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B6FH-6861-01EN-00

WARNING



Handling the cord on this product or cords associated with accessories sold with this product, will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm.

Wash hands after handling.



DECLARATION OF CONFORMITY

according to FCC Part 15

Responsible Party Name: Fujitsu Computer Systems Corporation

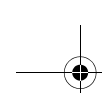
Address: 1250 E. Arques Avenue, MS 122
Sunnyvale, CA 94085

Telephone: (408) 746-6000

Declares that product: Model Configuration:
LifeBook P1510D Notebook
Complies with Part 15 of the FCC Rules.

This device complies with Part 15 of the FCC rules. Operations are 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.





IMPORTANT SAFETY INSTRUCTIONS

This unit requires an AC adapter to operate. Use only UL Listed Class 2 Adapters with an output rating of 16 VDC, with a current of 2.5 A.

AC adapter output polarity:



When using your notebook equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Avoid using the modem during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the modem to report a gas leak in the vicinity of the leak.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
- To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord.

SAVE THESE INSTRUCTIONS

For Authorized Repair Technicians Only



Danger of explosion if Lithium (clock) 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.

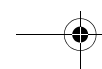


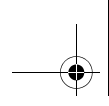
For continued protection against risk of fire, replace only with the same type and rating fuse.

System Disposal



LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE, OR FEDERAL LAWS.





Fujitsu LifeBook® P Series Notebook Table of Contents

1

PREFACE

Preface

About This Guide	3
Fujitsu Contact Information	3
Warranty	3

2

GETTING TO KNOW YOUR LIFEBOOK

Overview

Unpacking	7
Optional Accessories	7

Locating the Controls/Connectors

Front and Display Components	9
Left-Side Panel Components	10
Right-Side Panel Components	11
Rear Panel Components	12
Bottom Components	13

Status Indicators

Power Indicator	14
AC Adapter/Battery Charging Indicator	14
Battery Level Indicator	14
Hard Drive Access Indicator	14
NumLk Indicator	15
CapsLock Indicator	15
ScrLk Indicator	15

Display Panel

Opening the Display Panel	16
Using the System as a Tablet	16
Adjusting Display Panel Brightness	17

Keyboard

Using the Keyboard	18
Numeric Keypad	18
Windows Keys	18
Cursor Keys	18
Function Keys	19

LifeBook Application Panel

Changing Button Functions	21
-------------------------------------	----

Quick Point/Touch Screen

Clicking	22
Double-Clicking	22
Dragging	22
Quick Point Control Adjustment	23
Touch Screen	23

Volume Control

Controlling the Volume	25
----------------------------------	----

3

USING YOUR LIFEBOOK

Power Sources

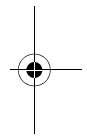
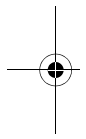
Connecting the Power Adapters	29
-----------------------------------------	----

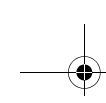
Starting Your LifeBook

Power On	30
Boot Sequence	30
BIOS Setup Utility	30
Booting the System	31
Registering Your LifeBook notebook	31
Installing Click Me!	31

Power Management

Suspend/Resume Button	32
Standby Mode	32
Hibernate Mode	33
Display Timeout	33





Hard Disk Timeout	33
Windows Power Management	33
Restarting the System	33
Power Off	34

4

USER-INSTALLABLE FEATURES

Lithium ion Battery

Recharging the Battery	37
Replacing the Battery	38

Memory Upgrade Module

Installing Memory Upgrade Modules	39
Removing a Memory Upgrade Module	39
Checking the Memory Capacity	40

Secure Digital Media

Inserting SD Cards	41
Removing An SD Card	41

Compact Flash Cards

Inserting Compact Flash Cards	42
Removing Compact Flash Cards	43

Port Replicator

Port Replicator Components	44
Attaching Port Replicator	44
Detaching Port Replicator	44

Device Ports

Modem (RJ-11) Jack	46
Internal LAN (RJ-45) jack	46
Docking Port	46
Universal Serial Bus Ports	46
Microphone Jack	46
Headphone Jack	46
External Video Port	47

5

TROUBLESHOOTING

Troubleshooting

Identifying the Problem	51
Specific Problems	51

Troubleshooting Table	52
Power On Self Test Messages	58
Modem Result Codes	59

Restoring Your Pre-installed Software

Restoring the Factory Image	60
Automatically Downloading Driver Updates	61

6

CARING FOR YOUR LIFEBOOK

Care and Maintenance

LifeBook P Series notebook	65
Keyboard	66
Batteries	66
Floppy Disk Drive and Floppy Disks	66
Optional Optical Drive and Discs	67
CF Cards	67

7

SYSTEM SPECIFICATIONS

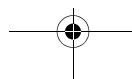
Specifications

Configuration Label	71
Physical Specifications	71
Processing Specifications	71
Memory/Storage Specifications	71
Display Specifications	71
Interface Specifications	71
Power Specifications	72
Environmental Specifications	72
Agency Approval Specifications	72
Additional Specifications	72
Regulatory Information	73

8

GLOSSARY

Glossary	77
--------------------	----



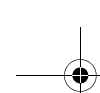


Table of Contents

APPENDIX A: INTEGRATED WIRELESS LAN USER'S GUIDE

Before Using the Wireless LAN

Wireless LAN Modes Using this Device	86
Wireless Network Considerations	87
Deactivating the WLAN Device	87
Activating the WLAN Device	88

Configuration of the WLAN Device

Flow of Operations	89
Configuration Using Atheros Client Utility	89
Connection to the network	90

Troubleshooting the WLAN

Troubleshooting Table	93
---------------------------------	----

Wireless LAN Glossary

Glossary	94
--------------------	----

IP address information

About IP Addresses	96
------------------------------	----

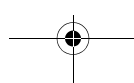
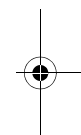
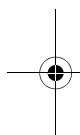
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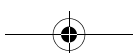
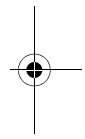
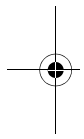
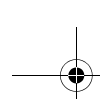
Specifications	97
--------------------------	----

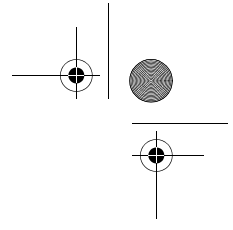
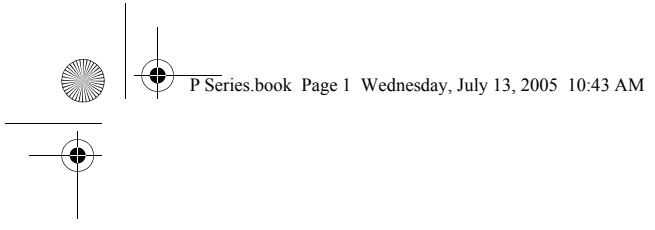
APPENDIX B: USING THE FINGERPRINT SWIPE SENSOR

Fingerprint Sensor Device

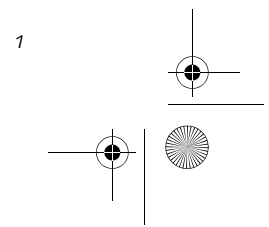
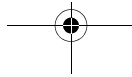
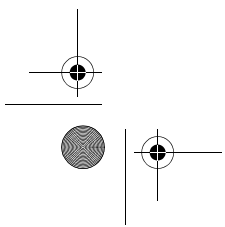
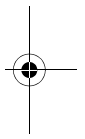
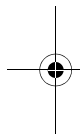
Introducing the Fingerprint Sensor Device	101
Getting Started	101
Installing OmniPass	101
User Enrollment	102
Using OmniPass	103
Configuring OmniPass	105
OmniPass Control Center	106
Troubleshooting	107

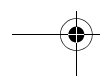
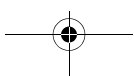
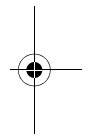
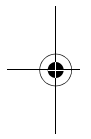
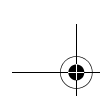


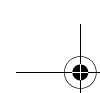




1 Preface







Preface

ABOUT THIS GUIDE

The LifeBook® P Series notebook from Fujitsu Computer Systems Corporation is a small yet powerful convertible computer. It can be used either as a standard notebook using keyboard input, or in tablet configuration using pen input. It is powered by an Intel® Pentium® M microprocessor, has a built-in color display with a passive digitizer, and brings the computing power of desktop personal computers (PCs) to a versatile portable environment.

This manual explains how to operate your LifeBook P Series notebook's hardware and built-in system software. Your notebook comes with the Windows® XP operating system pre-installed.

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

Conventions Used in the Guide

Keyboard keys appear in brackets.
Example: [Fn], [F1], [Esc], [Enter] and [Ctrl].

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

On screen buttons or menu items appear in bold.
Example: Click **OK** to restart your notebook.

DOS commands you enter appear in Courier type.
Example: Shutdown the computer?



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



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



The warning icon warns you about possible hazards that can occur to you, your system, or your files. Please read all warning information carefully.

FUJITSU CONTACT INFORMATION

Service and Support

You can contact Fujitsu Computer Systems Service and Support the following ways:

- Toll free: 1-800-8Fujitsu (1-800-838-5487)
- Fax: 1-408-764-2724
- E-mail: 8fujitsu@us.fujitsu.com
- Web site:
<http://www.computers.us.fujitsu.com/support>

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
- Conditions under which the problem occurred
- Any error messages that have occurred
- Type of device connected, if any

Fujitsu Online

You can go directly to the online Fujitsu Product catalog for your notebook. Go to Start -> Fujitsu Weblinks -> LifeBook Accessories.

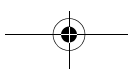
You can also reach Fujitsu Service and Support online by going to Start -> Fujitsu Weblinks -> Fujitsu Service and Support.

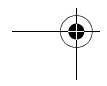
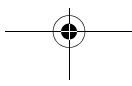
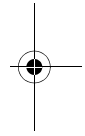
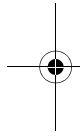
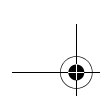


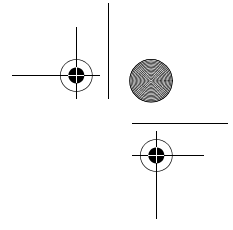
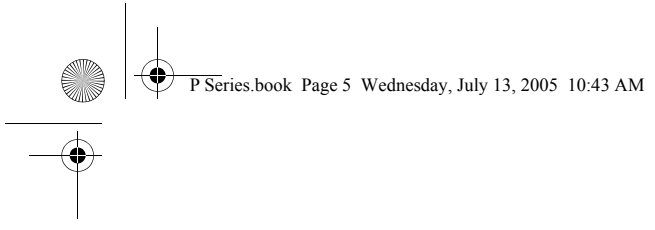
You must have an active internet connection to use the online URL links.

WARRANTY

Your LifeBook P Series notebook is backed by an International Limited Warranty and includes toll-free technical support. Check the service kit that came with your notebook for warranty terms and conditions.

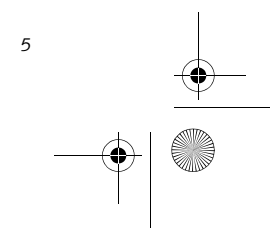
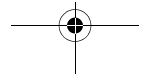
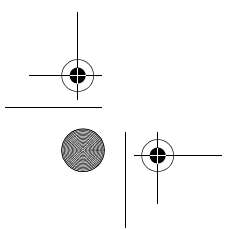
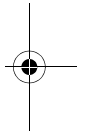
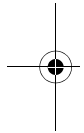


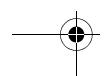
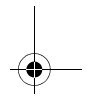
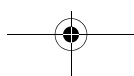
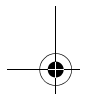
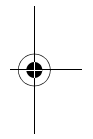
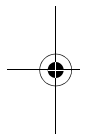
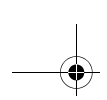




2

Getting to Know Your LifeBook





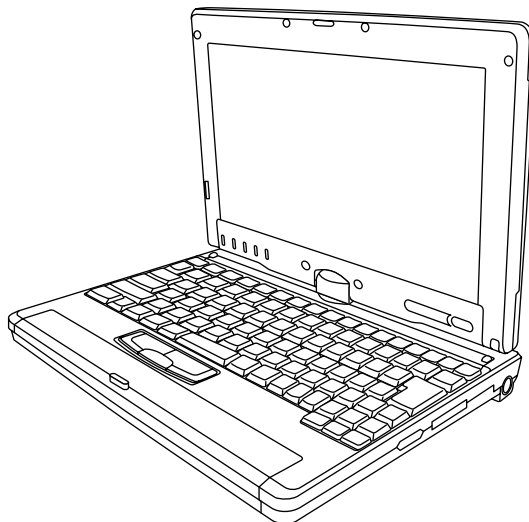


Figure 2-1. Fujitsu LifeBook P Series notebook

Overview

This section describes the components of your Fujitsu LifeBook P Series notebook. We strongly recommend that you read it before using your notebook, even if you are already familiar with mobile computers.

UNPACKING

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

For a pre-configured model you should have:

- LifeBook P Series notebook (Figure 2-1)
- AC adapter with AC power cord (Figure 2-2)
- Phone/Modem (RJ-11) telephone cable
- Pen
- Pen tether
- Driver and Application Restore (DAR) CD
- Recovery CD
- Third-party Application CD
- Getting Started Guide
- User's Guide (this document)
- International Limited Warranty Booklet
- Certificate of Authenticity
- Lithium ion battery (pre-installed)

You may also have one or more of the following devices in the box, depending upon the configuration of your system:

- Port Replicator (Figure 2-3)
- External USB Floppy Disk Drive
- Additional battery(s)
- Application CD(s) for third-party software

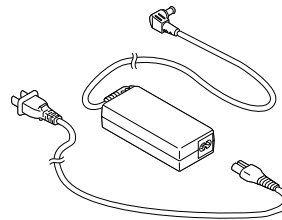


Figure 2-2. AC Adapter

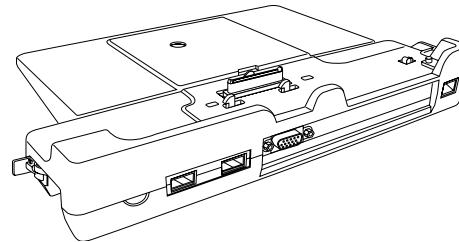
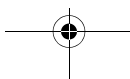
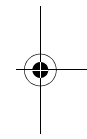
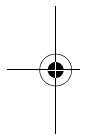


Figure 2-3. Optional Port Replicator

OPTIONAL ACCESSORIES

A variety of optional accessories is available for use with your LifeBook P Series notebook. For the latest list of accessories available, be sure to frequently check the Fujitsu Web site at: www.shopfujitsu.com. Refer to the instructions provided with these accessories for details on their use.



Locating the Controls and Connectors

Connectors and peripheral interfaces on the LifeBook P Series notebook and the optional port replicator allow you to connect a variety of devices. Specific locations are illustrated in Figures 2-4 through 2-8. The table below

provides a short description of each icon on the LifeBook P Series notebook. Each of the icons is either molded into or printed on the notebook chassis.














