome process. If you do not register during the Welcome process you can double-click on the **LifeBook Registration** icon on your desktop and then follow the instructions.

You may also complete the pre-printed registration form and either:

fax it to **1-949-450-9140**

or mail it to:

Fujitsu PC Corporation  
15355 Barranca Pkwy  
Irvine, CA 92618-9520

or call: **1-800-8fujitsu (1-800-838-5487)**

You may also register on our website: **www.8fujitsu.com**. You will need to be set up with an Internet Service Provider (ISP) to use this option.

### 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 the 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 compartment 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 compartment 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 Web site URL link in the Service and Support Software folder in the windows start menu. You will find an FAQ, driver updates and online documentation.



#### POINT

You must have an active internet connection to use the on-line URL links described above. If you do not have an existing internet connection you may go to the "Internet Starts Here" folder on the desktop and select any of the providers there. Just double click on their icon, and follow the directions.

## POWER OFF

Before turning off the power by putting the power switch in the Off position, check that the Hard Drive and PC Card Access indicators are all Off. (See Figure 3-1, page 20.) 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.

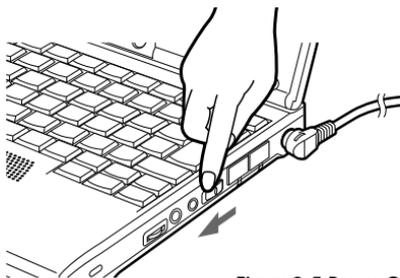


Figure 2-5 Power Off

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. Click on the start button.
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. After shutting down from Windows turn off your notebook using the power switch.

2. Close your notebook display panel.
3. Disconnect the AC adapter.
4. 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.

### 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 ten seconds may cause an error when you start the next time..

## RESTARTING THE SYSTEM

If your system is on, and you wish to restart it be sure that you use the following procedure.

1. Click on the Start button.
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.

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## SECTION THREE

### USING YOUR LIFEBOOK B SERIES FROM FUJITSU

This section describes the indicators, buttons, connections and operating modes of your LifeBook B 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 icon will appear to indicate the activity of the corresponding component in 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.

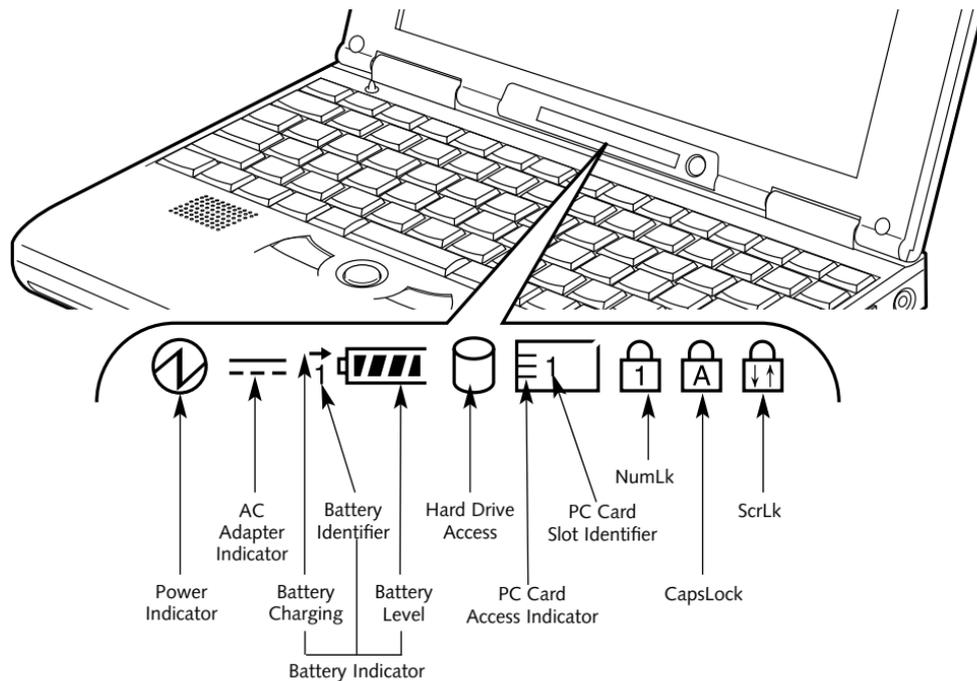


Figure 3-1 Status Indicator Panel

**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 power in the pseudo-off state.

**CAUTION**

Your notebook's power switch must be turned off to prevent drawing power.

**AC Adapter Indicator**

The AC Adapter indicator tells you whether the system is operating on an adapter, AC or auto/airline, or batteries alone. The indicator is On when power is coming from an adapter 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 indicator will be Off.

**Battery Indicator**

The battery indicator shows whether or not the primary Lithium ion battery is installed, and indicates its condition. (Figure 3-2.) Battery 1 is the primary Lithium ion battery which is installed in your notebook. The battery indicator is displayed only when the primary battery is installed.

A small arrow icon (**Battery Charging** indicator) appears to the left of the **Battery Level** indicator and above the number (**Battery Identifier**) if the primary 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 indicator operates 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 the primary battery. (Figure 3-2.) If there is no battery charging and the power switch is Off then the AC Adapter indicator and the Battery indicator will be off.

**POINT**

The status panel of your notebook will not display information for a second battery when using a dual-battery configuration. Since the battery charger is connected to the DC power jack of the notebook, the notebook does not treat it as a battery.

**CAUTION**

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

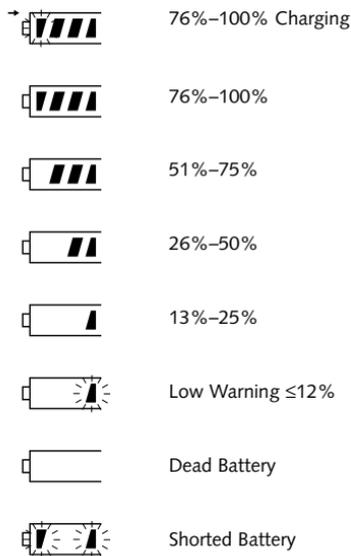


Figure 3-2 Battery Level Indicator

### 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.

#### Hard Drive Access Indicator

The Hard Drive Access indicator tells you when the internal hard drive is being accessed.

#### PC Card Access Indicators

The PC Card Access indicators tell you when an installed PC Card is being accessed. Card 1 is the connector inside the slot on the left side of your notebook. 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 26 for more information on the numeric keypad.) You can activate the NumLk mode by pressing the **NumLk/ScrLk** 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.

#### ScrLk Indicator

The ScrLk indicator tells you when scroll lock is active. You can activate the scroll lock by pressing the **NumLk/ScrLk** key while holding down the **Fn** key. Deactivate the setting the same way that you activated it.

## INTEGRATED QUICK POINT™ POINTING DEVICE

The Quick Point pointing device is composed of a small joystick-like disc pointer control and two buttons located in front of the keyboard. The Quick Point pointing device functions like 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 Quick Point. The more pressure you use the faster the cursor will move. The second part of the Quick Point pointing device – the buttons – function as mouse buttons, and the functions they perform depend on the application you are using. Figure 3-3 shows the position of the Quick Point and buttons.



### POINT

An external USB or PS/2 mouse can be used in combination with the Quick Point pointing device. To use the PS/2 mouse the BIOS setup has to be modified. Please refer to the BIOS Guide on our website. (See page 44 for more information.)