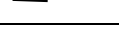
Connection	LifeBook Icon	Purpose
DC in connector		Connect an external power source such as the AC adapter or auto/airline adapter.
Secure Digital (SD) Slot		The Secure Digital (SD) card slot allows you to install a flash memory card for data storage. Flash memory cards allow you to transfer data to and from a variety of different digital devices.
USB Ports		Connect Universal Serial Bus 2.0 or 1.1 compliant devices to the notebook.
Microphone Jack		Connect an external microphone. The internal microphone is disabled when you plug in an external microphone.
Fingerprint Sensor		Use the fingerprint sensor to log onto the system using your fingerprint as the "password".
Headphone Jack		Connect stereo headphones or powered external speakers. The internal speaker is disabled when you plug in external headphones or powered speakers.
Modem		Connect a telephone line to the internal modem using a standard RJ-11 telephone plug.
Port Replicator		Connect the notebook port replicator or other approved docking device. Refer to documentation accompanying the dock for more information.
Security lock slot		The security slot allows you to secure the notebook using notebook locking devices.
Suspend/Resume button		The Suspend/Resume button allows you to suspend notebook activity without powering off, resume from suspend mode, and power on the system when it has been shut down from Windows.
Local Area Network (LAN)		The LAN (RJ-45) jack is used to connect the internal 10/100 Base-T/Tx Ethernet to a Local Area Network (LAN) in your office or home, or broadband devices such as a cable modem, DSL, or satellite Internet.
Battery Release Latch		The battery release latch allows you to remove the battery from your system for storage or replacement.
Wireless LAN On-Off Switch		The wireless LAN switch allows you to turn power to the optional wireless LAN device on and off.
Display Rotation		This icon indicates the direction in which the display should be rotated when converting to tablet mode.

Table 2-1. System icons

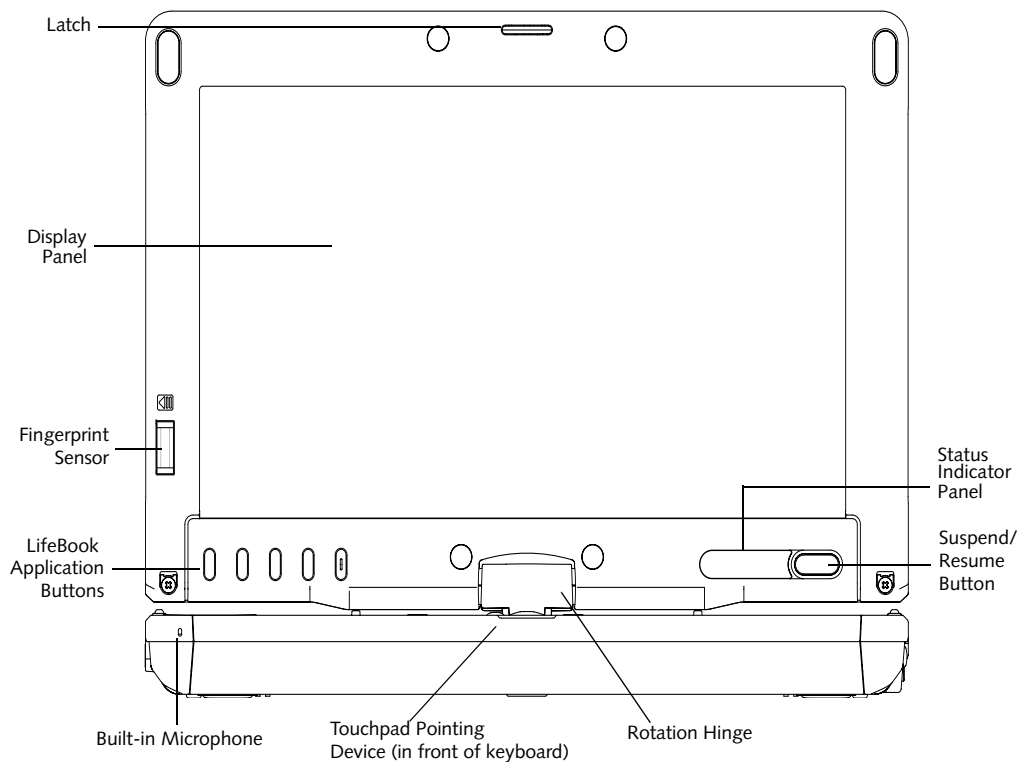


Figure 2-4. LifeBook P Series notebook with display open

FRONT AND DISPLAY COMPONENTS

The following is a brief description of the front and display features of the LifeBook P Series notebook. (Figure 2-4)

Display Panel Latch

The display panel latch holds the display panel in position.

Display Panel

The display panel is a color LCD panel with back lighting for the display of text and graphics and touch screen functionality.

Built-in Microphone

The built-in microphone allows you to input mono audio.

LifeBook Application Buttons

The LifeBook P Series notebook Application Buttons provide application launch capabilities. See "LifeBook Application Panel" on page 20.

Suspend/Resume Button

The Suspend/Resume button allows you to suspend notebook activity without powering off, resume your notebook from standby mode, and power on your system when it has been shut down from the Windows operating system. See "Power On" on page 30.

Keyboard

A full-function keyboard with dedicated Windows keys. See "Keyboard" on page 18.

Touchpad Pointing Device

The Touchpad pointing device consists of two mouse-like buttons and one scroll button. See "Quick Point Pointing Device/Touch Screen" on page 22.

Rotation Hinge

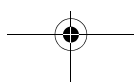
The rotation hinge allows you to transform your computer from a notebook configuration into a tablet configuration. See "Using the System as a Tablet" on page 16.

Fingerprint Sensor

The optional fingerprint recognition sensor allows you to start your system by swiping your finger over the sensor. See "Fingerprint Sensor Device" on page 101.

Status Indicator Panel

The Status Indicator Panel displays symbols that correspond to specific components of your LifeBook P Series notebook. See "Status Indicators" on page 14.



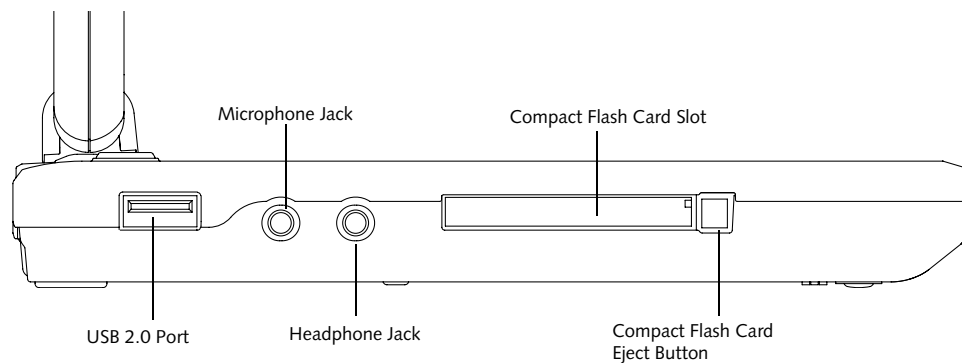
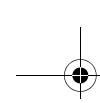


Figure 2-5. LifeBook P Series notebook left-side panel

LEFT-SIDE PANEL COMPONENTS

Following is a brief description of your notebook's left-side components. (Figure 2-5)

USB 2.0 Port

The USB 2.0 port allow you to connect Universal Serial Bus devices. See "Universal Serial Bus Ports" on page 46.

Compact Flash Card Slot

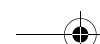
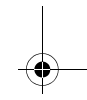
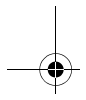
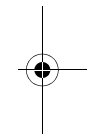
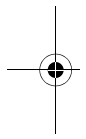
The Compact Flash (CF) Card Slot allows you to insert a CF Card. The CF Card Eject Button is used when ejecting a CF Card from the slot. See "Inserting Compact Flash Cards" on page 42.

Microphone Jack

The microphone jack allows you to connect an external mono microphone. See "Microphone Jack" on page 46.

Headphone Jack

The headphone jack allows you to connect stereo headphones or powered external speakers. See "Headphone Jack" on page 46.



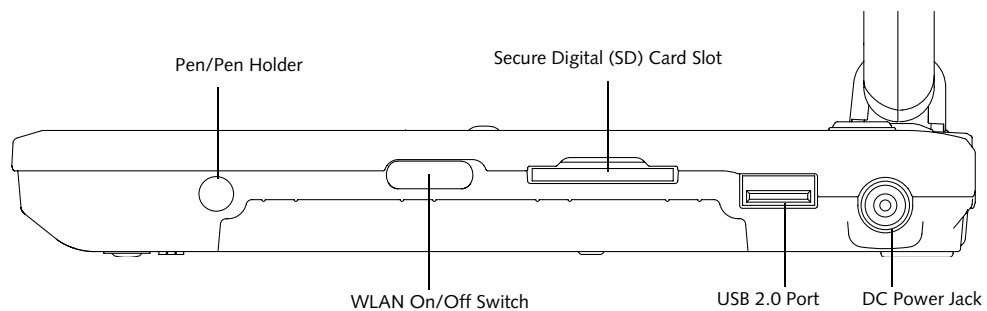


Figure 2-6. LifeBook P Series notebook right-side panel

RIGHT-SIDE PANEL COMPONENTS

Following is a brief description of your notebook's right-side components.

Pen/Pen Holder

The pen is used as the interface with the digitizer display.

WLAN On/Off Switch

The wireless LAN On/Off Switch is used to power off the wireless antenna when not in use.

SD Card

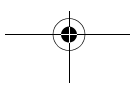
The Secure Digital (SD) card slot allows you to insert a flash memory card for data storage. Flash memory cards allow you to transfer data to and from a variety of different digital devices.

USB 2.0 Port

The USB 2.0 port allow you to connect Universal Serial Bus devices. See "Universal Serial Bus Ports" on page 46.

DC Power Jack

The DC power jack allows you to plug in the AC adapter or the optional Auto/Airline adapter to power your notebook and charge the internal Lithium ion Battery.





LifeBook P Series Notebook - Section Two

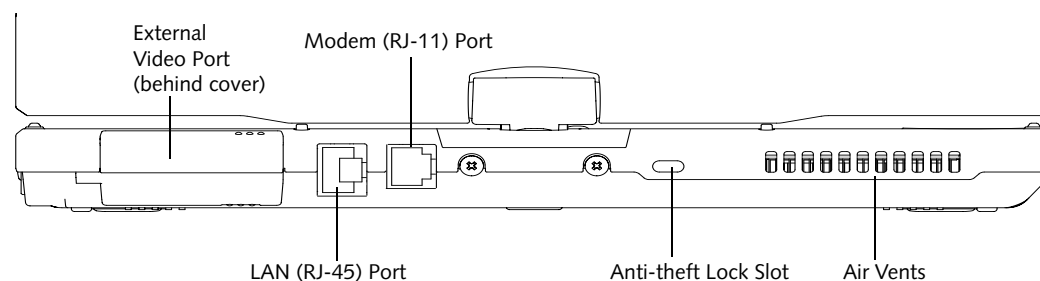


Figure 2-7. LifeBook P Series notebook rear panel

REAR PANEL COMPONENTS

Modem (RJ-11) Telephone Port

The Modem (RJ-11) telephone port is for attaching a telephone line to the internal multinational 56K modem.



The internal multinational 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 LifeBook P Series 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.

Air Vents

The air vents allow proper air circulation to ensure that the notebook does not overheat.



To protect your notebook from damage and to optimize system performance, be sure to **keep all air all vents unobstructed, clean, and clear of debris**. This may require periodic cleaning, depending upon the environment in which the system is used.

Do not operate the notebook in areas where the air vents can be obstructed, such as in tight enclosures or on soft surfaces like a bed or cushion.



The internal modem is designed to the ITU-T V.90 standard. Its maximum speed of 53000 bps is the highest allowed by FCC, and its actual connection rate depends on the line conditions. The maximum speed is 33600 bps at upload.

Anti-theft Lock Slot

The anti-theft lock slot allows you to attach a optional physical lock-down device.

LAN (RJ-45) Port

The internal LAN (RJ-45) port is used for an internal 10/100Base-Tx Ethernet. See "Internal LAN (RJ-45) jack" on page 46.

External Video Port

The external video port allows you to connect an external CRT monitor or LCD projector. Note that when the optional Port Replicator is attached to the system, you must use the external video port on the Port Replicator rather than the port on the system. See "External Video Port" on page 47.





Getting to Know Your Tablet PC

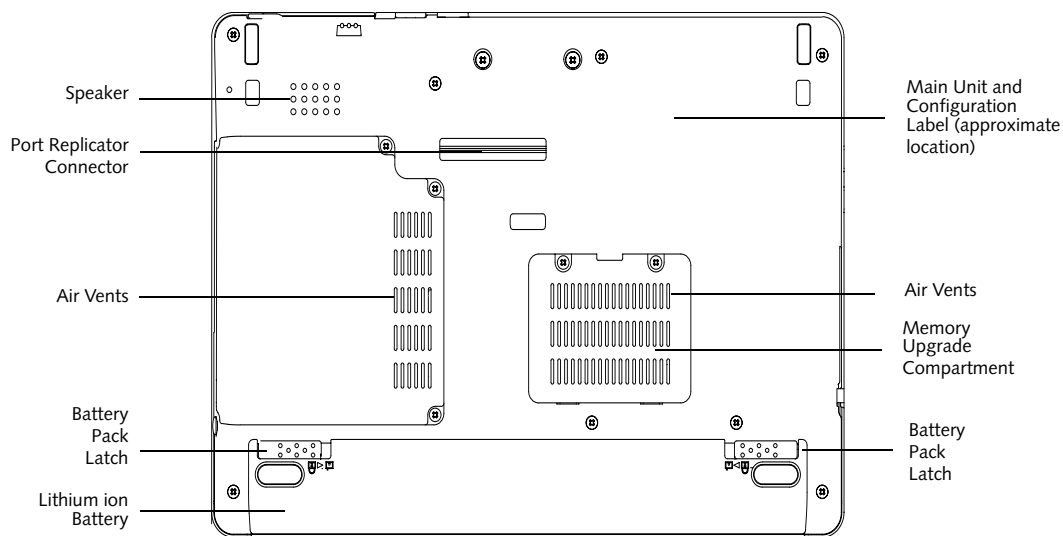


Figure 2-8. LifeBook P Series notebook bottom panel

BOTTOM COMPONENTS

Following is a brief description of your notebook's bottom panel components. (Figure 2-8)

Lithium ion Battery Compartment

The battery compartment contains the internal Lithium ion battery. The battery should be removed when the computer is stored over a long period of time or for swapping a discharged battery with a charged Lithium ion battery. See "Lithium ion Battery" on page 37.

Port Replicator Connector

This connector allows you to connect the optional port replicator.

Speaker

The speaker allows you to listen to sound from your system.

Main Unit and Configuration Label

The configuration label shows the model number and other information about your LifeBook P Series 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. It identifies the exact version of various components of your notebook.

Memory Upgrade Compartment

Your notebook comes with high speed DDR2 Synchronous Dynamic RAM (SDRAM). The memory upgrade

compartment allows you to expand the system memory capacity of your notebook, hence improving overall performance. See "Memory Upgrade Module" on page 39.

Air Vents

The air vents allow proper air circulation to ensure that the notebook does not overheat.

To protect your notebook from damage and to optimize system performance, be sure to **keep all air all vents unobstructed, clean, and clear of debris**. This may require periodic cleaning, depending upon the environment in which the system is used.



Do not operate the notebook in areas where the air vents can be obstructed, such as in tight enclosures or on soft surfaces like a bed or cushion.



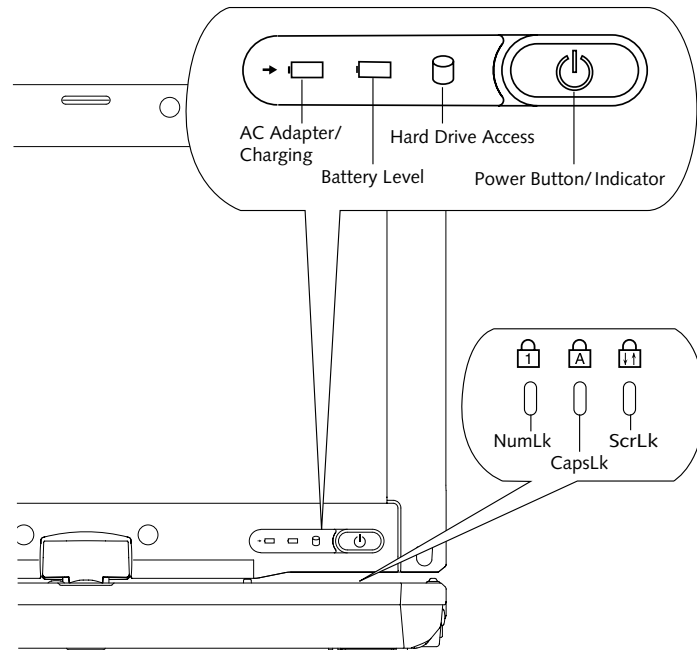


Figure 2-9. Status Indicators

Status Indicators

The status indicators display symbols that correspond to specific components of your notebook. (Figure 2-9) The symbols show how each of those components is operating. Note that keyboard-related indicators (CapsLk, NumLk, ScrLk) are located above the keyboard.



POWER INDICATOR

The Power indicator symbol located on the power button shows whether your system is operational. When it is lit blue, it means that there is power to your notebook and that it is ready for use.



AC ADAPTER/BATTERY CHARGING INDICATOR

The AC Adapter/Battery Charging indicator shows that your notebook is operating from the AC adapter or an auto/airline adapter. This icon has two different states that can tell you the battery charge status.

- **Green:** This means that a power adapter is currently in use and the battery is not charging.
- **Amber:** This means that a power adapter is currently in use and the battery is charging.



BATTERY LEVEL INDICATOR

The Battery Level indicators shows whether the Lithium ion battery is installed and charging, and how much charge is available within the batteries.

- **Green:** The battery is installed and fully charged.
- **Amber:** The battery is installed and is approximately half charged.
- **Red:** The battery charge is low and it should be charged with an adapter or replaced with a charged battery.



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

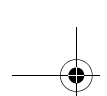


If there is no battery activity and the power adapters are not connected, the Battery Level indicators will also be off.



HARD DRIVE ACCESS INDICATOR

The Hard Drive Access indicator lights green when your internal hard drive is being accessed.



NUMLK INDICATOR

The NumLk indicator shows that the integral keyboard is set in ten-key numeric keypad mode.



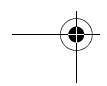
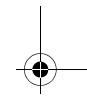
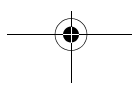
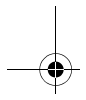
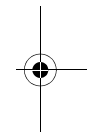
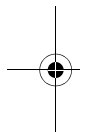
CAPSLCK INDICATOR

The CapsLock indicator shows that your keyboard is set to type in all capital letters.



SCRCLK INDICATOR

The ScrLk indicator shows that your scroll lock is active.



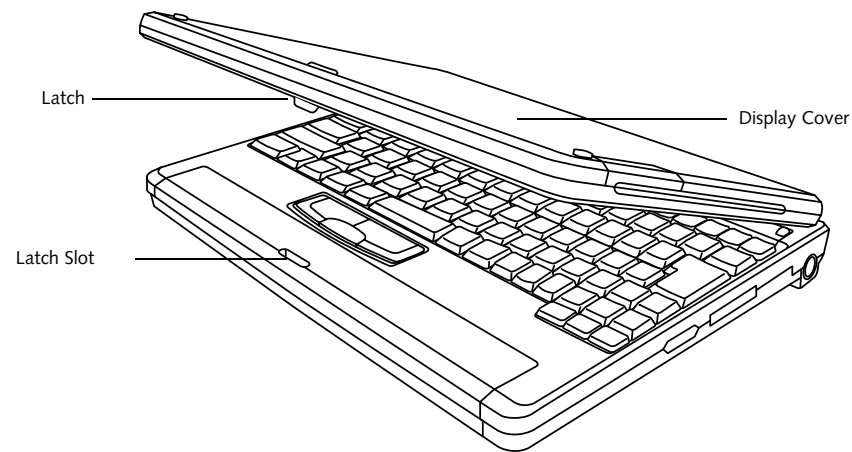


Figure 2-10. Opening the display

Display Panel

The convertible design of your LifeBook P Series notebook allows you to open the display fully, rotate it 180 degrees, and lay it face up on the keyboard. This allows you to use the system as a tablet, much as you would a pad of paper.

OPENING THE DISPLAY PANEL

Lift the display cover backwards, being careful not to touch the screen, until it is at a comfortable viewing angle. (Figure 2-10)

USING THE SYSTEM AS A TABLET

If you would like to use the system as a tablet, perform the following steps.



Rotate the system display only in the direction indicated in the procedure. Turning the display in the incorrect direction could damage the hinge.



In the following step, be sure to position the display perpendicular to the keyboard, otherwise the keyboard or display cover could get scratched.

1. Lift the display until it is perpendicular to the keyboard. (Figure 2-12).
2. When the display is perpendicular to the keyboard, rotate it clockwise (when viewed from the top). Be very careful to rotate it in the direction indicated. (Figure 2-13). Turn the display 180 degrees so that it is facing backwards. (Figure 2-14)
3. Holding the top edge of the display panel, pull it forward until it is lying nearly atop the keyboard.

4. Push the latch towards the display (See "A" in Figure 2-11). The latch will click twice and the top latch disappears, and the bottom latch appears (See "B" in Figure 2-11). Lay the display flush against the system so that the latch rests in the slot in the battery pack. You can now use the system as a tablet. (Figure 2-15)

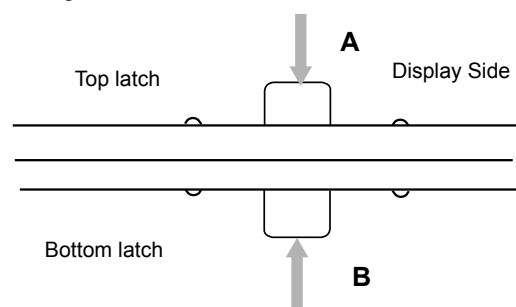


Figure 2-11. Using the Display Latch

5. To return the system to notebook configuration, repeat step 3 and 2. Be sure to turn the display in the opposite direction when performing step 2.

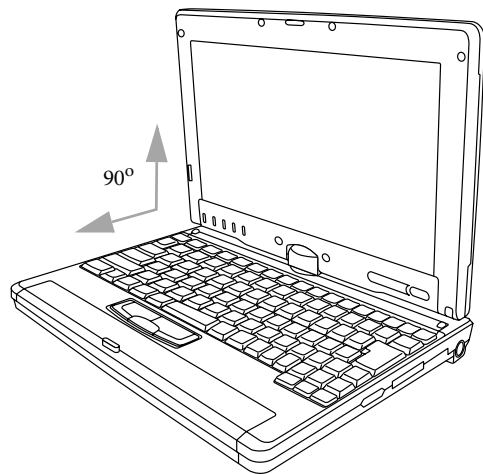


Figure 2-12. Fully open display

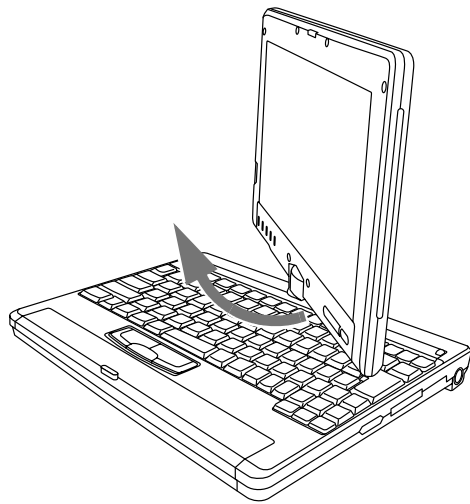


Figure 2-13. Rotating the display

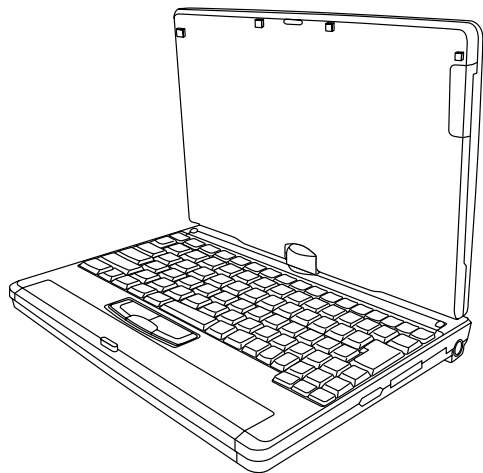


Figure 2-14. Display rotated completely

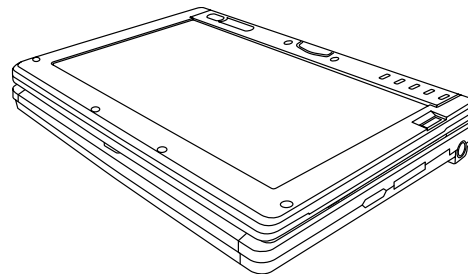


Figure 2-15. System in tablet configuration

ADJUSTING DISPLAY PANEL BRIGHTNESS

Once you have turned on your notebook, you may want to adjust the brightness level of the screen to a more comfortable viewing level. There are three ways to adjust the brightness, keyboard, power management utility, and Fujitsu menu.

Using Keyboard to Adjust Brightness

Adjusting the brightness using the keyboard changes the system setting (i.e., the settings you make via the function keys automatically changes the brightness settings in the system's Brightness Control settings).

- [Fn+F6]: Pressing repeatedly will lower the brightness of your display.
- [Fn+F7]: Pressing repeatedly will increase the brightness of the display.

Using Power Management to Adjust Brightness

To adjust brightness with the power management utility, click Start -> Control Panel -> Brightness Control. Set the screen brightness slider for battery and AC power scenarios.

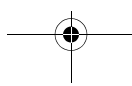
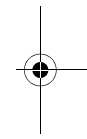
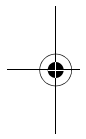
Using the Fujitsu Menu to Adjust Brightness

To adjust brightness using the Fujitsu menu, click on the Fujitsu Menu icon in the system tray in the lower right corner of the screen. From the menu that appears, select Brightness Control. The Brightness Control window will open. Set the screen brightness slider for battery and AC power scenarios.

If using AC power, your brightness setting is set to its highest level by default. If using battery power your brightness settings is set to approximately mid-level by default.



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



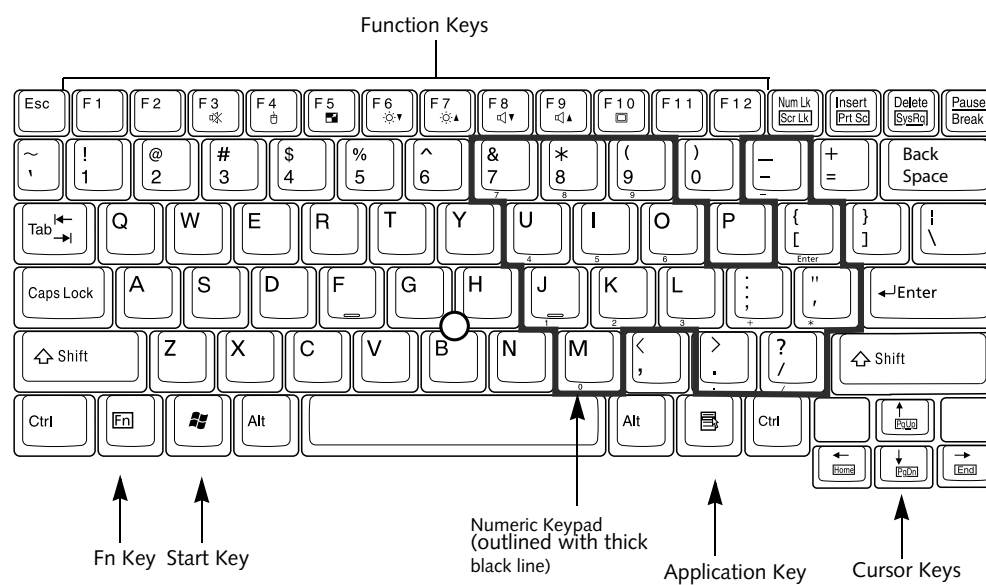


Figure 2-16. Keyboard

Keyboard

USING THE KEYBOARD

Your LifeBook P Series notebook has an integral 82-key keyboard. The keys perform all the standard functions of a 101-key keyboard, including the Windows keys and other special function keys. This section describes the following keys. (Figure 2-16)

- **Numeric keypad:** Your notebook allows certain keys to serve dual purposes, both as standard characters and as numeric and mathematical keys. The ability to toggle between the standard character and numerical keys is controlled through the [NumLk] key.
- **Cursor keys:** Your keyboard contains four arrow keys for moving the cursor or insertion point to the right, left, up, or down within windows, applications and documents.
- **Function keys:** The keys labeled [F1] through [F12], are used in conjunction with the [Fn] key to produce special actions that vary depending on what program is running.
- **Windows keys:** These keys work with your Windows operating system and function the same as the onscreen Start menu button, or the right button on your pointing device.

NUMERIC KEYPAD

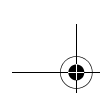
Certain keys on the keyboard perform dual functions as both standard character keys and numeric keypad keys. NumLk can be activated by pressing the [NumLk] key. Turning off the NumLk feature is done the same way. Once this feature is activated you can enter numerals 0 through 9, perform addition (+), subtraction (-), multiplication (*), or division (/), and enter decimal points (.) using the keys designated as ten-key function keys. The keys in the numeric keypad are marked on the front edge of the key to indicate their secondary functions. (Figure 2-16)

WINDOWS KEYS

Your LifeBook P Series notebook has two Windows keys: a Start key and an Application key. The Start key displays the Start menu. This button functions the same as your onscreen Start menu button. The Application key functions the same as your right mouse button and displays shortcut menus for the selected item. (Please refer to your Windows documentation for additional information regarding the Windows keys.) (Figure 2-16)

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 programs such as Windows Explorer, it moves the "focus" (selects the next item up, down, left, or right). (Figure 2-16)



FUNCTION KEYS

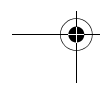
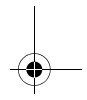
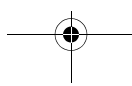
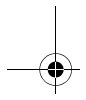
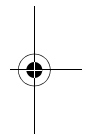
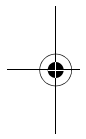
Your notebook has 12 function keys, F1 through F12. The functions assigned to these keys differ for each application. You should refer to your software documentation to find out how these keys are used.

(Figure 2-16)

[Fn] Key

The [Fn] key provides extended functions for the notebook and is always used in conjunction with another key.

- [Fn+F3]: Pressing [F3] while holding [Fn] will toggle the Audio Mute on and off.
- [Fn+F4]: Pressing [F4] while holding [Fn] will toggle the built-in pointing device on and off. Note that the [Fn+F4] combination only works if Manual Setting is selected in the BIOS. (See “Entering the BIOS Setup Utility” on page 30)
- [Fn +F5]: Pressing [F5] while holding [Fn] allows you to toggle between video compensation and no compensation. (Video compensation controls spacing on the display. When it is enabled, displays with less than 1024 x 768 or 800 x 600 pixel resolution will still cover the entire screen.)
- [Fn+F6]: Pressing [F6] repeatedly while holding [Fn] will lower the brightness of your display. Note that adjusting the brightness using the keyboard changes the system setting.
- [Fn+F7]: Pressing [F7] repeatedly while holding [Fn] will increase the brightness of the display.
- [Fn+F8]: Pressing [F8] repeatedly while holding [Fn] will decrease the volume of your notebook.
- [Fn+F9]: Pressing [F9] repeatedly while holding [Fn] will increase the volume of your notebook.
- [Fn+F10]: Pressing [F10] while holding [Fn] 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, both built-in display panel, and external monitor or external monitor only.