### 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.)

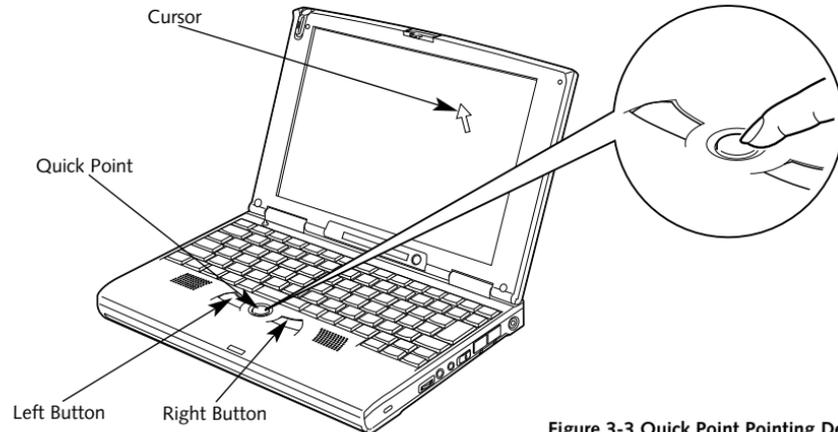


Figure 3-3 Quick Point Pointing Device

### Double-Clicking

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



#### CAUTION

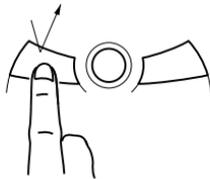
If the interval between clicks is too long, the double-click will not be executed.



#### 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.

Left-Click



Left Double-Click



Figure 3-4 Clicking

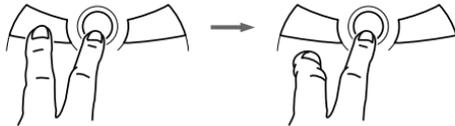


Figure 3-5 Dragging

### Dragging

Dragging means moving the cursor over an object, pressing the left button – and keeping it pressed – while moving the cursor to the desired new location, then releasing the button. (Figure 3-5.)

### Quick Point Device Control Adjustment

The Mouse Properties in your Windows Control Panel provides customization of your Quick Point pointing device. There are three (3) aspects of the Quick Point 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.
- 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.

You may want to try practicing with different adjustments until you find a combination that is comfortable for you.

## INTEGRATED TOUCH SCREEN

The LifeBook B Series comes with an integrated touch screen, which allows you to use the included stylus as an additional pointing device (Figure 3-6.) You can also use your finger in place of the stylus, but the stylus will provide the most accurate results. You can use the stylus to click, double-click, or drag items and icons, or to draw like a pen or pencil, in applications that support this behavior, such as drawing or painting programs. See the documentation that came with your application for details.



### CAUTION

To avoid potential scratching and damage, never use anything but the included stylus or your finger with the touch screen.



### POINT

To purchase additional or replacement styluses, visit Fujitsu's accessories web site, <http://accessories.fujitsu.com>.

## Calibrating the Touch Screen

In order to assure accurate tracking between the stylus and cursor, you must run the Touch Screen Calibration Utility before you use the Touch Screen for the first time, or after you change the display resolution.

To run the calibration utility:

1. Click on Start; then Programs; then Touch Panel Calibration; then Touch Panel Calibration Utility.
2. Adjust the display of your notebook to a comfortable angle and find the red "+" symbol in the upper-left corner of the display.
3. Using the stylus, touch the screen near the "+" symbol and, without lifting the tip, move the stylus to the center of the symbol. When the stylus tip is in the center of the symbol, lift the tip of the stylus off the touch screen.
4. Once the tip of the stylus is no longer touching the screen, the "+" symbol will disappear and another will appear in a different place on the monitor. Continue until you have

selected a total of nine "+" symbols. This is the minimum number of points necessary to calibrate your touch screen.

5. When you have selected nine symbols, press the **Enter** key. If you see an error message at this point, you selected fewer than nine symbols. Click OK to begin again at Step 2.
6. Touch the stylus to various points on the screen to be sure you are satisfied with the cursors response. If you are not satisfied, press the **Home** key to begin again at Step 2. If you are satisfied with the screen's calibration, press the **Enter** key.

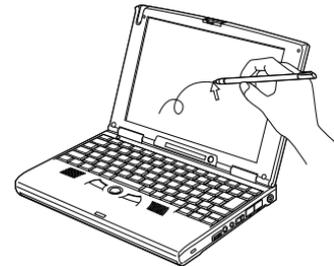


Figure 3-6 Using the Stylus with the Touch Screen

## CAUTION

If you do not press the Enter key to exit the calibration utility, the information for the points you selected will not be saved and the screen will not be calibrated.

### Using the Integrated Touch Screen

#### Clicking

To left-click, touch the intended item once and lift the stylus tip immediately. The touch screen does not support a right-click. (Figure 3-7.)

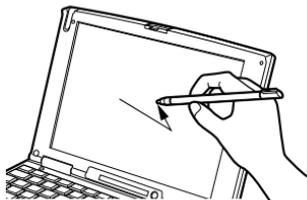


Figure 3-7 Clicking the Touch Screen

#### Double-Clicking

To double-click, follow the preceding Clicking procedure, but touch the intended item twice. (Figure 3-8.)



Figure 3-8 Double-Clicking the Touch Screen

#### Dragging

To drag, touch the intended item and move the stylus tip over the screen without lifting the tip until the item is where you want to drop it; then lift the stylus tip. (Figure 3-9.)

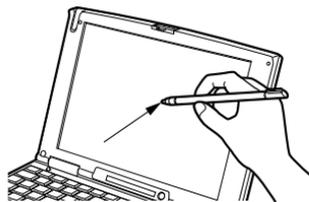


Figure 3-9 Dragging on the Touch Screen

## USING THE KEYBOARD

Your notebook has an integral 83-key keyboard. (Figure 3-10.) 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 3-10 highlights

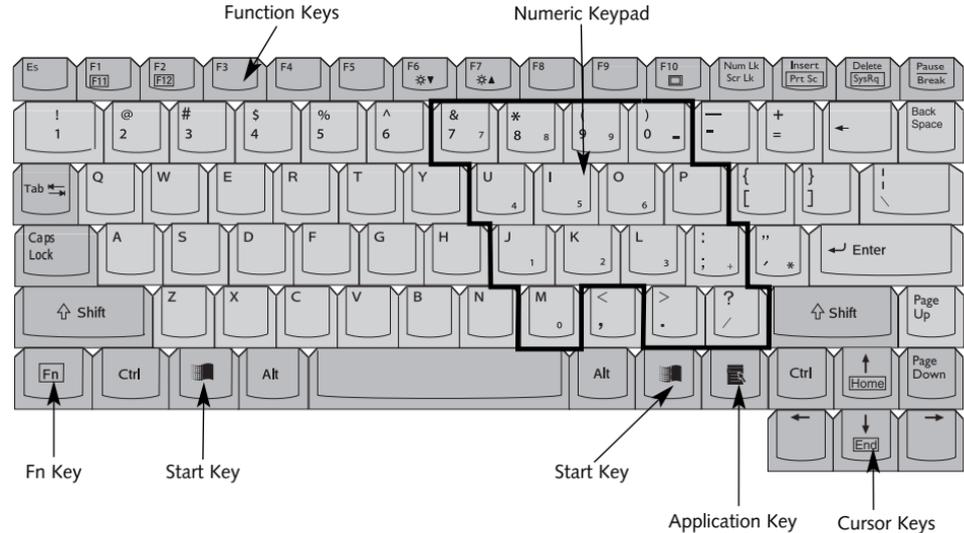
## Using Your LifeBook B Series

these keys. To switch into numeric keypad mode, press the **NumLk/ScrLk**. 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 lower right of the key to indicate their secondary functions.

To return these keys to their normal character function, press the **NumLk/ScrLk** key again.

### POINT

If you are using an optional external numerical keypad pressing the **NumLk** key will activate the external keypad and the indicator will come on, without changing the function of any keys on your keyboard.



### 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 → in applications; in Windows such as the Explorer window it moves the "focus" (moves to select the next item up, down, left, or right.)

Figure 3-10 Keyboard

 **POINT**

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

**Function Keys**

Your notebook has 10 function keys, **F1** through **F10**. 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. (Figure 3-10.)

**Fn Key**

The **Fn** key provides extended functions for the notebook and is always used in conjunction with another key. (Figure 3-10.)

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 800 x 600 pixel resolution will still cover the entire screen.)

Pressing **F6** while holding down the **Fn** key will lower the brightness of your display.

Pressing **F7** while holding down the **Fn** key will increase the brightness of the display.

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.

Pressing the Suspend/Resume button while holding down the **Fn** key will activate the Save-to-Disk mode. (Please see pages 37–39 for information regarding this feature.)

**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. (Figure 3-10.)

**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, your operating system Sound Control panel and any other application with sound.

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.

## BATTERIES

The Lithium ion battery is rechargeable, and the operating time will vary depending on active power management features and user activity levels. If the internal Lithium ion Battery goes dead, you must connect the AC adapter or shut down and install 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, an external 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, an external CD-ROM drive, or the hard drive frequently.



### 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).

### Shorted Batteries

If your Status Indicator panel shows a shorted battery, check the installation for the 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 Battery

If you want to check the condition of the primary Lithium ion battery, check the Battery Level indicator located on the Status Indicator panel. The indicator changes as the battery levels change. (Figure 3-2 on page 22.)



#### POINT

The status panel of your notebook will not display information for a second battery when using a dual-battery configuration. Since the battery charger is connected to the DC power jack of the notebook, the notebook does not treat it as a battery.

The Lithium ion battery is recharged internally using the AC adapter or auto/airline adapter, or you can use the optional external battery charger. To recharge a battery internally:

- Make sure the battery to be charged is installed in your notebook and connect the AC 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 22.)

Consult the documentation that comes with the optional external battery charger for instructions on using it to charge batteries.

There is no memory effect on the Lithium ion batteries, which means that you do not need to discharge them completely before recharging, this is called "trickle charging". For approximate charging times see Self Help on our Service and Support website at [www.8fujitsu.com](http://www.8fujitsu.com). Once there click on *Self Help Center*. Using the pull-down menu select B Series then select *Specifications* then your unit.



#### 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 flashes. If you do not respond to the low battery alarm, the battery will continue to discharge until it is 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 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.

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, 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 Suspend mode, your data can be maintained for some time. 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 page 16 for shutdown procedures.*)



#### CAUTION

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

## EXTERNAL FLOPPY DISK DRIVE

The external 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 *Windows 98 SE Guide for more information.*)

### 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 3-11.)

### Ejecting a Floppy Disk

To eject a disk, check that the Floppy Disk Drive Access indicator is Off, and press the Eject button. (Figure 3-11.)

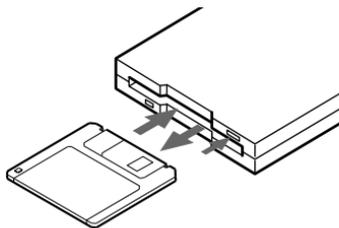


Figure 3-11 Loading/Ejecting a Floppy Disk



### 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, the disk or the disk drive.

### 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. (Figure 3-12.)

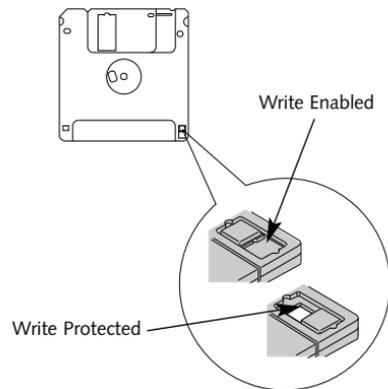


Figure 3-12 Floppy Disk Write Protect

**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 heat.
- 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.

**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.

**CAUTION**

If you reformat the internal hard drive ALL data including the operating system, applications software and user data will be erased. Unless data is copied to floppy disks or other data storage media it

will be permanently lost. All software will 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 compartment when you purchased your notebook. (See *Restoring Your Pre-installed Software from CD-ROM on page 81 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 *Your Save-to-Disk File Allocation on pages 45-46 for more information.*)

## INTERNAL MODEM

Your LifeBook B Series is configured with a 56K fax/data/voice modem with V.90 support.



### POINT

The internal modem is designed to the ITU-T V.90 standard. Its maximum speed of 53000bps is the highest allowed by the FCC, 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.

## 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. With Windows 98 SE, you can use the Infrared Recipient program for infrared file transfers. LapLink Professional software can also be used for infrared file transfers. See your online help for more information.



### CAUTION

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



### 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.

## POWER MANAGEMENT

Your LifeBook B 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, or from settings made in your operating system.

### Using the Suspend/Resume Button

When your notebook is active, the Suspend/Resume button, (*figure 1-5 on page 5*), 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 3-13.*) 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 page 20.*) 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. (*See pages 37-38.*) When you receive your notebook B Series it will be set to the default, which is Suspend mode.



Figure 3-13 Suspend/Resume Button



## CAUTION

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

### Suspend Mode

The Suspend mode, or Standby mode in Windows 98 SE, 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 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 Standby from the Windows Shut down menu.
- 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 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 3-13.*), can be used to manually put your notebook into Save-To-Disk mode. However, you must first enable Save-to-Disk mode by enabling Save-to-Disk mode in the BIOS Setup utility Power menu.

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 page 20.*) 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.



#### POINT

Save-to-Disk mode will not operate when **Resume On Modem Ring** has been selected in the BIOS.



#### POINT

If power is lost during Save-to-Disk mode the data will be retrieved automatically as soon as power is returned.



#### 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.

**CAUTION**

Be sure you know which settings are active for the Suspend/Resume Button before you use it; misuse can result in data loss.

**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 increase the system memory with a memory Upgrade module, you will need to change the size of your Save-to-Disk allocation. Use the PHDISK Utility to increase the size of the Save-to-Disk file, SAVE2DSK.BIN. (Refer to *Your Save-to-Disk File Allocation on pages 45-46 for more information.*) If you need help contact your support representative for recommendations.

**Save-to-Disk Mode**

The Save-to-Disk function saves the contents of the notebook's system memory to the hard drive as a part of the Suspend/Resume function. Your notebook is setup to perform this function in one way and can be configured through the system BIOS to do it in other ways.

Default Method for using Save-to Disk Mode:

- Press the Fn key together with the Suspend/Resume button when activating the Suspend mode. The Save-to-Disk pop-up will appear on your screen, simply wait until it has finished and your notebook will go into Save-to-Disk mode.

Customer configured BIOS methods:

- Press the Power Button until acknowledged with Save-to-Disk mode enabled from the Power menu of the BIOS setup utility.
- Select Standby from the Windows Shut Down menu with Save-to-Disk enabled by the BIOS Setup Utility.

- 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 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 Power button, you return to the point in the operation where you left off, before going into Save-to-Disk mode.

 **POINT**

By holding down the **Fn** key while pressing the Power Button, it is possible to enter Save-to-Disk mode without enabling it in the BIOS Setup utility.

 **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**

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.

 **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.

 **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 *Your Save-to-Disk File Allocation* on pages 45-46 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 44.)

**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. Any activity will cause your notebook to return to normal operation automatically. This feature is independent of the Power button. This parameter is enabled and disabled in the BIOS setup utility.

**POINT**

Windows 98 SE has its own integrated power management features that include the functionality of those listed above. (Idle and Standby Mode)

### **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 44.)

### **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 44.) 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 SE 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.

### **ACPI and Windows 98 Second Edition**

Short for Advanced Configuration & Power Interface, a power management specification developed by Intel, Microsoft, and Toshiba. ACPI, which is part of the Windows 98 SE 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.

Your Windows 98 SE LifeBook B Series notebook is configured in APM (Advanced Power Management) mode. Due to ongoing industry development of ACPI technology, it is not recommended that you re-configure your notebook for ACPI mode.

### **PRE-INSTALLED SOFTWARE**

Your LifeBook B Series comes with Microsoft Windows 98 SE and pre-installed software applications for playing audio and reading various other 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.

### Microsoft Press Interactive Training

For users unfamiliar with Windows or just Windows 98, your B Series comes with this tutorial to help you get the most out of your operating system.

### Microsoft Works

Microsoft Works is a suite of software containing the basic tools to write letters and reports, track family and friends with address books, manage home finances, and create a home inventory. (Located in the Business Software folder.)



#### POINT

You can modify the setup of certain audio parameters in the BIOS setup utility, Advanced Menu – Multimedia Device Configuration Submenu. (See *BIOS Guide* on page 44 for more information.)

### ESS AudioRack

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).



#### 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.

### LapLink Professional

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

### 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 and configure your LCD display to conserve power. See your online help screens for information on how to use the program.