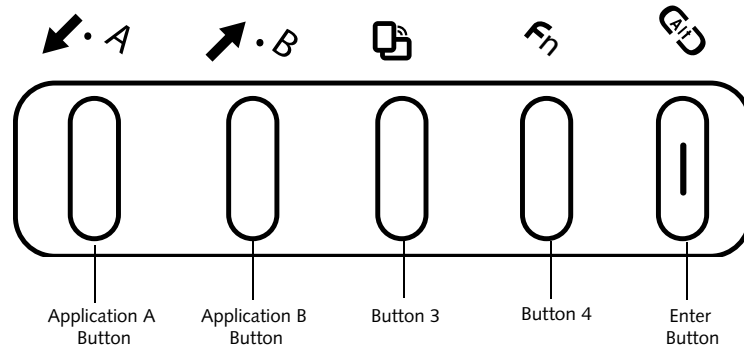


Figure 2-17. LifeBook P Series notebook application buttons

LifeBook Application Panel

A unique feature of your LifeBook P Series notebook is the application panel buttons. These buttons allow you to launch specific applications with the touch of a button.

The five application buttons are located on the bottom left-hand side of the display when it is configured to be used as a notebook. (Figure 2-17)

All five of the buttons have primary functions. Four of the buttons have secondary functions when used as application buttons. The secondary functions are activated by pressing the Function (Fn) button while pressing the application button. See Table 2-2 for specific functions. The secondary functions of the Application A and B buttons can be changed to launch any application. See “Changing Button Functions” on page 21.

Button Icon	Primary Function	Secondary Function (Fn + Button)
↓	Page Down	User-defined Application A (Default = Calculator)
↑	Page Up	User-Defined Application B (Default = WordPad)
⏪	Screen Rotation	VGA-Out
Fn	Secondary Function Selection	Fujitsu Menu Utility
Alt/D	Ctrl+Alt+Del Button	None

Table 2-2. Application Button Functions

Page Down / Application A Button

When you press the **Page Down** button when the system is running, each press of the button will scroll the screen down one frame. This allows you to navigate quickly through large documents.

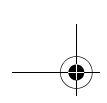
When you press the **Fn** button while you press then release the **Page Down/Application A** button, you will automatically start whichever program is assigned to the button. The default application for this button is Calculator.

See “Changing Button Functions” on page 21 to select a different application for this button.

Page Up / Application B Button

When you press the **Page Up** button when the system is running, each press of the button will scroll the screen up one frame. This allows you to navigate quickly through large documents.

When you press the **Fn** button while you press then release the **Page Up/Application A** button, you will



automatically start whichever program is assigned to the button. The default application for this button is WordPad.

See “Changing Button Functions” on page 21. to select a different application for this button.

Screen Rotation / VGA-Out Button

The screen rotation feature would normally be used only when the system is configured as a tablet. When you would like to use the tablet as an eBook, for example, you would use the portrait orientation; when accessing spreadsheets or using the system as a notebook, you would more typically use landscape orientation.

When the system is changed to tablet configuration, the orientation automatically changes to portrait mode by default.



The screen orientation default can be changed by going to the Control Panel and double-clicking on the Fujitsu Display Control icon and selecting the desired defaults from the Display Orientation section. After changing the defaults, click [OK].

When you press the **Screen Rotation / VGA-Out** button, the system screen orientation changes from portrait (vertical) to landscape (horizontal) or from landscape to portrait.

Function / Fujitsu Menu Utility Button

The **Function** button works in conjunction with the other application buttons to provide additional functionality for the buttons. Refer to specific details above.

Pressing the **Fn** button twice in succession causes the Fujitsu Menu Utility to appear on your screen, allowing you to modify certain system settings.

Ctl+Alt+Del Button

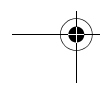
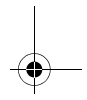
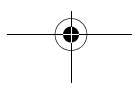
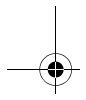
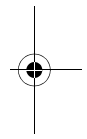
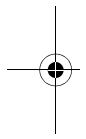
Pressing and holding the **Ctl+Alt+Del** button for up to 750 milliseconds launches the Logon screen or the Windows Task Manager (if the system hasn't yet been configured).

CHANGING BUTTON FUNCTIONS

The Application A and B buttons can be changed to launch a program or perform an action you select. By default, the Application A button launches the Calculator, and the Application B button launches WordPad.

To launch different applications or cause the Application A or B buttons to perform a specific action:

1. Double-click on the Tablet Button Settings icon in the Control Panel.
2. Select the button you would like to change from the list.
3. Click [Change] and open the drop down list in the Action: field.
4. Select the action you would like the button to perform. If you want to launch a program, click on Launch an Application then browse to the location of the program.
5. Click [OK], then click [OK] again. The buttons will now perform the actions you have assigned to them.



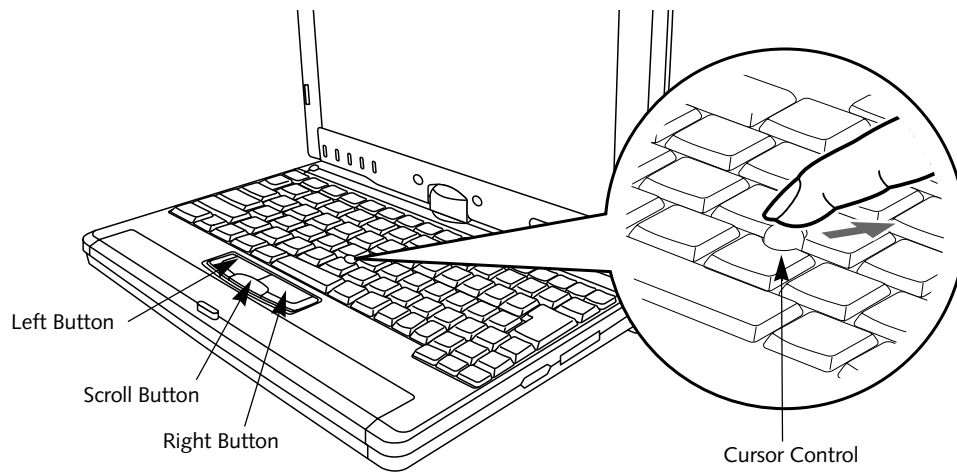


Figure 2-18. Touchpad pointing device

Quick Point Pointing Device/Touch Screen

The Quick Point is built into your LifeBook notebook. It is used to control the movement of the cursor to select items on your display panel. The Quick Point is composed of a cursor control at the center of the keyboard and three buttons on the palm rest of your notebook. The cursor control works the same way a mouse ball does, and moves the cursor around the display. It only requires light pressure with the tip of your finger, and the more pressure you use, the faster the cursor will move. The left button functions the same as a left mouse button while the right button has the same function as a right mouse button. When used with the cursor control, the middle button allows you to scroll up and down a screen. The actual functionality of the buttons may vary depending on the application that is being used. (Figure 2-19)

CLICKING

Clicking means pushing and releasing a button. To left-click, move the cursor to the item you wish to select, press the left button once, and then immediately release it. To right-click, move the cursor to the item you wish to select, press the bottom button once, and then immediately release it. (Figure 2-19)

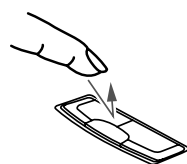


Figure 2-19 Clicking

DOUBLE-CLICKING

Double-clicking means pushing and releasing the left button twice in rapid succession. This procedure does not function with the right button. To double-click, move the cursor to the item you wish to select, press and release the left button twice. (Figure 2-20)

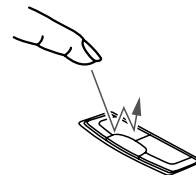


Figure 2-20 Double-clicking



- If the interval between clicks is too long, the double-click will not be executed.
- Parameters for the Quick Point can be adjusted from the Mouse dialog box located in the Windows Control Panel.

DRAGGING

Dragging means pressing and holding the left button, while moving the cursor. To drag, move the cursor to the item you wish to move. Press and hold the left button while moving the item to its new location and then release it. (Figure 2-21)

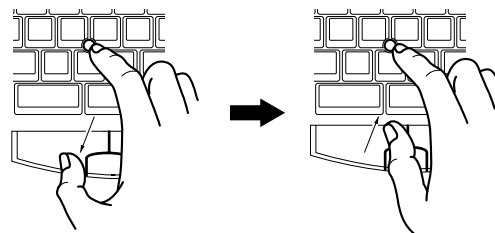


Figure 2-21 Dragging





QUICK POINT CONTROL ADJUSTMENT

The Windows Control Panel allows you to customize your Quick Point with selections made from within the Mouse Properties dialog box. There are three aspects of Quick Point operation, which you can adjust:

- **Buttons:** This tab lets you set up the buttons for right or left handed operation, in addition to setting up the time interval allowed between clicks in double-clicking.
- **Pointers:** This tab lets you set up the scheme for the cursor depending on its functionality.
- **Pointer Options:** This tab lets you set up a relation between the speed of your finger motion and the speed of the cursor. It also allows you to enable a Pointer Trail for the cursor arrow.

TOUCH SCREEN

The integrated Touch Screen allows you to use either the included stylus or your fingertip, as a pointing device.



Do not use excessive force when tapping or writing on the screen with the stylus or your finger. Use of excessive force could result in damage to the LCD and/or Touch Screen.

You can use the stylus to click, double-click, 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. (Figure 2-22)

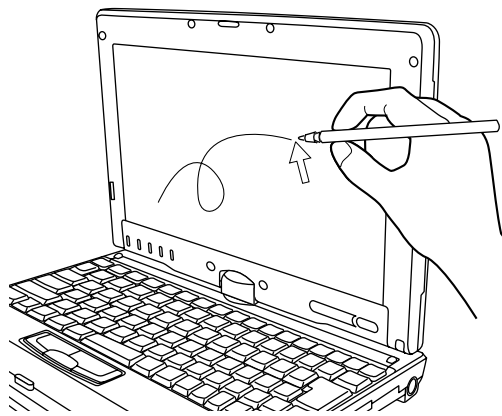


Figure 2-22 Using the Stylus with the Touch Screen



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



To purchase additional or replacement styluses, visit Fujitsu's accessories web site at: www.shopfujitsu.com.

Clicking

To left-click, touch the object you wish to select and then lift the stylus tip immediately. You also have the option to perform the left-click operation by tapping lightly with your finger on the Touch Screen once. (Figure 2-23)

Right-Clicking

To right-click, go to Start -> Control Panel -> Touch Panel. From the Right Button Simulation tab you can specify a right button tool by using the selected button prior to the desired right mouse click.

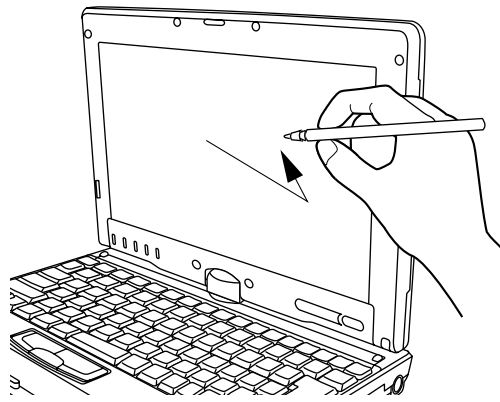


Figure 2-23 Clicking the Touch Screen

Double-Clicking

To double-click, touch the item twice, and then immediately remove the stylus tip. You also have the option to perform the double-click operation by tapping lightly with your finger on the Touch Screen twice. (Figure 2-24)

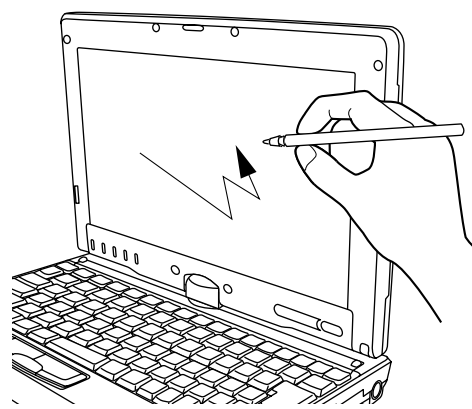
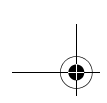


Figure 2-24 Double-clicking the Touch Screen



Dragging

Dragging means moving an item with the stylus by touching the screen, moving and then lifting the stylus. To drag, touch the Touch Screen with your stylus on the item you wish to move. While continuing to touch the screen with the stylus, drag the item to its new location by moving the stylus across the screen, and then lifting the stylus to release it. Dragging can also be done using your fingertip. (Figure 2-25)

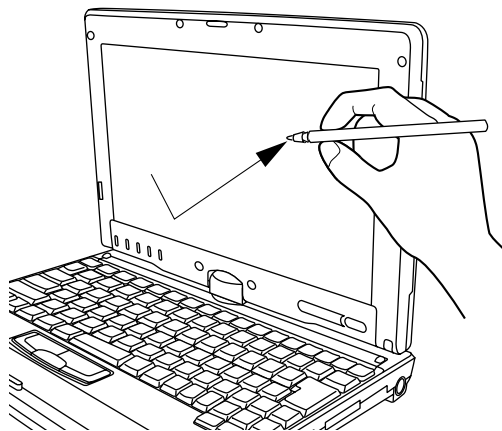


Figure 2-25 Dragging on the Touch Screen

Calibrating the Touch Screen

In order to ensure 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 and/or orientation.

To run the calibration utility:

1. Go to Start -> Control Panel -> Touch Panel and select the Calibration tab.
2. Press the [Calibrate Now] button.
3. Adjust the display of your notebook to a comfortable angle and find the red (+) symbol in the upper-left corner of the display.



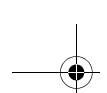
Do not use excessive force when tapping on the screen during calibration. Use of excessive force could result in damage to the LCD and/or touch panel.



When using the stylus to calibrate the screen, be sure to avoid touching the screen with your fingers; doing so could result in faulty calibration.

4. Using the stylus, firmly touch the screen directly on the (+) symbol. Lift the stylus from the screen and the target will move to a different location on the screen.
5. Repeat step 4 until you have selected a total of nine symbols. This is the minimum number of points necessary to calibrate your touch screen.
6. Once you have selected the nine symbols, press the [Update] button.
7. Touch the stylus to various points on the screen to verify that the screen is correctly calibrated. If you are not satisfied with the screen's calibration, press the [Calibrate Now] button to begin again.





Volume Control

Your Fujitsu LifeBook notebook has multiple volume controls which interact with each other.



Any software that contains audio files will also contain a volume control of its own. If you install an external audio device that has an independent volume control, the hardware volume control and the software volume control will interact with each other. It should be noted that if you set your software volume to Off, you will override the external volume control setting.

CONTROLLING THE VOLUME

The volume can be controlled in several different ways:

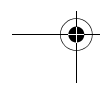
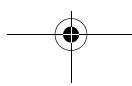
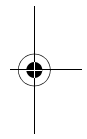
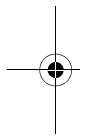
- Volume can be set from within the Volume Control on the Taskbar.
- Volume can be controlled with the [F8] and [F9] functions keys. Pressing [F8] repeatedly while holding [Fn] will decrease the volume of your notebook. Pressing [F9] repeatedly while holding [Fn] will increase the volume of your notebook.