## POINT

Due to the fact that the LifeBook B Series hardware does not support 'CPU Clock Control' this option is not selectable in the 'Power Control' tab of the PMSet 98 application.

### Adobe® Acrobat® Reader

The Adobe Acrobat Reader allows you to view, navigate, and print PDF files across all major computing platforms.

### PC Doctor

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

### DATA SECURITY

Your LifeBook B 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 *BIOS Guide on page 44 for more information.*)

### 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

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).



## 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.

## BOOT SEQUENCE

Each time you power up or restart your LifeBook B 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 Windows 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 11.)
- You restart your computer from the Shutdown Menu 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 twice in a row. This method is not recommended since it can result in loss of data.



### POINT

The BIOS setup utility is entered by pressing the **F2** key during the boot while the Fujitsu logo is on the screen. (See *BIOS Setup Utility* on page 44 for more information.)



### POINT

When error messages occur see Power on Self Test (POST) Messages for help in understanding the meaning and required actions to be taken. (See pages 78-80.)

## 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 designators.

### Drive Designators

- A: Floppy disk drive.  
Used with the external floppy disk drive.
- C: Hard drive.  
Installed inside your notebook.
- D: CD-ROM drive.  
Used with the optional external CD-ROM drive.

## 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 BIOS's environment to operate your notebook. It is set at the factory for normal operating conditions.

The setup utility configures:

- Standard system parameters, such as date and time.
- Device control features parameters, such as I/O addresses, and boot device.
- Power Management parameters that help to conserve your notebook's batteries.
- 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 saving parameter settings. (For a more convenient process, see the *Windows Power Management Control Panels* section on page 40.)
- 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 description on page 28.)
- Reset which of the Touch Panel, Quick Point or PS/2 mouse is active.

### 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 appears with the current settings 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.

### Resetting to Default Values

If your BIOS values have changed and you wish to return to the default values, follow steps 1 and 2 above, then press **F9**, then press Enter, then press **F10** then Enter and your BIOS will be returned to its default values.

### BIOS Guide

A guide to your unit's BIOS is available on-line. Go to our service and support website at [www.8fujitsu.com](http://www.8fujitsu.com), click on Self Help Center, select B Series from the pull-down menu, then select BIOS Guides from the pull-down menu on the B Series page. This will take you to the BIOS guide page, where you can select your unit's BIOS from the pull-down menu. To find your unit's BIOS number, check your packing slip, or Info in BIOS setup.

## 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. Click on Start.
2. Click on Shut Down.
3. From the Shut Down menu select the restart option.
4. When the Fujitsu Logo appears on your screen press **F8** immediately, before the Windows 98 SE banner appears on the screen.
5. Select **6. Safe mode command prompt only**, then press **Enter**.

6. At the `c:\>` prompt, type `cd fujitsu`, then press **Enter**.
7. At the `c:\> fujitsu` prompt, type `PHDISK`. Press the **Enter** key.
8. The screen will display the amount disk space needed to perform the Save-to-Disk function with the current memory configuration and how much space is being used by the existing Save-to-Disk file.

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

1. Click on Start.
2. Click on Shut Down.
3. From the Shut Down menu select the restart option.
4. When the Fujitsu Logo appears on your screen press **F8** immediately, before the Windows 98 SE banner appears on the screen.
5. Select **6. Safe mode command prompt only**, then press **Enter**.

6. At the `c:\>` prompt, type `cd fujitsu`, Press the **Enter** key.
7. At the `c:\> fujitsu` prompt, type `PHDISK`. Press the **Enter** key.
8. 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. Click on Start.
2. Click on Shut Down.
3. From the Shut Down menu select the restart option.
4. When the Fujitsu Logo appears on your screen press **F8** immediately, before the Windows 98 SE banner appears on the screen.
5. Select **6. Safe mode command prompt only**, then press **Enter**.
6. At the `c:\>` prompt, type `cd fujitsu`, then press **Enter**.

7. Type `PHDISK /DELETE /FILE`  
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 reset the Save-to-Disk parameters, use the procedure below.

#### Resetting the Save-to-Disk Parameters:

1. Click on Start.
2. Click on Shut Down.
3. From the Shut Down menu select the restart option.
4. When the Fujitsu Logo appears on your screen press **F8** immediately, before the Windows 98 SE banner appears on the screen.
5. Select **6. Safe mode command prompt only**, then press **Enter**.
6. At the `c:\>` prompt, type `cd fujitsu`, then press **Enter**.

7. At the `c:\>fujitsu` prompt, type `phdisk / delete / file`, then press **Enter**.
8. The press any key to restart the computer.
9. When the Fujitsu Logo appears on your screen press **F8** immediately, before the Windows 98 SE banner appears on the screen.
10. At the `c:\>` prompt, type `cd fujitsu`, then press **Enter**.
11. At the `c:\fujitsu` prompt, type `phdisk / create / file`, the press **Enter**.
12. The press any key to restart the computer.



#### 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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## SECTION FOUR

### USER INSTALLABLE FEATURES

Your LifeBook B Series has a number of user installable features. This section describes how to install and remove equipment for each of the expansion features. The features are:

- A PC Card slot in the left side panel of your notebook allows you to install an external CD-ROM drive, a PC Card, an IC memory card (SRAM card) or a Zoomed Video card.
- A compartment in 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 Headphone jack on the right side of your notebook allows you to connect headphones or powered speakers.
- A PS/2 port on the rear panel of your notebook and on the Port Replicator allows you

to connect an external keyboard, mouse or numeric keypad.

- A Serial port cable, when inserted in it's slot on the back of your notebook, allows connection of these same RS-232C devices.
- An External Floppy Disk Drive port on the Port Replicator allows you to connect the external floppy disk drive.
- A Parallel port in the Port Replicator allows you to connect parallel devices, like a parallel printer, a parallel photo/image scanner, etc.
- A Serial port in the Port Replicator allows you to connect serial RS-232C devices, such as serial printers, serial scanners, or certain digital cameras or other handheld organizer devices.
- An External Monitor port in the Port Replicator allows you to connect an external monitor.
- Two USB ports in the right panel of your notebook allow you to connect Universal

Serial Bus devices, like a mouse and/or an image scanner.

- A modem (RJ-11) jack in the left side panel of your notebook allows you to connect a telephone line to the internal modem.
- A Docking port in the rear of your notebook allows the connection of the Port Replicator.

### PORT REPLICATOR

The Port Replicator extends the functionality of your notebook by providing ports to connect a PS/2 device, external floppy disk drive, a serial device, a parallel device, and an external monitor. The Port Replicator connects to the rear panel of your notebook.

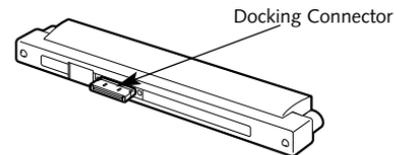


Figure 4-1 Port Replicator Front Panel

## User Installable Features

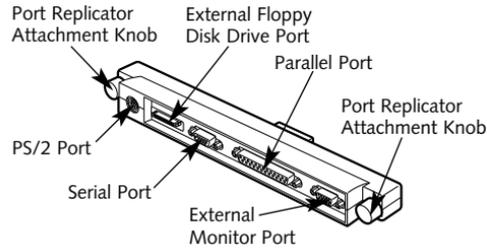


Figure 4-2 Port Replicator Rear Panel

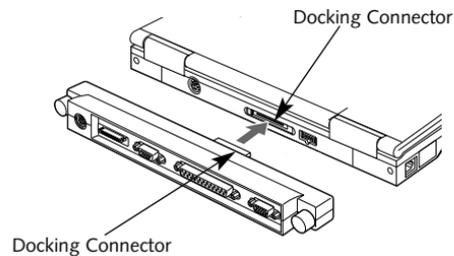


Figure 4-3 Connecting the Port Replicator

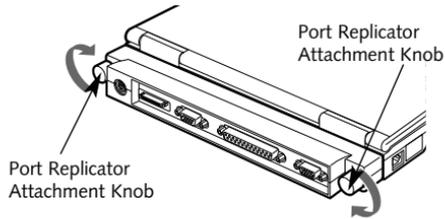


Figure 4-4 Securing the Connection

### To Install the Port Replicator:

The Port Replicator can be installed on your notebook while the power is on, while in Suspend mode, or while the power is off.

1. Open the Docking Connector cover on the rear panel of your notebook to expose the Docking Connector.
2. Align the Docking Connector on the rear panel of your notebook with the Docking Connector on the front panel of the Port Replicator. (Figure 4-3.)
3. Push the Port Replicator and the notebook together until the docking connectors are fully engaged. (Figure 4-3.)

4. Turn the Port Replicator Attachment Knobs clockwise to secure the connection between the Port Replicator and the notebook. You may have to push the knob in slightly to engage the threads. (Figure 4-4.)

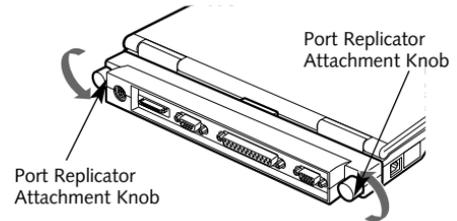


Figure 4-5 Releasing the Connection

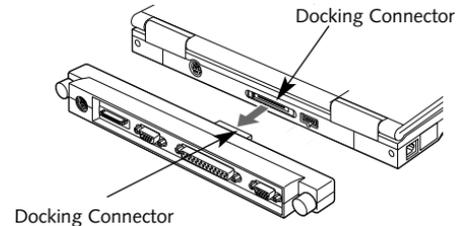


Figure 4-6 Removing the Port Replicator

**To Uninstall the Port Replicator:**

1. Shut down any files open on any devices attached to the Port Replicator and remove all connected devices.
2. Turn the Port Replicator Attachment Knobs counter-clockwise until the threads disengage and the knobs spin freely. (Figure 4-5.)
3. Pull the Port Replicator away from the notebook until the Docking Connectors are clear. (Figure 4-6.)

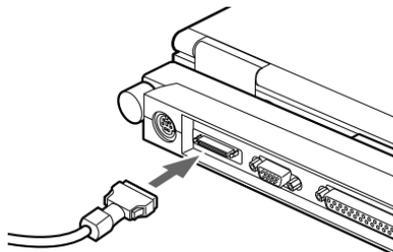
**INSTALLATION OF AN EXTERNAL FLOPPY DISK DRIVE**

Figure 4-7 Installation of an External Floppy Disk Drive

**To Connect the External Floppy Disk Drive:**

1. Align the connector of the external floppy disk drive with the connector towards the rear of your Port Replicator with the wide side of the connector up. (Figure 4-7.)
2. Insert the connector of the modular floppy disk drive firmly into the port on your Port Replicator until it clicks.

**To Disconnect The External Floppy Disk Drive:**

1. Squeeze the releases on the sides of the external floppy disk drive connector next to the Port Replicator together. (Figure 4-7.)
2. Pull the connector free.

**PC CARDS**

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

Some examples of PC Cards are:

- Fax/data modem cards (Type II).
- Local area network (LAN) cards (Type II).
- Wireless LAN cards (Type II).
- 1MB/2MB static RAM (SRAM) cards (Type I).

- IDE solid-state disk cards (Type II).
- SCSI cards (Type II).
- Zoomed Video cards (Type II).
- Other PC cards that conform to PCMCIA 2.1 or PC 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; however, 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.

## User Installable Features

- Do not force cards into the slot.
- Avoid dropping cards, or subjecting them to excessive vibration.

### Installing PC Cards in Your Notebook

PC cards are installed in the PC Card slot in the right 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 use the Control Panel, System and then Device Manager and choose a system to disable some device 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. If you do, you may permanently damage the card, your notebook, or both.

#### POINT

The B Series internal PC Card slot is a Zoom Video slot.

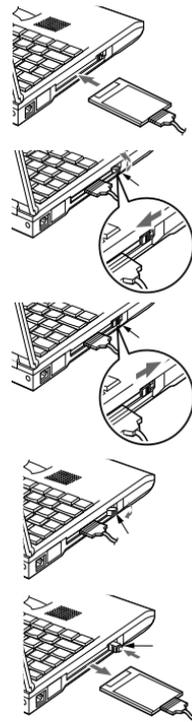


Figure 4-8 Installation and Removal of a PC Card

### To install 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 a PC Card.

#### 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.

3. Insert the PC Card in the card slot, with the product name label facing up. (See Figure 4-8.)
4. The PC Card is fully inserted when the eject button pops out.
5. Flip this button toward the front of your notebook to fold it out of the way.

- When the card is installed, lock it in place by sliding the lock button towards the front of your notebook. (See Figure 4-8.)

### 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.

### CAUTION

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

#### Removing a PC Card

- Shutdown operation of the card.
- Click on the PC Card indicator on the Windows taskbar.  
From the PC Card Properties Window:
- Select the card to be removed and click on the Stop button.
- Verify that the You can safely remove your card message appears.
- If the device cannot be removed message appears, save all files, close all applications, exit Windows 98 SE and then shutoff the power with the power switch. (See Power Off on page 16.)
- Slide the lock toward the rear of your notebook to release the card.

- Flip the eject button toward the rear of your notebook until it is fully extended.
- Press the eject button in until it is flush with the side of your notebook.
- Grasp the card and pull it clear of your notebook. (See Figure 4-8.)

### CAUTION

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

#### THEFT PREVENTION LOCK

A physical security system lock can be installed on the right side of your notebook. (See Figure 1-7 on page 6 for the location of the lock slot.) Simply insert the key end of your security system in the slot, rotate 90 degrees and lock.

## 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 1-7 on page 6.*)



### POINT

Plugging in headphones disables the built-in stereo speakers.

## 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 1-7 on page 6.*)

## USB MOUSE & DEVICES

Make sure the USB connector on the mouse is the correct 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 may be installed and automatically rec-

ognized by your notebook without restarting or changing setups. (See *Figure 1-7 on page 6.*)

When installing a device on the USB Port, be sure that the connector is the right size, aligned, and fully seated.

## PS/2 KEYBOARD, MOUSE OR NUMERIC KEYPAD

Make sure the connector on your device is the correct PS/2 type. Align the arrow on the connector to point to the top of your notebook and push it in until the connector seats. A keyboard or keypad may be installed and automatically recognized by your notebook without restarting or changing setups. (See *Figure 1-8 on page 7.*) To Connect a PS/2 mouse you will need to change the settings in your BIOS. (Please refer to the online BIOS Guide on our website at [www.8fujitsu.com](http://www.8fujitsu.com). See *page 44 for more information.*)

## 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 1-11 on page 8.*) Serial Port devices can be connected to your notebook, without the Port Replicator or by utilizing the optional Mini-Serial Adapter with your notebook.

## 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 1-11 on page 8.*)

## 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 1-11 on page 8.*)

### 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.

### TELEPHONE LINES

To attach a telephone line to the internal modem, locate the modem (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 up. Push it into the jack until it clicks and latches. (See *Figure 1-6 on page 6.*)

### 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.

### MEMORY UPGRADE MODULE

### CAUTION

Before you install or remove a memory upgrade module, save changes, close all files and turn power off to your notebook. (See *Power Off on page 16.*)

Your notebook has 32MB of installed SDRAM. To increase your memory capacity you may install a memory upgrade module in the memory upgrade compartment in the bottom of your notebook. A memory upgrade module is a dual-in-line memory module (DIMM). You may add a module of different capacity. SDRAM memory upgrade modules are required.

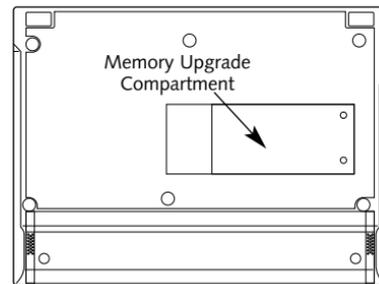


Figure 4-9 B Series Memory Upgrade Compartment

## User Installable Features



### CAUTION

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



### POINT

For further information about memory modules for upgrades please visit our web site at [www.fujitsu-pc.com](http://www.fujitsu-pc.com).