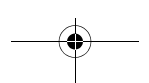
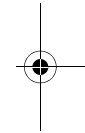
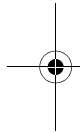
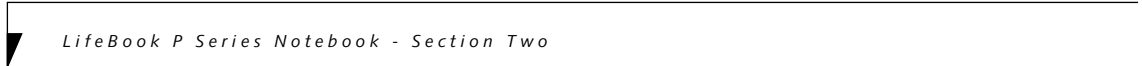
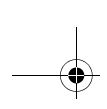


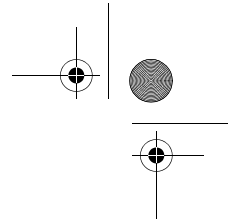
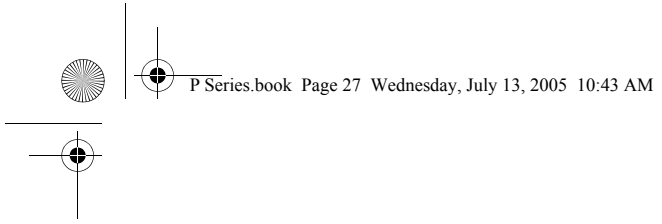
There are twenty-six levels through which the function keys cycle.

- Volume can be controlled by many volume controls that are set within individual applications.
- Certain external audio devices you might connect to your system may have hardware volume controls.
- Each source discussed above puts an upper limit on the volume level that must then be followed by the other sources.

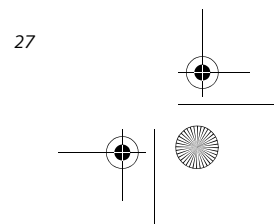
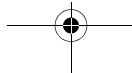
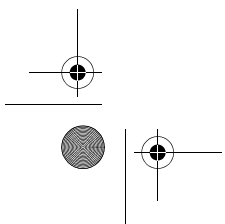
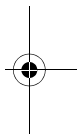
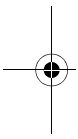
We recommend that you experiment with the various volume controls to discover the optimal sound level.

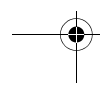
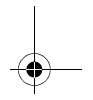
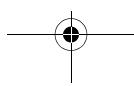
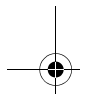
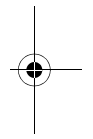
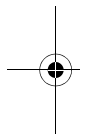
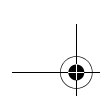






3 Using Your LifeBook







Getting Started

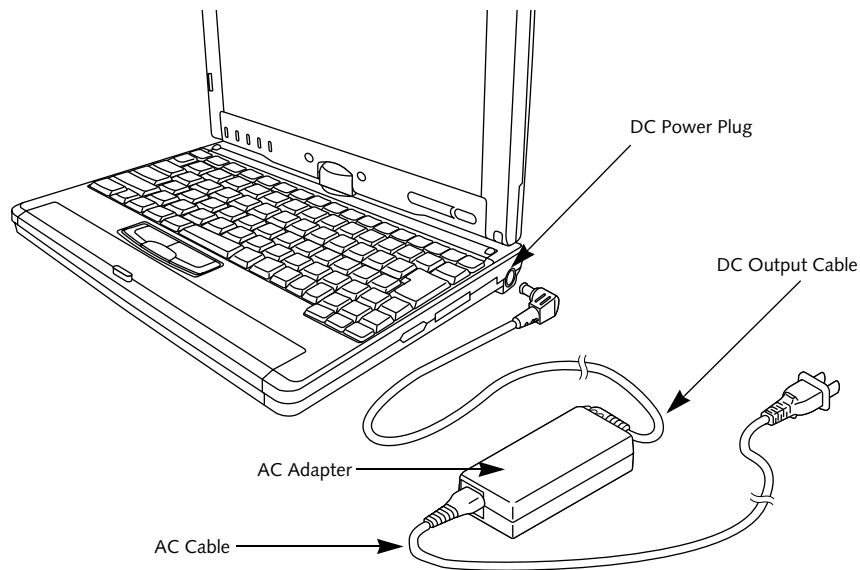


Figure 3-1. Connecting the AC Adapter

Power Sources

Your LifeBook P Series notebook has three possible power sources: a primary Lithium ion battery, an AC adapter or an optional Auto/Airline adapter.

CONNECTING THE POWER ADAPTERS

The AC adapter or optional Auto/Airline adapter provides power for operating your notebook and charging the battery.

Connecting the AC Adapter

1. Plug the DC output cable into the DC power jack of your notebook.
2. Plug the AC adapter into an AC electrical outlet.
(Figure 3-1)

Connecting the Optional Auto/Airline Adapter

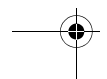
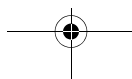
1. Plug the DC output cable into the DC power jack on your notebook.
 2. Plug the Auto/Airline adapter into the cigarette lighter of an automobile with the ignition key in the On or Accessories position.
- OR
3. Plug the Auto/Airline adapter into the DC power jack on an airplane seat.

Switching from AC Adapter Power or the Auto/Airline Adapter to Battery Power

1. Be sure that you have a charged battery installed.
2. Remove the AC adapter or the Auto/Airline adapter.



The Lithium ion battery is not charged upon purchase. Initially, you will need to connect either the AC adapter or the Auto/Airline adapter to use your notebook.



Starting Your LifeBook

POWER ON

The Suspend/Resume button is used to turn on your LifeBook P Series notebook from its off state. Once you have connected your AC adapter or charged the internal Lithium ion battery, you can power on your notebook. (See figure 2-4 on page 9 for location).



When you turn on your notebook, be sure you have a power source. This means that a battery is installed and charged, or that a power adapter is connected and has power.

Press the Suspend/Resume button to start your system. When you are done working you can either leave your notebook in Standby mode, See "Standby Mode" on page 32., or you can turn it off. See "Power Off" on page 34..



When the system display is closed, the Suspend/Resume button is disabled. This feature prevents the system from being accidentally powered up when not in use.

When you Power On your notebook, it will perform a Power On Self Test (POST) to check the internal parts and configuration for correct functionality. If a fault is found, your notebook will emit an audio warning and/or an error message will be displayed. See "Power On Self Test Messages" on page 58. Depending on the nature of the problem, you may be able to continue by starting the operating system or by entering the BIOS setup utility and revising the settings.

After satisfactory completion of the Power On Self Test (POST), your notebook will load your operating system.



Never turn off your notebook during the Power On Self Test (POST) or it will cause an error message to be displayed when you turn your notebook on the next time. See "Power On Self Test Messages" on page 58.

BOOT SEQUENCE

The procedure for starting-up your notebook is termed the Bootup sequence and involves your notebook's BIOS. When your notebook is first turned on, the main system memory is empty, and it needs to find instructions to start up your notebook. This information is in the BIOS program. Each time you power up or restart your notebook, it goes through a boot sequence which

displays a Fujitsu logo until your operating system is loaded. During booting, your notebook is performing a standard boot sequence including a Power On Self Test (POST). When the boot sequence is completed without a failure and without a request for the BIOS Setup Utility, the system displays the operating system's opening screen.

The boot sequence is executed when:

- You turn on the power to your notebook.
- You restart your notebook from the Windows Shut Down dialog box.
- The software initiates a system restart (e.g., when you install a new application).

BIOS SETUP UTILITY

The BIOS Setup Utility is a program that sets up the operating environment for your notebook. Your BIOS is set at the factory for normal operating conditions, therefore there is no need to set or change the BIOS' environment to operate your notebook.

The BIOS Setup Utility configures:

- Device control feature parameters, such as changing I/O addresses and boot devices.
- System Data Security feature parameters, such as passwords.

Entering the BIOS Setup Utility

To enter the BIOS Setup Utility do the following:

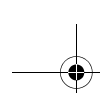
1. Turn on or restart your notebook.
2. Press the [F2] key once the Fujitsu logo appears on the screen. This will open the main menu of the BIOS Setup Utility with the current settings displayed.
3. Press the [RIGHT ARROW] or [LEFT ARROW] key to scroll through the other setup menus to review or alter the current settings.

BIOS Guide

A guide to your notebook's BIOS is available online. Please visit our service and support Web site at <http://www.computers.us.fujitsu.com/support>. Once there, select LifeBook BIOS Guides from the pull-down menu for your notebook series. If you are unsure of your notebook's BIOS number, refer to your packing slip.



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



Getting Started

BOOTING THE SYSTEM

We strongly recommend that you not attach any external devices until you have gone through the initial power on sequence.

When you turn on your LifeBook notebook for the first time, it will display a Fujitsu logo on the screen. If you do nothing the system will load the operating system, and then the Windows Welcome will begin.

Registering Windows with Microsoft

In order to ensure that you receive the most benefits from the Windows operating system, it should be registered the first time you use it.

After you receive the Windows Welcome screen, you will be prompted to enter registration information in the following order.

First of all, you will need to read and accept the End User License Agreements (EULAs). After accepting the EULAs, you will be asked if you want to enable the Automatic Updates feature. Acceptance of this feature is recommended because it allows your system to be updated automatically whenever an important change becomes available for your notebook.



- If you reject the terms of the license agreement you will be asked to review the license agreement for information on returning Windows or to shut down your LifeBook notebook.
- You cannot use your LifeBook notebook until you have accepted the License Agreement. If you stop the process your notebook will return to the beginning of the Windows Welcome Process, even if you shut your notebook down and start it up again.

Several additional windows will appear, prompting you to enter a name and description for your computer, an Administrator password, and a domain name. Read the instructions on the screens carefully and fill in the information as directed.

You will then be automatically connected to the Internet, if you have an appropriate connection available. If an automatic connection is not possible, you will be asked about how you dial out from where you will be using your LifeBook notebook. If you are not connected to a phone line and plan to register at a later time, you may click the **Skip** button.

Once you are connected to the Internet, you will be asked if you wish to continue with the registration. If you select **Yes** you will then enter your name and address, and email address if desired. Click **Next** to complete registration.

REGISTERING YOUR LIFEBOOK NOTEBOOK

How do I register my LifeBook notebook?

You can register your LifeBook by going to our Web site:

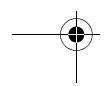
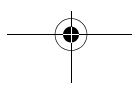
<http://www.computers.us.fujitsu.com/support>

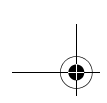
You will need to be set up with an Internet Service Provider (ISP) to register online.



INSTALLING CLICK ME!

The first time you boot up your system, you will see an icon called Click Me! in the Start menu. When you click the Click Me! icon, your system will automatically build the icon tray in the bottom right of the screen. These icons provide links to utilities that you will frequently access.





Power Management

Your LifeBook P Series notebook has many options and features for conserving battery power. Some of these features are automatic and need no user intervention, such as those for the internal modem. However, others depend on the parameters you set to best suit your operating conditions, such as those for the display brightness. Internal power management for your notebook may be controlled from settings made in your operating system, pre-bundled power management application, or from settings made in BIOS setup utility.

Besides the options available for conserving battery power, there are also some things that you can do to prevent your notebook battery from running down as quickly. For example, you can create an appropriate power saving profile, put your notebook into Standby mode when it is not performing an operation, and you can limit the use of high power devices. As with all mobile, battery powered computers, there is a trade-off between performance and power savings.

Power Mode	System Activity	Events causing system to enter mode state
Fully On Mode	System is running. CPU, system bus, and all other interfaces operate at full speed.	<ul style="list-style-type: none"> ▪ From Standby mode: System operation resumed (Suspend/Resume button pressed, resume on modem ring, resume on time). ▪ From Hibernation mode: Suspend/Resume button pressed. ▪ From Off mode: Suspend/Resume button pressed.
Standby Mode (Suspend-to-RAM)	Resume system logic remains powered and RAM remains powered to maintain active data. All other devices are turned off.	<ul style="list-style-type: none"> ▪ Standby timeout occurs. ▪ Suspend request issued by software or by pressing the Suspend/Resume button. ▪ Low battery.
Hibernation Mode (Suspend-to-Disk)	Windows saves desktop state (including open files and documents) to hard disk. CPU stops. All other devices are turned off.	<ul style="list-style-type: none"> ▪ Suspend timeout occurs. ▪ Clicking Start -> Shut Down -> Hibernate (It may be necessary to Enable Hibernate Support from Windows Power Options.) ▪ Low battery condition
Power Off	System is fully powered off except for logic components required for Suspend/Resume button and real-time clock operation.	<ul style="list-style-type: none"> ▪ System shutdown. ▪ Low battery condition

Table 3-1. System Power States

SUSPEND/RESUME BUTTON

When your notebook is active, the Suspend/Resume button can be used to manually put your notebook into Standby mode. Push the Suspend/Resume button when your notebook is active, but not actively accessing anything, and immediately release the button. You will hear two short beeps and your system will enter Standby mode. (See figure 2-6 on page 11 for location).

If your notebook is suspended, pushing the Suspend/Resume button will return your notebook to active operation. You can tell whether or not your system is in Standby mode by looking at the Power indicator. See “” on page 14. If the indicator is visible and not flashing, your notebook is fully operational. If the indicator is both visible and flashing, your notebook is in Standby mode. If the indicator is not visible at all, the power is off or your notebook is in Hibernate mode (See *Hibernate Mode*)

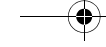
STANDBY MODE

Standby mode in Windows saves the contents of your notebook's system memory during periods of inactivity by maintaining power to critical parts. This mode will turn off the CPU, the display, the hard drive, and all of the other internal components except those necessary to maintain system memory and allow for restarting. Your notebook can be put in Standby mode by:

- Pressing the Suspend/Resume button when your system is turned on.
- Selecting Standby from the Windows Shut Down menu.
- Timing out from lack of activity.
- Allowing the battery to reach the Dead Battery Warning condition.
- Closing the system cover.

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





Getting Started

from Standby mode, your notebook will return to the point where it left off. To resume operation, 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.



If you are running your notebook on battery power, be aware that the battery continues to discharge while your notebook is in Standby mode, though not as fast as when fully operational.

HIBERNATE MODE

The Hibernate mode saves the contents of your notebook's system memory to the hard drive as a part of the Suspend/Resume mode. Your notebook is pre-configured to perform this function. The Hibernate mode can also be configured through the system BIOS to run in other ways depending on what you need to accomplish. See "BIOS Setup Utility" on page 30.

- Standby or Hibernate modes should not be used with certain PC Cards. Check your PC Card documentation for more information.
- Disabling the Suspend/Resume button prevents it from being used to put your notebook in Standby or Hibernate mode. The resume function of the button cannot be disabled.
- If your notebook is actively accessing information when you enter Standby or Hibernate mode, changes to open files are not lost. The files are left open and memory is kept active during Standby mode or the memory is transferred to the hard drive during Hibernate mode.
- When PC Cards or external devices are in use, Save-to-Disk mode cannot return to the exact state prior to suspension, because all peripheral devices will be re-initialized when the system restarts.
- The main advantage of using Hibernate mode is that power is not required to maintain your data. This is very important if you will be leaving your notebook in a suspended state for a prolonged period of time. The drawback of using Hibernate mode is that it lengthens the power down and power up sequences and resets peripheral devices.



Using Hibernate Mode

Hibernate default setting is enabled for Windows XP.

To enable or disable the Hibernation feature follow these easy steps:

1. From the **Start** menu, select **Control Panel -> Power Options**.
2. Select the **Hibernate** tab and then select the box to enable or disable this feature.

To use Hibernate mode with your system:

1. From the **Start** menu, select **Control Panel -> Power Options**.
2. Select the **Power Schemes** tab and in the **System hibernates boxes**, select the amount of time you want to elapse until the system goes into hibernation (when plugged in and when running on battery power).

DISPLAY TIMEOUT

The Video Timeout is one of the power management parameters. This feature 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 and can be enabled and disabled in Windows Power Management.

HARD DISK TIMEOUT

The Hard Disk Timeout is another one of the power management parameters. This feature saves power by turning off the hard drive if there is no hard drive activity for the user selected timeout period. Any attempt to access the hard drive will cause it to restart automatically. This feature is independent of the Suspend/Resume button and can be enabled and disabled in Windows.

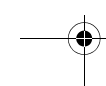
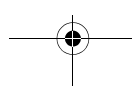
WINDOWS POWER MANAGEMENT

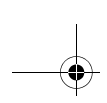
The Power Options icon located in the Windows Control Panel allows you to configure some of the power management settings. For example, you can use the Power Options to set the timeout values for turning off the display and hard disks whether you are running the notebook on battery power or one of the adapters.

RESTARTING THE SYSTEM

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

1. Click the **Start** button, and then click **Turn Off Computer**.
2. Select the **Restart** button from within the Turn Off Computer window.





Turning off your notebook without exiting Windows or turning on your notebook within 10 seconds of the notebook being shut off may cause an error when you start the next time.

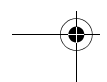
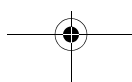
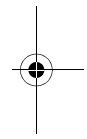
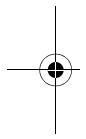
POWER OFF

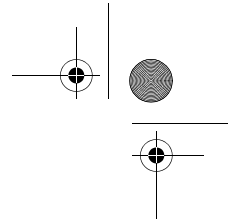
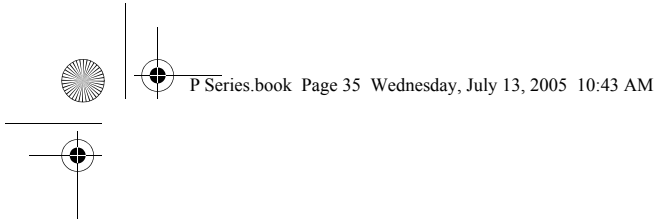
Before turning off the power by choosing Turn Off Computer from the Windows Start menu, check that the Hard Drive access indicator is off. (See Figure 2-9 on page 14) If you turn off the power while accessing a disk there is a risk of data loss. To ensure that your notebook shuts down without error, use the Windows shut down procedure.

Using the correct procedure to shut down from Windows allows your notebook to complete its operations and turn off power in the proper sequence to avoid errors. The proper sequence is:

1. Click the **Start** button, and then click **Turn Off Computer**.
2. Select the **Turn Off** option from within the window.

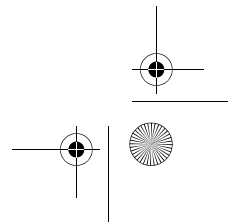
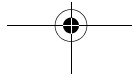
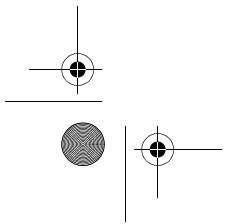
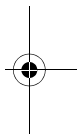
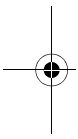
If you are going to store your notebook for a month or more, see the Care and Maintenance section.

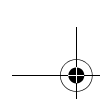




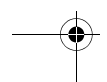
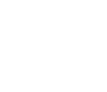
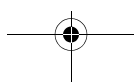
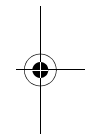
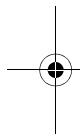
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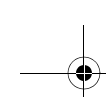
User-Installable Features





LifeBook P Series Notebook - Section Four





User-Installable Features

Lithium ion Battery

Your LifeBook P Series notebook has a Lithium ion battery that provides power for operating your notebook when no external power source is available. The battery is durable and long lasting, but should not be exposed to extreme temperatures, high voltages, chemicals or other hazards.

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

- When used at temperatures lower than 41° F (5° C) or higher than 95° F (35° C). Extreme 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. See “” on page 14.
- When using a high current device such as a modem, CD-ROM drive, or hard drive, using the AC adapter will conserve your battery life.

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



- 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.



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. 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.

The Lithium ion battery is recharged internally using the AC adapter or Auto/Airline adapter. To recharge the battery make sure the battery that needs to be charged is installed in your notebook and connect the AC or Auto/Airline adapter.



Make sure that the Battery Charging indicator and the Battery Level indicator icon on the Status Indicator Panel light.

There is no memory effect on the Lithium ion battery, therefore you do not need to discharge the battery completely before recharging. The charge times will be longer if your notebook is in use while the battery is charging. If you want to charge the battery more quickly, put your notebook into Standby mode, or turn it off while the adapter is charging the battery. See “Power Management” on page 32.



Using heavy current devices such as a modem or frequent CD-ROM and PCMCIA powered external device accesses may prevent charging completely.

Low Battery State

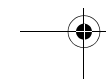
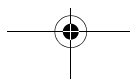
When the battery is running low, the Battery Level indicator will glow red. If you do not respond to the low battery alarm, the batteries will continue to discharge until they are too low to operate. Your notebook will then go into Standby mode to try and protect your data for as long as possible. There is no guarantee that your data will not be lost once the notebook reaches this point.



- Once the low battery indicator appears you must save all your data and put your notebook into Standby mode until you can provide a new power source. You should provide a charged battery or AC or Auto/Airline Adapter as soon as possible.
- When you are in Standby mode there must always be at least one power source active. If you remove all power sources while your notebook is in Standby mode, any data that has not been saved to the hard drive will be lost.

RECHARGING THE BATTERY

If you want to know the condition of the Lithium ion battery, check the Battery Level indicator located on the Status Indicator panel. The indicator changes as the battery level changes.





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 adapter, or a charged battery. Once you have provided power, you will need to press the Suspend/Resume button to resume operation. In the Dead Battery Suspend mode, your data can be maintained for some time, but if a power source is not provided promptly, the Power indicator will stop flashing and go out, meaning that you 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.

REPLACING THE BATTERY

Your LifeBook P Series notebook comes with one battery pack; you might want to consider purchasing a spare. By keeping a spare battery fully charged, you can immediately swap with one that is not charged.

There are two ways to swap batteries: cold-swapping and hot-swapping. Cold-swapping means swapping batteries when the system has been powered down; hot-swapping is performed when the system is powered by AC power.

Cold-swapping batteries

To cold-swap batteries in your battery compartment, follow these easy steps: (Figure 4-1)

1. Have a charged battery ready to install.
2. Shut down your notebook and disconnect the AC adapter.
3. Lift the display enough to pull the display latch from the slot.
4. Press the battery release latches to open the compartment.
5. Remove the battery from the compartment.
6. Slide the new battery into the compartment.
7. Close the compartment and the battery release latches will click into place.
8. Plug in the AC adapter and turn the power on.

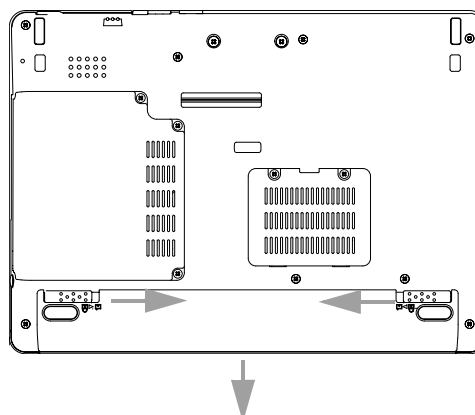


Figure 4-1. Removing the Battery

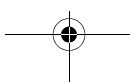
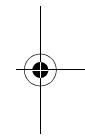
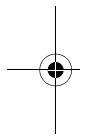
Hot-swapping Batteries

To hot-swap batteries in your battery compartment follow these easy steps: (Figure 4-1)

1. Close any open files and put your notebook into Standby mode.
2. Connect an AC adapter or Auto/Airline power adapter to provide power to the system.
3. Lift the display enough to pull the display latch from the slot.
4. Press the battery release latches inward to open the compartment.
5. Remove the battery from the compartment.
6. Slide the new battery into the compartment.
7. Close the compartment and the battery release latches will click into place.
8. Press the Suspend/Resume button to return your notebook to normal operation.



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



Memory Upgrade Module

Your Fujitsu LifeBook P Series notebook comes with a minimum of 256 MB of high speed Double Data Rate Synchronous Dynamic RAM 2 (DDR2 SDRAM), 400 MHz factory installed. To increase your system's memory capacity, you may install a memory upgrade module. The memory upgrade must be a dual-in-line (DIMM) SDRAM module. To ensure 100% compatibility, purchase the SDRAM module only from the Fujitsu web store at www.shopfujitsu.com.



Do not remove any screws from the memory upgrade module compartment except those specifically shown in the directions for installing and removing the module.

INSTALLING MEMORY UPGRADE MODULES

1. Turn off power to your LifeBook notebook 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, and remove the screws of the memory upgrade module compartment. (Figure 4-2)
4. Remove the cover.

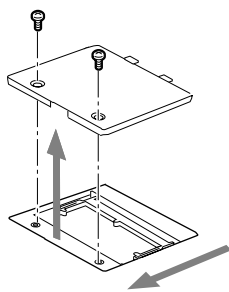


Figure 4-2. Opening the Memory Upgrade Compartment

5. Remove the memory upgrade module from the static guarded sleeve.
6. Align the memory upgrade module with the component side up. Align the connector edge of the memory upgrade module with the connector slot in the compartment. (Figure 4-3)

7. Insert the memory upgrade module at a 45° angle. Press the connector edge of the module firmly down and into the connector until it lodges under the retaining clip. You will hear a click when it is properly in place.

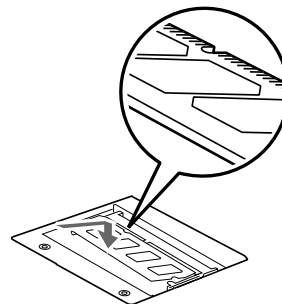


Figure 4-3. Installing a Memory Module

8. Replace the cover. (Figure 4-4)
9. Replace the screws.

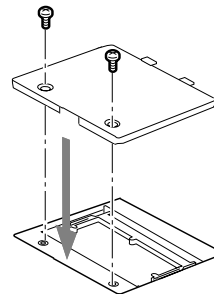


Figure 4-4. Replacing the Memory Compartment Cover



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

TO REMOVE A MEMORY UPGRADE MODULE

1. Perform steps 1 through 4 of Installing a Memory Upgrade Module.
2. Pull the clips sideways away from each side of the memory upgrade module at the same time.
3. While holding the clips out, remove the module from the slot by lifting it up and pulling towards the rear of your notebook.
4. Store the memory upgrade module in a static guarded sleeve.
5. Replace the cover. (Figure 4-4)
6. Replace the screws.



CHECKING THE MEMORY CAPACITY

Once you have changed the system memory capacity by either adding or removing a memory upgrade module, be sure to check that your notebook has recognized the change.



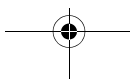
Your notebook uses Dynamic Video Memory Technology (DVMT), which allows the video driver to dynamically determine the amount of memory that is used. Your notebook can use a maximum of 128 MB of system memory for video functions.

You can check the memory capacity by clicking [Start] -> Control Panel, then double-clicking the System icon. Select the General tab and check the amount of memory under "Computer."

The amount of memory displayed should be approximately the total of all memory modules installed. There may be a discrepancy of several megabytes which are allocated for fixed video memory.



If the total memory displayed is incorrect, check that your memory upgrade module is properly installed. *(If the module is properly installed and the capacity is still not correctly recognized, see Troubleshooting on page 52.)*



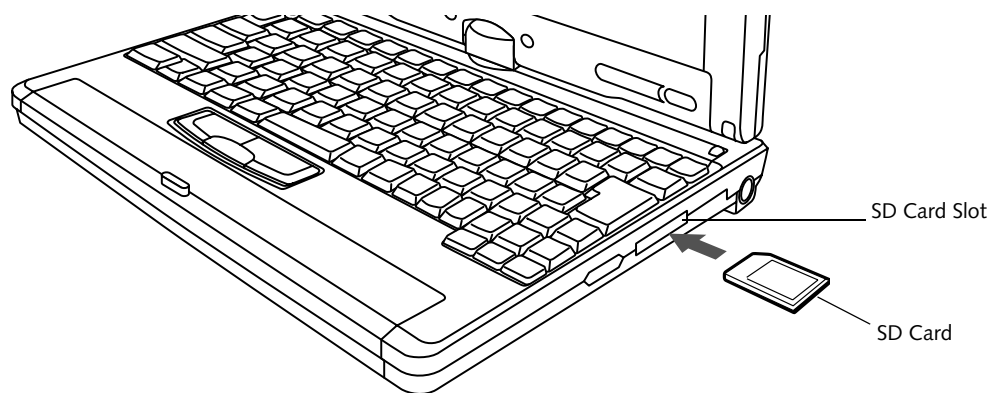
User-Installable Features

Figure 4-5. Inserting an SD Card

Secure Digital Media

Your LifeBook notebook supports Secure Digital (SD) cards, on which you can store and transfer data to and from a variety of digital devices. These cards use flash memory architecture, which means they don't need a power source to retain data.

Secure Digital (SD) Cards allow portable storage among a variety of devices, such as cell phones, GPS systems, digital cameras, and PDAs. SD Cards transfer data quickly, with low battery consumption. It uses flash memory architecture.

INSERTING SD CARDS

SD Cards are inserted in the SD Card slot (Figure 4-9). To insert an SD Card, follow these steps:



- inserting or removing an SD Card during your LifeBook notebook's shutdown or bootup process may damage the card and/or your LifeBook notebook.
- Do not insert a card into a slot if there is water or any other substance on the card as you may permanently damage the card, your LifeBook notebook, or both.

1. See your SD Card manual for instructions on the insertion of your card. Some cards may require that your notebook is off while inserting them.
2. Make sure there is no card currently in the slot. If there is, see Removing an SD Card.
3. Insert your card into the slot with the product label facing up.
4. Push the card firmly into the slot until it is seated in the connector.

REMOVING AN SD CARD

To remove an SD Card, first see your SD Card manual for instructions. Some cards may require your LifeBook notebook to be in Suspend Mode or Off while removing them. To remove the card from the slot, simply pull it out.

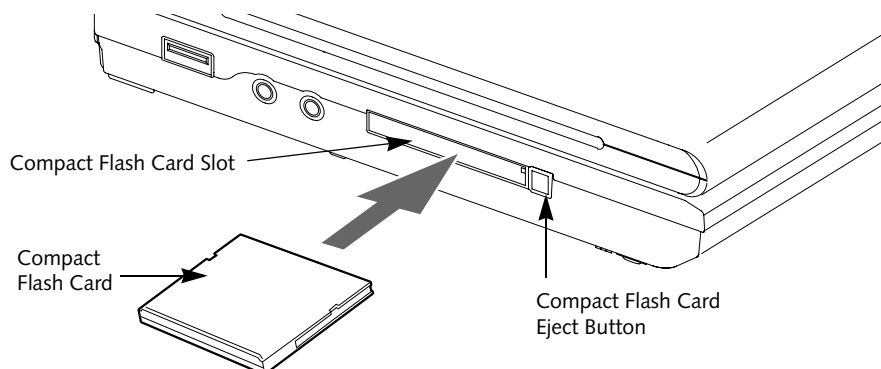


Figure 4-6. Compact Flash Card Slot

Compact Flash Cards

Your Fujitsu LifeBook notebook supports Compact Flash (CF) cards, which can perform a variety of functions.

Some available Compact Flash Cards:

- Memory cards
- Fax/data modem cards
- Local area network (LAN) cards

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

INSERTING COMPACT FLASH CARDS

Compact Flash Cards are inserted in the Compact Flash Card slot. To insert a Compact Flash Card, follow these steps: (Figure 4-2)

- Inserting or removing a Compact Flash Card during your LifeBook notebook's shutdown or bootup process may damage the card and/or your notebook.
- Do not insert a Compact Flash Card into a slot if there is water or any other substance on the card as you may permanently damage the card, your LifeBook notebook, or both.