### To Install a Memory Upgrade Module

1. Turn off power to your notebook using the power switch, (see *Power Off* on page 16), 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 of the memory upgrade compartment. (Figure 4-10.)
5. Remove the cover by lifting it by the notch in the right edge and pulling it to your right.
6. Remove the memory upgrade module from its static guarded sleeve.



### CAUTION

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

7. Align the connector edge of the memory upgrade module with the connector slot in the compartment. The notch on the module should be on the right with the part side up, the connector pointing towards the back of the notebook and aligned with the notch in the connector inside the compartment. (Figure 4-10.)

8. Insert the memory upgrade module at a 45° angle. (Figure 4-10.) Press the con-connector edge of the module firmly down and into the connector.

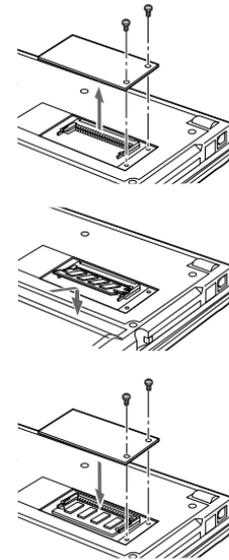


Figure 4-10 Memory Upgrade Installation

9. Press the back of 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 sliding the tabs on the left edge of the cover in the slots in the left edge of the compartment and pushing the cover gently down.
11. Replace the screws.

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

 **POINT**

After installing your added memory module, you must complete the Resetting the Save-to-Disk Parameters procedure in order for the Save-to-Disk mode to operate properly on your LifeBook. (See page 46.)

### To Remove a Memory Upgrade Module

1. Perform steps 1 through 5 of To Install a Memory Upgrade Module.
2. Pull clips sideways from each side of the memory upgrade module.
3. While holding clips out, remove the module from the slot by lifting it up and pulling towards the front of your notebook.
4. Store the memory upgrade module in a static guarded sleeve.
5. Replace the cover by following the instructions in steps 10 through 11 of the instructions of To Install a Memory Upgrade Module, or install new memory upgrade modules and then replace the cover by following the instructions in steps 6 through 11 of the instructions of To Install a Memory Upgrade Module.

### Checking the Computer Recognition of New Memory Capacity

When you have changed system memory capacity by adding or removing memory upgrade modules, be sure to check that your notebook has recognized all of the active 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. (See page 44.)
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, 31M Extended Memory.

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

Total RAM Installed	System Memory	Extended Memory
32MB	640K	31M
64MB	640K	63M
96 MB	640K	95M
160MB	640K	159M

If the total memory displayed is not what you believe it should be, check that your memory upgrade module is properly installed. If properly installed and the capacity is not correctly recognized, see the Troubleshooting Section starting on page 60.

**Troubleshooting**

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## SECTION FIVE TROUBLESHOOTING

The LifeBook B 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 left 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. *(See page 61 has an index to the table.)*



### 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.



### CAUTION

Do not return a failed notebook to your supplier until you have talked to a support representative.

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](mailto:8fujitsu@fpc.fujitsu.com)  
Web Site <http://www.8fujitsu.com>.

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.

- PIN (Personal Identification Number) on the card located in the service and support folder.
- Conditions under which the problem occurred.
- Any error messages that have occurred.
- Hardware configuration.
- Type of printer connected, if any. See the Unit Label on the bottom of your notebook for configuration and serial numbers. (See *Figure 1-9 on page 8.*)

## 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 Symptom 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.

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## Symptom

### Floppy Disk Drive Problems

You cannot access your floppy disk.

## Possible Cause

1. Security is set to protect access to floppy disk data.
2. Floppy disk is not inserted in Disk Drive.
3. BIOS setup utility has `Diskette Controller: Disabled`
4. You tried to write to a write protected floppy disk.

## Possible Solution

1. Verify your password and security settings.
2. A) Check to make sure disk is inserted in drive.  
B) Check cables on Port Replicator.  
C) Make sure Port Replicator is properly connected.
3. Revise the setup utility Main menu settings. *(See Main Menu in the BIOS Setup Utility, page 44.)*
4. Eject the floppy disk and set it to write enabled. *(See page 32.)*

### Hard Drive Problems

You can not access your hard drive.

1. The setup utility is set to something other than the characteristics of your internal hard drive.
2. Security is set so operating system can not be started without a password.

1. Revise BIOS settings to set the Primary Master correctly. *(See Main Menu and Primary Master Sub menu in the BIOS Setup Utility, page 44.)*
2. Verify your password and security settings. *(See Security menu in the BIOS Setup Utility, page 44.)*

## Troubleshooting

### Symptom

#### Keyboard or Mouse Problems

The built-in keyboard does not seem to work.

### Possible Cause

1. The notebook has gone into Suspend mode.
2. Your application has locked out your keyboard.
3. Check BIOS Settings in Advanced Keyboard/Mouse Feature.

### Possible Solution

1. Push the Suspend/Resume button.
2. Try to use the touchpad 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.
3. See page 44 for information on changing the BIOS settings.

You have installed an external keyboard or mouse, and it does not seem to work.

1. Your external device is not properly installed.
2. Your operating system software is not setup with the correct software driver for that device.

1. Re-install your device. (See *USB Mouse or Keyboard on page 53.*)
2. Check your device and operating system documentation and activate the proper driver.

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.

**Symptom****Possible Cause****Possible Solution****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 54-57.)*
2. Make sure display of error messages is enabled *(See Boot Options Submenu in the BIOS Setup Utility on page 44)*, and check for Power On Self Test (POST) messages. *(See pages 78-80 for possible messages and their meanings.)*

**Modem Problems**

Messages about modem operation.

1. Messages about modem operation are generated by whichever modem application is in use.

1. See your application software documentation for additional information.

**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.

1. The device is not properly installed.

1. Remove and re-install the device. *(See Parallel Port Devices, Serial Port Devices, or USB Devices on page 53.)*  
NOTE: for serial and parallel devices make sure Port Replicator is fully seated.

## Troubleshooting

### Symptom

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 (continued).

### PC Card Problems

A card inserted in the PC Card slot does not work or is locking up the system.

### Possible Cause

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.
6. Parallel port is set to output only.

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.

### Possible Solution

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.
  6. Check Parallel port settings in BIOS, and set to Bi-directional or Ecp.
- 
1. Remove and re-install the card.  
(See *PC Cards* on pages 50-52.)
  2. Close your application and restart your notebook.

**Symptom**

A card inserted in the PC Card slot does not work or is locking up the system (continued).

**Possible Cause**

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**

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.

**Power Failures**

You turn on your notebook and nothing seems to happen.

1. The internal battery is completely discharged, and there is no power adapter (AC or auto/airline) installed.

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 31.) Check the Status Indicator panel to determine the presence and condition of the batteries. (See page 22.) Install a power adapter if all batteries are dead or unavailable. (See page 10.)

**Troubleshooting****Symptom**

You turn on your notebook and nothing seems to happen (continued).

**Possible Cause**

2. The internal battery is completely discharged and the Power adapter (AC or auto/airline) has no power from the AC outlet, airplane seat jack, or the car's cigarette lighter.
3. The battery is installed but is completely discharged and the Power adapter (AC or auto/airline) has no power from the AC outlet, airplane seat jack, or the car's cigarette lighter.

**Possible Solution**

2. 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 31.) Check the Status Indicator panel to determine the presence and condition of the batteries and adapter. (See Figures 3-1 and 3-2 on pages 20 and 22.) 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.
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 31.) Check the Status Indicator panel to determine the presence and condition of the battery and adapter. (See Figures 3-1 and 3-2 on pages 20-22.) Move the AC cord to a different outlet, check for a line switch or tripped circuit breaker for the AC

**Symptom**

You turn on your notebook and nothing seems to happen (continued).

**Possible Cause**

4. The internal battery is completely discharged and the Power adapter (AC or auto/airline) is faulty.
5. Power switch is already in the On position.