1. See your Compact Flash Card manual for specific instructions on the insertion of your card. Some Compact Flash Cards may require your notebook to be Off while inserting them.
2. When you receive your LifeBook, there will be a protective plug inserted in the slot. Whenever you don't have a Compact Flash Card inserted, be sure to replace the plug to prevent system contamination. To remove the plug, press the Compact Flash Card eject button. (Figure 4-3)

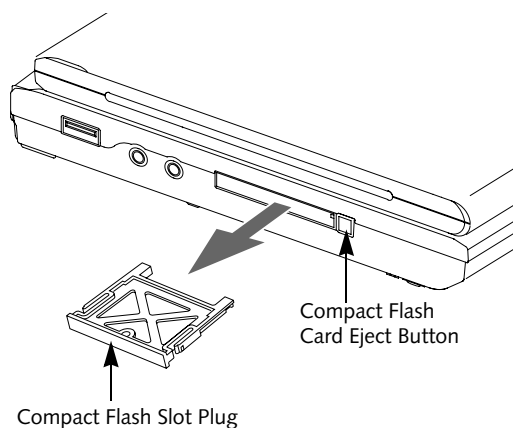
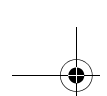


Figure 4-7. Removing Compact Flash Slot plug

3. When the Compact Flash Slot plug is ejected, remove it from the slot.
4. Insert your Compact Flash Card into the slot, with the product label facing up.
5. Push the card into the slot firmly until it is seated in the opening. You will hear a click and the Eject button will pop away from your notebook.



REMOVING COMPACT FLASH CARDS

To remove a Compact Flash Card, follow these easy steps:



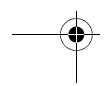
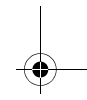
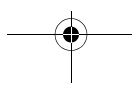
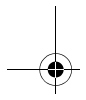
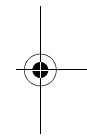
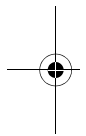
Windows has a shutdown procedure for Compact Flash Cards that must be followed before removing a card. (Please review your operating system manual for the correct procedure).

1. See your Compact Flash Card manual for specific instructions on removing your card. Some Compact Flash Cards may require your notebook to be in Suspend Mode or Off while removing them.



If the dialog box states that the device cannot be removed, you must save all of your open files, close any open applications and shut down your notebook.

2. Push the eject button in until it is flush with the notebook. This will push the Compact Flash Card slightly out of the slot allowing you to remove the card.



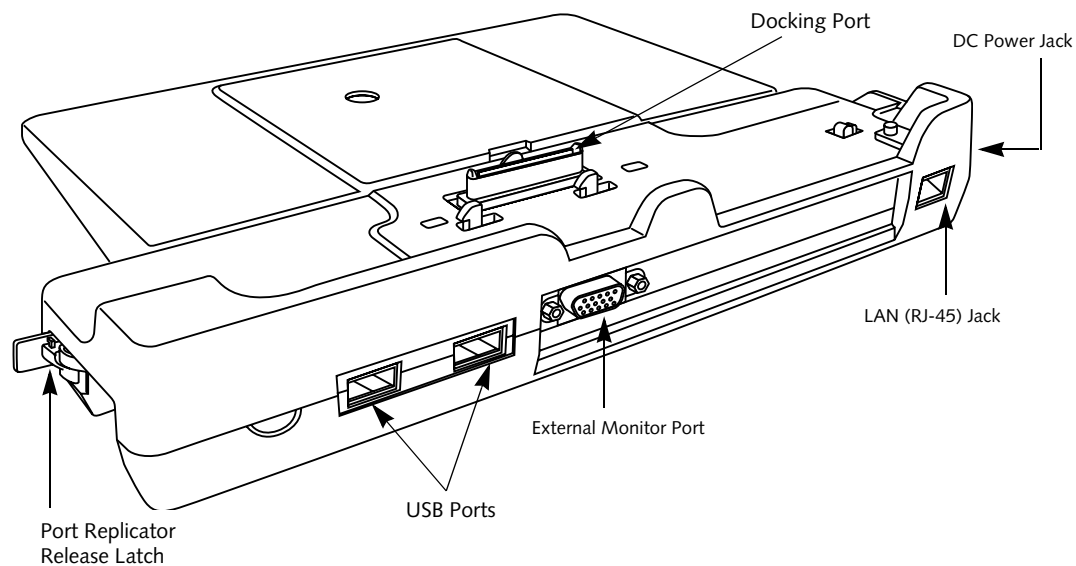
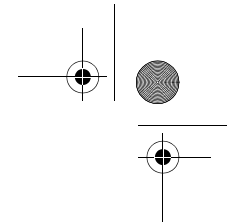


Figure 4-8. Port Replicator rear panel

Port Replicator

An optional Port Replicator is available from Fujitsu to support your LifeBook P Series notebook. The Port Replicator extends the functionality of your notebook by providing ports to connect USB devices, an external monitor, external speaker, or a LAN device. The Port Replicator connects to the bottom of your notebook. See "Device Ports" on page 46.

PORT REPLICATOR COMPONENTS

Following is a description of the Port Replicator components. (Figure 4-11)

DC Power Jack

The DC power jack allows you to plug in the AC adapter to power your notebook and charge the internal Lithium ion battery.

USB 2.0 Ports (Qty. 2)

Universal Serial Bus (USB) 2.0 ports allow you to connect USB devices. USB 2.0 ports are backward-compatible with USB 1.1 devices.

External Monitor Port

The external monitor port allows you to connect an external VGA or SVGA monitor. Note that if a Port Replicator is attached, you must use the external monitor port on the Port Replicator, not the one on your system.

LAN (RJ-45) Jack

The LAN jack allows you to connect a LAN to the Port Replicator. Note that when the system is attached to the Port Replicator, the LAN Jack on the Port Replicator should be used, not the one on the system.

Docking Port

The docking port connects the Port Replicator to your LifeBook notebook.

Port Replicator Release Latch

Pull the Port Replicator Release latch away from the Port Replicator to remove the Port Replicator from your notebook.

ATTACHING PORT REPLICATOR

To attach the Port Replicator, align the Port Replicator connector on the bottom of your notebook with the connector on the Port Replicator and push the corners down simultaneously. (Figure 4-12)

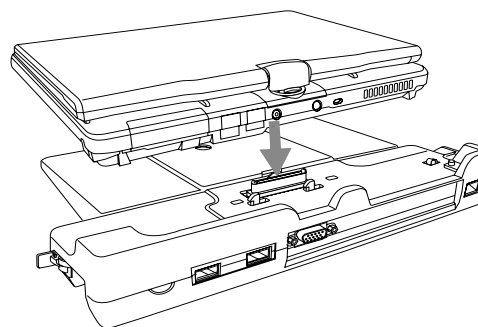
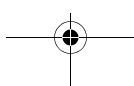


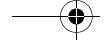
Figure 4-9. Attaching the Port Replicator

DETACHING PORT REPLICATOR

To detach the Port Replicator:

1. Pull the Port Replicator's release latch away from the Port Replicator to release it from your notebook. (Figure 4-13)





User-Installable Features

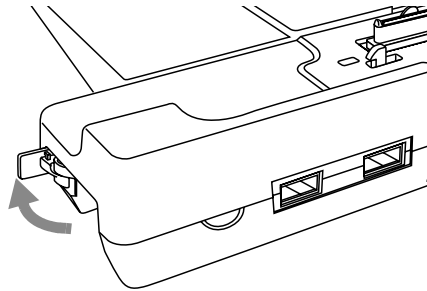


Figure 4-10. Unlatching the Port Replicator

2. Pull the notebook away from the Port Replicator to detach it from your notebook. (Figure 4-14)

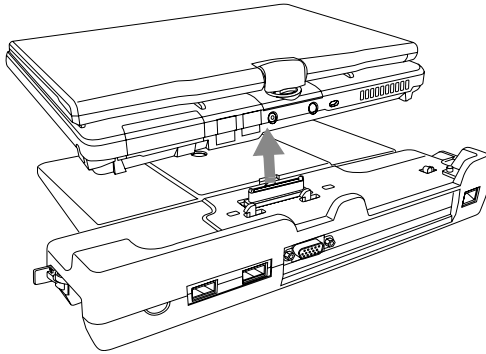
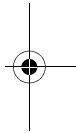
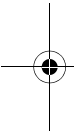


Figure 4-11. Removing the Port Replicator



Device Ports

Your LifeBook P Series notebook and the optional Port Replicator come equipped with multiple Device Ports to which you can connect an external device including: disk drives, keyboards, modems, printers, etc.

MODEM (RJ-11) JACK

The modem (RJ-11) jack is used for an internal modem. To connect the telephone cable follow these easy steps: (See figure 2-7 on page 12 for location)

1. Align the connector with the jack opening.
2. Push the connector into the jack until it is seated.
3. Plug the other end of the telephone cable into a telephone outlet.



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 LifeBook P Series 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.



- The internal modem is designed to the ITU V.90 standard. Its maximum speed of 53000 bps is the highest allowed by FCC, and its actual connection rate depends on the line conditions. The maximum speed is 33600 bps at upload.
- The internal modem on all LifeBook P Series notebook's from Fujitsu Computer Systems Corporation are certified for use in the United States and Canada.
- Depending upon the configuration of your system, your LifeBook notebook may have either a LAN jack or an IEEE 1394 jack.

INTERNAL LAN (RJ-45) JACK

The internal LAN (RJ-45) jack is used for an internal 10/100 BaseTx Ethernet connection. You will need to configure your notebook to work with your particular network. (Please refer to your network administrator for information on your network configuration.) To connect the LAN cable follow these easy steps: (See figure 2-7 on page 12 for location)



Note that the optional Port Replicator is designed to cover the LAN jack located on the system. This design ensures that the LAN jack on the Port Replicator is the only one used when the Port Replicator is installed.

1. Align the connector with the jack opening.
2. Push the connector into the jack until it is seated.
3. Plug the other end of the cable into a LAN outlet.

DOCKING PORT

The docking port is used for the connection of your notebook to an optional port replicator. In order to connect your notebook to one of these devices follow the instructions that came with your port replicator. (See figure 2-8 on page 13 for location)

UNIVERSAL SERIAL BUS PORTS

The two Universal Serial Bus 2.0 ports (USB) allow you to connect USB devices such as external floppy disk drives, external DVD drives, game pads, pointing devices, keyboards and/or speakers. USB 2.0 is downward-compatible with USB 1.1 devices, so older USB devices will work with these ports. USB 2.0 is a much faster design, running forty times faster than USB 1.1.

In order to connect a USB device, follow these easy steps: (See figure 2-7 on page 12 for location)

1. Align the connector with the port opening.
2. Push the connector into the port until it is seated.

MICROPHONE JACK

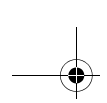
The microphone jack allows you to connect an external mono microphone. Your microphone must be equipped with a 1/8" (3.5 mm) mono mini-plug in order to fit into the microphone jack of your notebook. In order to connect a microphone follow these easy steps: (See figure 2-4 on page 9 for location)

1. Align the connector with the port opening.
2. Push the connector into the port until it is seated.

HEADPHONE JACK

The headphone jack allows you to connect headphones or powered external speakers to your notebook. Your headphones or speakers must be equipped with a 1/8" (3.5 mm) stereo mini-plug. In order to connect headphones or speakers follow these easy steps: (See figure 2-4 on page 9 for location)

1. Align the connector with the port opening.
2. Push the connector into the port until it is seated.



User-Installable Features



If you plug headphones into the headphone jack, the built-in stereo speakers will be disabled.

EXTERNAL VIDEO PORT

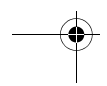
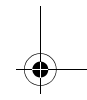
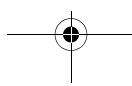
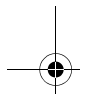
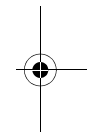
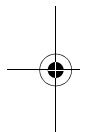
The external video port allows you to connect an external monitor or LCD projector. In order to connect an external device follow these easy steps: (See figure 2-7 on page 12 for location). There is also an external VGA monitor on the port replicator (See figure 4-11 on page 44 for location).

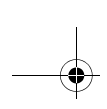
1. Remove the cover from the port opening, if present.
2. Align the connector with the port opening.
3. Push the connector into the port until it is seated.
4. Tighten the two hold-down screws, located on each side of the connector.



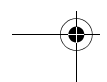
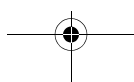
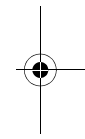
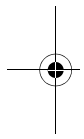
When an external monitor is plugged in, pressing the [Fn] + [F10] keys allows you to change your selection of where to send your display video. Each time you press the key combination, you will step to the next choice, starting with the built-in display panel only, moving to the external monitor only, finally moving to both the built-in display panel and an external monitor.

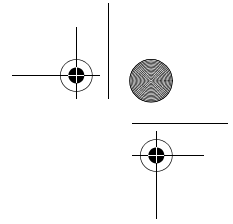
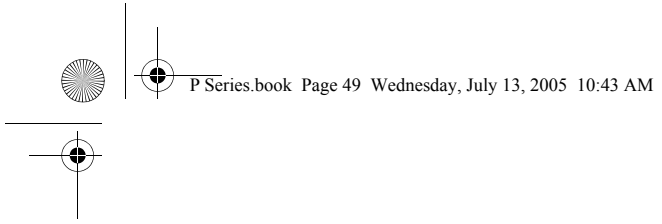
When an external monitor is plugged in, pressing the LifeBook Application Panel Secondary Function buttons (Fn + Screen Rotation Button) also allows you to change your selection of where to send your display video.



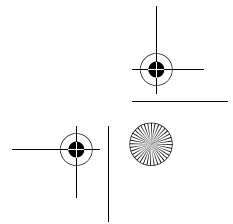
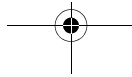
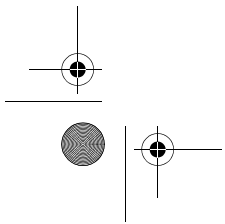
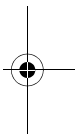
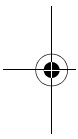


LifeBook P Series Notebook - Section Four



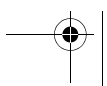
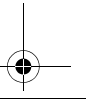
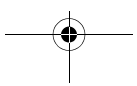
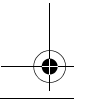
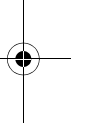
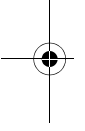


5 Troubleshooting





LifeBook P Series Notebook - Section Five





Troubleshooting

Your LifeBook P Series notebook 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 that you are having difficulty in solving, go through the following procedure before pursuing further troubleshooting:

1. Turn off your notebook.
2. Make sure the AC adapter is plugged into your notebook and to an active AC power source.
3. Make sure that any card inserted 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. 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 Troubleshooting Table, that follows, for more detailed troubleshooting information.
8. If you still have the problem after taking all of the above approaches, please check our support web site at <http://www.computers.us.fujitsu.com/support> for possible known support issues.



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

9. If you have tried the solutions suggested in the Troubleshooting Table and checked our Web site for possible solutions without success, contact your support representative:

Toll free: 1-800-8Fujitsu

E-mail: 8fujitsu@us.fujitsu.com

Web site:

<http://www.computers.us.fujitsu.com/support>

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
- Conditions under which the problem occurred
- Any error messages that have occurred
- Type of device connected, if any

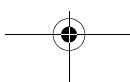
See the Configuration Label on the bottom of your notebook for configuration and serial numbers. (See *figure 2-8 on page 13 for location*)

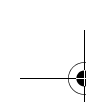
SPECIFIC PROBLEMS

Using the Troubleshooting Table

When you have problems with your notebook, try to find the symptoms under the Problem column of the troubleshooting 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 Solutions. All possible causes or solutions may not apply to your notebook.