**Possible Solution**

- 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 31.) Verify the cause using the Status Indicator panel to determine the presence and condition of the batteries and adapter. (See Figures 3-1 and 3-2 on pages 20-22.) Try a different Power adapter or install a charged optional second battery.
  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. If you shut down your notebook from Windows 98 SE, you are really in a pseudo-off state, there is some power on and you can restart with the Suspend/Resume button. (See Power Off on page 16.)

**Troubleshooting****Symptom**

You turn on your notebook and nothing seems to happen (continued).

**Possible Cause**

6. There is no battery installed and there is no Power adapter (AC or auto/airline) installed.
7. The internal battery is faulty and there is no Power adapter (AC or auto/airline) installed.
8. The battery or batteries are low.

**Possible Solution**

6. Use the Status Indicator panel to verify the presence and condition of the battery. (See *Figure 3-1 on page 20.*) Install a Power adapter. If the battery is not charged use a Power adapter until it is charged.
7. Use the Status Indicator panel to verify the presence and condition of the batteries. (See *Figure 3-1 on page 20.*) If a battery is indicating a short, remove that battery and operate from another power source or replace that battery.
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 31.*) Check the Status Indicator panel to determine the presence and condition of the batteries. (See *Figure 3-1 on page 20.*) Use a Power adapter to operate until a battery is charged or install a charged battery.

### Symptom

Your notebook turns off all by itself.

### Possible Cause

1. The power management parameters are set for auto timeouts which are too short for your operating needs.
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.
3. You have a battery failure.
4. Your Power adapter has failed or lost its power source.

### Possible Solution

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 BIOS Setup Utility Power Savings menu and adjust the timeout values to better suit your operation needs.
2. Install a Power adapter and then push the Suspend/Resume button. (*See Low Battery State on page 31.*)
3. Verify the condition of the batteries using the Status Indicator panel (*Figure 3-1 on page 20.*), and replace or remove any that are shorted.
4. Make sure the adapter is plugged in outlet has power.

## Troubleshooting

### Symptom

Your notebook won't work on battery alone.

### Possible Cause

1. The installed batteries are dead.
2. No battery is installed.
3. The batteries are improperly installed.
4. Your installed batteries are faulty.

### Possible Solution

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 31.)  
Replace the battery with a charged one or install a Power adapter.
2. Install a charged battery.
3. Verify that the batteries are properly - connected by re-installing them.
4. Verify the condition of the batteries using the Status Indicator panel, (Figure 3-1 on page 20.), and replace or remove any that are shorted.

The batteries seem to discharge too quickly.

1. You are running an application which uses a great deal of power because of frequent hard drive access or CD-ROM access, use of a modem PC Card or of a LAN PC Card.
2. The power savings features may be disabled.

1. Use both the internal battery and secondary battery and/or use a Power adapter for this application when at all possible.
2. Check the Windows 98 SE Power Management settings (See page 40.), and adjust according to your operating needs.

**Symptom**

The batteries seem to discharge too quickly (continued).

**Possible Cause**

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 29.)

**Possible Solution**

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 Savings menu of the setup utility.
2. You did not hold the button in long enough.
3. There may be a conflict with the application software.

1. Enable the button from the setup utility.  
(See *BIOS Setup Utility* on page 44.)
2. Hold the button longer. This may need to be a very long time if your application is preventing the CPU from checking for button pushes.
3. Close all applications, and try the button again.

## Troubleshooting

### Symptom

The system powers up, and displays the power on information, but fails to load operating system.

### Possible Cause

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

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. (See *Boot Menu in the BIOS Setup Utility on page 44.*)
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 in the BIOS Setup Utility on page 44.*)
3. Use the BIOS setup utility Main menu, Primary Adapter submenu to try to auto detect the internal hard drive.

An error message is displayed on the screen during the notebook turn on (boot) sequence.

1. Power On Self Test (POST) has detected a problem.

1. See the Power On Self Test (POST) Messages (See *pages 78-80.*) 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 thus returning to previous settings.

1. Make sure you select Save Changes And Exit when exiting the BIOS setup utility.

**Symptom**

Your notebook appears to change setup parameters when you start it (continued).

**Video Problems**

The built-in display is blank when you turn on your notebook.

**Possible Cause**

2. The BIOS CMOS hold-up battery has failed.

1. Something is pushing on the Closed Cover switch.
2. The notebook is set for an external monitor only.
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.

**Possible Solution**

2. Contact your support representative for repairs. This is not a user serviceable part but has a normal life of 3 to 5 years.
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.
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.)

## Troubleshooting

### Symptom

The built-in display is blank when you turn on your notebook (continued).

The display goes blank by itself after you have been using it.

The Built-in Display does not close.

The Built-in Display has bright or dark spots.

### Possible Cause

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.
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.
1. A foreign object, such as a paper clip, is stuck between the display and the keyboard.
1. If the spots are very tiny and few in number, this is normal for a large LCD display.
2. If the spots are numerous or large enough to interfere with your operation needs.

### Possible Solution

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 PowerPanel settings or close your application and go to the setup utility Power Savings menu and adjust the timeout values to better suit your needs.
2. Clear the Closed Cover switch.
3. Press any key or move the pointer, if this doesn't work press the Suspend/Resume button.
1. Remove all foreign objects from the keyboard.
1. This is normal; do nothing.
2. Display is faulty; contact your support representative.

**Symptom**

The application display uses only a portion of your screen and is surrounded by a dark band.

You have connected an external monitor and it does not come on.

**Possible Cause**

1. You are running an application that does not support 800 x 600 pixel resolution display and display compensation is displayed.
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. 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. (See *Video Features Submenu of the Advanced Menu in the BIOS Setup Utility on page 44.*)
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 in the BIOS Setup Utility on page 44.*)
2. Reinstall your device. (See *External Monitor on page 53.*)
3. Check your device and operating system documentation and activate the proper driver.
4. See your monitor documentation.
5. Make sure Port Replicator is fully seated.

**T r o u b l e s h o o t i n g****Symptom****Miscellaneous Problems**

An error message is displayed on the screen during the operation of an application.

**Possible Cause**

1. Application software often has its own set of error message displays.

**Possible Solution**

1. See your application manual and help displays screens for more information. Not all messages are errors; some may simply be status.

## POWER ON SELF TEST MESSAGES

The following is an alphabetic list of error-and-status messages which Phoenix BIOS and/or your operating system can generate and an explanation of each message. Error messages are marked with an \*. Comments in *italic type* 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 (POST). (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 (POST) diskette tests. *Check to see that the drive is defined with the proper diskette type in the Utility Setup, (See page 44.) 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 a memory upgrade module verify that the module is properly installed. If it is properly installed you may want to check your Windows Setup so it is not trying to use 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 which 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 (POST). *Run the Setup Utility to check for the hard disk 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 (POST). *Run the Setup Utility to correct the inconsistency.*

## Troubleshooting

**\*Incorrect Drive B type - run SETUP** – Type of floppy drive B: 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 (POST). *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 failed test. *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.*

**#Press <F2> to enter SETUP** – message is displayed during Power On Self Test (POST). The message can be turned off by the Setup Utility Boot Options Submenu, but the **F2** key will still perform the same function.

**#\*Previous boot incomplete – Default configuration used** – Previous Power On Self Test (POST) did not complete successfully. Power On Self Test (POST) 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 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.

## 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 53000  
 (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.

## RECOVERING YOUR WINDOWS 98 SECOND EDITION SYSTEM

Included with your notebook (in the Accessories compartment) is a bootable floppy diskette and 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 PC Service and Support website 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.



#### CAUTION

User data and user installed software **CAN NOT** be recovered from the Emergency Recovery CD.



#### 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 purchased. (see the section *Starting Your LifeBook for the First Time*).

#### 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 provided bootable floppy disk.

1. Make sure that the external floppy disk drive is attached and that an external CD-ROM drive is attached, and that your notebook and the CD-ROM drive are both using their AC adapters for power.

2. Insert the bootable floppy disk in the floppy drive and insert the Emergency Recovery CD in the CD-ROM drive.
3. If your notebook is running when you insert the disks, exit your operating system and power down the notebook.
4. Start (power up) your notebook. Your notebook will automatically boot from the floppy disk.
5. You will notice your system 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.

If you received a message "This program may not be used on your computer" you are using the wrong Recovery CD for your notebook. Contact Fujitsu PC Service and Support to obtain the correct version.

## Troubleshooting

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. Power down your notebook. Remove the CD-ROM drive and the floppy disk drive.
10. Restart your notebook.

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 floppy disk drive, your notebook will boot from the hard drive regardless of the BIOS Boot Device Priority setting.

### 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.



### POINT

Look for and open files with the extensions .DOC and .TXT.

**C a r e   a n d   M a i n t e n a n c e**

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## SECTION SIX CARE AND MAINTENANCE

If you use your LifeBook from Fujitsu carefully, you will increase its life and reliability. This section provides some tips for looking after the notebook and the battery.

### CARING FOR YOUR NOTEBOOK

The LifeBook B Series is a durable but sensitive electronic device. Pay attention to the following items when using your LifeBook.

- 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.

### PROTECTING AND CLEANING THE TOUCH SCREEN

- Avoid scratching the screen surface.
- Never use anything except the included stylus or your finger – but not your fingernail – as a pointing device.
- Use only computer screen cleaning products to clean the touch screen.
- Use a soft cloth when cleaning the screen.

## 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. Your notebook automatically adjusts the brightness depending on the power source you are using at the time; the screen will be brighter when using the AC adapter and dimmer when using battery power. To manually change the brightness setting:  
Double-click the Task Tray icon on the Taskbar and select the Power Control tab.  
Adjust the backlighting as desired. Lower (darker) settings save more power.

4. Keep the volume level as low as possible for comfortable operation.
5. Set the power management for the maximum Power Savings profile of the PowerPanel settings or set an even longer life combination with the BIOS setup utility. *(See page 44 for instruction on these settings.)*
6. Put your notebook in Suspend mode when it is turned on and you are not actually using it.
7. Disable the parallel and serial ports using the SETUP utility if no devices are connected.
8. Keep APM enabled.
9. Disconnect USB devices when you do not need them.
10. Always use fully charged batteries.
11. Eject PCMCIA cards when not in use.

## 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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## SPECIFICATIONS

These appendices provide the hardware and environmental specifications for LifeBook B Series notebooks. Specifications of particular configurations will vary.

### WARRANTY

Your notebook is backed by a one 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 B SERIES GENERAL SPECIFICATIONS

#### Microprocessor

The latest high-speed Intel Mobile processors, PCI bus and CardBus architectures.

#### Memory

##### System Memory (on-board)

SDRAM DIMM (static discharge random access memory, dual inline memory module.

\*Service and warranty turnaround time may vary by country and product.

#### L2 Cache Memory

On die.

#### BIOS Memory

512KB Flash ROM.

256 Bytes CMOS-RAM with back-up battery.

#### Video RAM

2MB.

#### Display

Built-in color flat-panel TFT active matrix LCD display with touch screen and simultaneous display capability.

#### Recommended Video Color and Resolution

##### CRT Displays

1024 x 768 pixel resolution, 64K colors

or

800 x 600 pixel resolution, 16M colors.

800 x 600 pixels.

SVGA, and VGA compatible.

#### Mass Storage Device

##### Floppy Disk Drive

One external 3.5" floppy disk drive which accommodates a 1.44MB or a 720KB floppy disk.

#### Hard Drive

One factory installed fixed hard drive unit.

#### Audio

SoundBlaster Pro-compatible 16-bit stereo PCM/FM sound chip.

Stereo headphone jack, 1 Vrms, or less, minimum impedance 32 Ohms.

Mono microphone jack, 125 mVp-p or less, minimum impedance 10K Ohms.

Two built-in speakers (stereo).

#### Integrated Pointing Device

Quick Point pointing device and Touch/Stylus.

#### Communication Options

Internal V.90 standard Global 56K fax/modem (ITU V.90, 56K data, 14.4K fax.)

*(See page 3 for caution on modem.)*

IrDA 1.1 compatible fast infrared port (4 Mbps).

#### Video

Zoomed Video support via PC Card Slot.

**Input/Output Connections****On the B Series LifeBook:**

- One Type II PC Card slot:  
PCMCIA Standard 2.1 with CardBus support; Zoomed Video support.
- One 6-pin mini DIN PS/2 compatible connector, for external keyboard or mouse.
- Two connectors for USB (Universal Serial Bus) input/output devices.
- One 80-pin Docking Connector (for Port Replicator).
- One modular RJ-11 communications connector.
- One stereo headphone jack.  
(See *Audio specifications*.)
- One mono microphone jack.  
(See *Audio specifications*.)

**On the Port Replicator:**

- One 80-pin Docking Connector (for B Series LifeBook).
- One 6-pin mini DIN PS/2 compatible connector, for external keyboard or mouse.
- One 25-pin D-SUB two-way Centronics type connector for parallel input/output devices; Bi-directional, output only or ECP.

- One 15-pin D-SUB connector for SVGA or VGA external monitor (See *Display specifications*.)
- One 9-pin D-SUB connector for RS-232C serial input/output devices.
- One 25-pin special connector for external floppy disk drive connection.

**Keyboard**

- Built-in keyboard with all functions of 101 key PS/2 compatible keyboards.
- Total number of keys: 84.
- Function keys: 12, **F1** through **F12**.
- Feature extension key: **Fn**.
- Windows keys: 3, two **Start** keys and one **Application** key.
- Key pitch: 15 mm.
- Key stroke: 2 mm.
- Built-in Quick Point 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**

USB compatible.

**Power****Batteries**

One Lithium ion battery, rechargeable, 10.8V, 3200 mAh. Operating time of up to 4 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 eight (8) hours.

**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.

### AC Adapter

Autosensing 100-240V AC, 45W, supplying 16V DC to the Notebook, which includes an AC cable.

### Optional Auto/Airline Adapter

Autosensing 12/24V DC, 53W supplying 16V DC to the Notebook.

### Power Management

Conforms to ACPI (Advanced Configuration and Power Interface) version 1.0.

### Dimensions and Weight

#### Overall Dimensions

Approximately 9" x 6.7" x 1.2"  
(notebook only)

(229 mm x 170 mm x 30 mm).

#### Weights

Approximately 2.65 lbs

(without Port Replicator).

Approximately 2.9 lbs (with Port Replicator).

### 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.

#### Pre-Installed Software

##### Windows 98 SE:

Microsoft Windows 98 Second Edition.

Microsoft Works.

AudioRack 32 by ESS Technology, Inc.

PMSet 98 by Fujitsu Limited.

Communicator by Netscape.

Internet Explorer by Microsoft.

McAfee VirusScan by Network Associates, Inc.

LapLink Professional by Traveling Software.

PC-Doctor by Watergate Software, Inc.

Adobe Acrobat Reader by Adobe, Inc.

Microsoft Press Interactive Training  
(Windows 98).

### PRE-CONFIGURED MODEL

Feature	B142
Processor	300MHz Celeron
Display	8.4" SVGA TFT Touch Screen
System Memory	32MB
HDD	6.4 GB
Weight	2.65 lbs 2.75 lbs w/Port Replicator

## GLOSSARY

### AC Adapter

A device which converts the AC voltage from a wall outlet to the DC voltage needed to power your notebook.

### ACPI 1.0

Advanced Configuration and Power Interface specification version 1.0. Conforming systems contain BIOS support to allow the Windows 98 SE 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 microprocessor 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.

### **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.

### **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.

**A p p e n d i c e s****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.

**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.

**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.

**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.

**LAN**

Local Area Network. An interconnection of computers and peripherals within a single limited geographic location which can pass programs and data amongst themselves.

**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 later the most common device connected to parallel ports.

### **MB**

Megabyte.

### **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.

### **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.

### **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.

**A p p e n d i c e s****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.

**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.

**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.

## **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.

## **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.

## **TUV**

TUV Rheinland of North America, Inc. – An independent organization that tests and certifies the electrical safety of devices.

**UL**

Underwriters Laboratories Incorporated – 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 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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