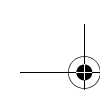
LifeBook P Series Notebook - Section Five

TROUBLESHOOTING TABLE

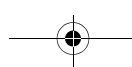
Problem	Page	Problem	Page
Audio Problems	page 52	Modem Problems	page 53
Docking Problems	page 52	USB Device Problems	page 53
Hard Drive Problems	page 52	Power Failures	page 54
Keyboard or Mouse Problems	page 52	Shutdown and Startup Problems	page 55
Pen Input Problems	page 53	Video Problems	page 56
Memory Problems	page 53	Miscellaneous Problems	page 57

Problem	Possible Cause	Possible Solutions
Audio Problems		
There is no sound coming from the built-in speakers.	The software volume control is set too low.	Adjust the sound volume control settings in your software, operating system and applications.
	Headphones are plugged into your notebook.	Plugging in headphones disables the built-in speakers, remove the headphones.
	Software driver is not configured correctly.	Refer to your application and operating system documentation for help.
	Sound could have been muted with function keys.	Press [F3] while holding the [Fn] key to toggle the sound on and off.
Port Replicator Problems		
notebook does not turn on when installed in optional Port Replicator	Port Replicator AC adapter is not plugged in.	Provide power to the Port Replicator.
	Notebook is not properly seated in the Port Replicator.	Remove and re-dock your notebook.
Hard Drive Problems		
You cannot access your hard drive.	The setup utility is incorrectly set for your internal (Primary Master) hard drive.	Revise BIOS settings to set the Primary Master correctly. See "BIOS Setup Utility" on page 30.
	The wrong drive designator was used by an application when a bootable CD-ROM was used to start the notebook.	Verify drive designator used by application is in use by the operating system. When the operating system is booted from a CD, drive designations are automatically adjusted.
	Security is set so your operating system cannot be started without a password.	Verify your password and security settings.
Keyboard or Mouse Problems		
The built-in keyboard does not seem to work.	The notebook has gone into Standby mode.	Push the Suspend/Resume button.
	Your application has locked out your keyboard.	Try to use your integrated pointing device to restart your system. If this fails, turn your notebook off by pressing the suspend/resume button for 10 seconds or more, and then turn it back on.
	The NumLock key has been toggled on.	Press the NumLock key to toggle it off.



**Troubleshooting**

Problem	Possible Cause	Possible Solutions
You have installed an external keyboard or mouse, and it does not seem to work.	Your external device is not properly installed.	Re-install your device. See "Device Ports" on page 46.
	Your operating system software is not set up with the correct driver for that device.	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.	Your operating system software is not set up with the correct driver for that device.	Check your device and operating system documentation and activate the proper driver.
	Your system has crashed.	Try to restart your notebook. If that fails, turn off the power by pressing the suspend/resume button for at least 10 seconds, and then power back on.
Pen Input Problems		
Cursor is not tracking the pen	The system may be uncalibrated	If the cursor on the screen appears to be misaligned with the pen or is not accurately tracking the pen, calibrate the pen. See "Calibrating the Touch Screen" on page 24.
Memory Problems		
Power On screen or Info menu of BIOS setup utility information, does not show the correct amount of installed memory.	Your memory upgrade module is not properly installed.	Turn off your notebook. Remove and re-install your memory upgrade module. See "Memory Upgrade Module" on page 39.
	You have a memory failure.	Check for Power On Self Test (POST) messages. See "Power On Self Test Messages" on page 58.
Modem Problems		
Messages about modem operation.	Messages about modem operation are generated by whichever modem application is in use.	See your application software documentation for additional information.
Modem does not appear to work.	Modem may not have been initialized.	Verify that the modem has been initialized by the operating system. To do so, right-click on My Computer and select the Hardware tab. Click [Device Manager] and click on the "+" symbol that appears next to Modems. Verify that your device is listed as installed.
USB Device Problems		
You have installed a USB device, but your notebook does not recognize the device, or the device does not seem to work properly.	The device is not properly installed.	Remove and re-install the device. See "Device Ports" on page 46.
	The device may have been installed while an application was running, so your notebook is not aware of its installation.	Close the application and restart your notebook.
	Your software may not have the correct driver active.	See your software documentation and activate the correct driver.
	Your device and another device are assigned the same I/O address.	Check all I/O addresses located within the BIOS setup utility and any other installed hardware or software to make sure there are no duplications.



LifeBook P Series Notebook - Section Five

Problem	Possible Cause	Possible Solutions
Power Failures		
You turn on your notebook and nothing seems to happen.	The installed battery is completely discharged or there is no power adapter (AC or Auto/Airline) installed.	Check the Status Indicator Panel to determine the presence and condition of the battery. See "Status Indicators" on page 14. Install a charged battery or a Power adapter.
	The battery is installed but is faulty.	Use the Status Indicator Panel to verify the presence and condition of the battery. See "Status Indicators" on page 14. If a battery is indicating a short, remove that battery and operate from another power source or replace that battery.
	The battery is low.	Check the Status Indicator Panel to determine the presence and condition of the battery. See "Status Indicators" on page 14. Use a Power adapter until the battery is charged.
	The AC or auto/airline adapter is not plugged in properly.	Verify that your adapter is connected correctly. See "Power Sources" on page 29.
	The Power adapter (AC or auto/airline) is faulty.	Try a different Power adapter or install a charged optional second battery.
	The Power adapter (AC or auto/airline) has no power from the AC outlet, airplane seat jack, or the car's cigarette lighter.	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.
Your notebook turns off all by itself.	The power management parameters are set for auto timeouts which are too short for your operating needs.	Press any button on the keyboard, or move the mouse to restore operation. If that fails, push the Suspend/Resume button. Check your power management settings, or close your applications and go to the Power Savings menu of the setup utility to adjust the timeout values to better suit your operation needs.
	You are operating on battery power only and have ignored a low battery alarm until the battery is at the dead battery state and your machine has gone into Dead Battery Suspend mode.	Install a power adapter and then push the Suspend/Resume button. See "Power Sources" on page 29.
	You have a battery failure.	Verify the condition of the battery using the Status Indicator panel, and replace or remove any battery that is shorted. See "Status Indicators" on page 14.
	Your power adapter has failed or lost its power source.	Make sure the adapter is plugged in and the outlet has power.
Your notebook will not work on battery alone.	The battery is dead.	Replace the battery with a charged one or install a Power adapter.
	No battery is installed.	Install a charged battery.

Troubleshooting

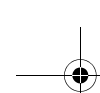
Problem	Possible Cause	Possible Solutions
Your notebook will not work on battery alone. (continued)	The battery is improperly installed.	Verify that the battery is properly connected by re-installing them.
	Your battery is faulty.	Verify the battery condition using the Status Indicator panel and replace or remove any battery that is shorted. See "Status Indicators" on page 14.
The battery seems to discharge too quickly.	You are running an application that uses a great deal of power due to frequent hard drive or CD-ROM access, or use of a modem or LAN PC card.	Use a power adapter for this application when at all possible.
	The power savings features may be disabled.	Check the power management and/or setup utility settings in the Power Savings menu and adjust according to your operating needs.
	The brightness is turned all the way up.	Turn down the brightness adjustment. The higher the brightness the more power your display uses.
	The battery is very old.	Replace the battery.
	The battery has been exposed to high temperatures.	Replace the battery.
	The battery is too hot or too cold.	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.
	The AC Adapter is defective.	Replace with another AC Adapter to see if the problem persists. Replace any defective AC Adapters.
Shutdown and Startup Problems		
The Suspend/Resume button does not work.	The Suspend/Resume button is disabled from the Advanced submenu of the Power menu of the setup utility.	Enable the button from the setup utility.
	You did not hold the button in long enough.	Hold the button longer. This may need to be a few seconds if your application is preventing the CPU from checking for button pushes.
	There may be a conflict with the application software.	Close all applications and try the button again.
The system powers up, and displays power-on information, but fails to load the operating system.	The boot sequence settings of the setup utility are not compatible with your configuration.	Set the operating source by pressing the [F2] key while the Fujitsu logo is on screen, entering the setup utility and adjusting the source settings from the Boot menu. See "BIOS Setup Utility" on page 30.
	You have a secured system requiring a password to load your operating system.	Make sure you have the right password. Enter the setup utility and verify the Security settings and modify them as accordingly. See "BIOS Setup Utility" on page 30.

LifeBook P Series Notebook - Section Five

Problem	Possible Cause	Possible Solutions
An error message is displayed on the screen during the notebook boot sequence.	Power On Self Test (POST) has detected a problem.	See the Power On Self Test (POST) messages to determine the meaning and severity of the problem. Not all messages are errors; some are simply status indicators. See "Power On Self Test Messages" on page 58.
Your system display won't turn on when the system is turned on or when the system has resumed.	The system may be password-protected.	Check the status indicator panel to verify that the Security icon is blinking. If it is blinking, enter your password.
Your notebook appears to change setup parameters when you start it.	BIOS setup changes were not saved when you made them and exited the BIOS setup utility returning it to previous settings.	Make sure you select Save Changes And Exit when exiting the BIOS setup utility.
	The BIOS CMOS back-up battery has failed.	Contact your support representative for repairs. This is not a user-serviceable part.
Video Problems		
The built-in display is blank when you turn on your notebook.	The angle of the display and the brightness settings are not adequate for your lighting conditions.	Move the display and the brightness control until you have adequate visibility.
	The optional Port Replicator is attached, an external monitor is plugged in, and the notebook is set for an external monitor only.	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.
	The power management timeouts may be set for very short intervals and you failed to notice the display come on and go off again.	Press any button the keyboard, or move the mouse to restore operation. If that fails, push the Suspend/Resume button. (The display may be shut off by Standby mode, Auto Suspend or Video Timeout)
The notebook turned on with a series of beeps and your built-in display is blank.	Power On Self Test (POST) has detected a failure which does not allow the display to operate.	Contact your support representative.
Your system display won't turn on when the system is turned on or when the system has resumed.	The system may be password-protected.	Check the status indicator panel to verify that the Security icon is blinking. If it is blinking, enter your password.
The display goes blank by itself after you have been using it.	The notebook has gone into Video Timeout, Standby Mode, or Hibernate Mode because you have not used it for a period of time.	Press a button on the keyboard, or move the mouse to restore operation. If that fails, push the Suspend/Resume button. Check your power management settings, or close your applications and go to the Power Savings menu of the setup utility to adjust the timeout values to better suit your operation needs. See "BIOS Setup Utility" on page 30.

Troubleshooting

Problem	Possible Cause	Possible Solutions
The display goes blank by itself after you have been using it. (continued)	The power management time-outs may be set for very short intervals and you failed to notice the display come on and go off again.	Press any button on the keyboard, or move the mouse to restore operation. If that fails, push the Suspend/Resume button. (The display may be shut off by Standby Mode, Auto Suspend or Video Timeout)
The display does not close.	A foreign object, such as a paper clip, is stuck between the display and the keyboard.	Remove all foreign objects from the keyboard.
The display has bright or dark spots.	If the spots are very tiny and few in number, this is normal for a large LCD display.	This is normal; do nothing.
	If the spots are numerous or large enough to interfere with your operation needs.	The display needs technical diagnosis; contact your support representative.
The application display uses only a portion of your screen and is surrounded by a dark frame.	You are running an application that does not support 800 x 600/1024 x 768 pixel resolution display and display compression is enabled.	When compensation is disabled, a clearer but smaller display for applications that do not support 800 x 600/1024 x 768 pixel resolution will result. You can fill the screen but have less resolution by changing your compensation setting. (See the Video Features submenu, located within the Advanced menu of the BIOS. See "BIOS Setup Utility" on page 30.
You have connected an external monitor and it does not display any information.	Your BIOS setup is not set to enable your external monitor.	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, located within the Advanced Menu of the BIOS. See "BIOS Setup Utility" on page 30.
	Your external monitor is not properly installed.	Reinstall your device. See "External Video Port" on page 47.
	Your operating system software is not set up with the correct software driver for that device.	Check your device and operating system documentation and activate the proper driver.
You have connected an external monitor and it does not come on.	Your external monitor may not be compatible with your notebook.	See your monitor documentation and the External Monitor Support portions of the Specifications section. See "Specifications" on page 71.
Miscellaneous Problems		
An error message is displayed on the screen during the operation of an application.	Application software often has its own set of error message displays.	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 that Phoenix BIOS and/or your operating system can generate and an explanation of each message. Error messages are marked with an *. If an error message is displayed that is not in this list, write it down and check your operating system documentation both on screen and in the manual. If you can find no reference to the message and its meaning is not clear, contact your support representative for assistance.

nnnn Cache SRAM Passed

Where nnnn is the amount of system cache in kilobytes successfully tested by the Power On Self Test. (This can only appear if you have an SRAM PC Card installed.)

***Extended RAM Failed at offset: nnnn**

Extended memory not working or not configured properly. If you have an installed memory upgrade module, verify that the module is properly installed. If it is properly installed, you may want to check your Windows Setup to be sure it is not using unavailable memory until you can contact your support representative.

nnnn Extended RAM Passed

Where nnnn is the amount of memory in kilobytes successfully tested.

***Failing Bits: nnnn The hex number nnnn**

This is a map of the bits at the memory address (in System, Extended, or Shadow memory) which failed the memory test. Each 1 (one) in the map indicates a failed bit. This is a serious fault that may 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)**

The fixed disk is not working or not configured properly. This may mean that the hard drive type identified in your setup utility does not agree with the type detected by the Power On Self Test. Run the setup utility to check for the hard drive type settings and correct them if necessary. If the settings are OK and the message appears when you restart the system, there may be a serious fault which might cause you to lose data if you continue. Contact your support representative.

***Invalid NVRAM media type**

Problem with NVRAM access. In the unlikely case that you see this message you may have some display problems. You can continue operating but should contact your support representative for more information.

***Keyboard controller error**

The keyboard controller test failed. You may have to replace your keyboard or keyboard controller but may be able to use an external keyboard until then. Contact your support representative.

***Keyboard error**

Keyboard not working. You may have to replace your keyboard or keyboard controller but may be able to use an external keyboard until then. Contact your support representative.

***Keyboard error nn**

BIOS discovered a stuck key and displays the scan code for the stuck key. You may have to replace your keyboard but may be able to use an external keyboard until then. Contact your support representative.

***Operating system not found**

Operating system cannot be located on either drive A: or drive C: Enter the setup utility and see if both the 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 may be 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**

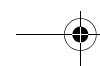
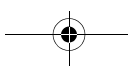
Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays "????". This is a potentially data destroying failure. Contact your support representative.

***Press <F1> to resume, <F2> to SETUP**

Displayed after any recoverable error message. Press the [F1] key to continue the boot process or the [F2] key to enter Setup and change any settings.

***Previous boot incomplete – Default configuration used**

Previous Power On Self Test did not complete successfully. The Power On Self Test will load default values and offer to run Setup. If the previous 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 and contact your support representative.





Troubleshooting

***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.

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 RESULT CODES

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 53,000 bps.)
- ERROR
- FAX
- RING (This means an incoming call.)
- BUSY
- NO ANSWER

When using the internal modem with applications that are not factory installed refer to the application documentation.



Restoring Your Pre-installed Software

The Drivers and Applications Restore (DAR) CD contains sets of device drivers and Fujitsu utilities (in specific directories) that are unique to your notebook configuration for use as documented below.



If you have access to the internet, visit the Fujitsu Support web site at <http://www.computers.us.fujitsu.com/support> to check for the most current information, drivers and hints on how to perform recovery and system updates. See "Automatically Downloading Driver Updates" on page 61.

Re-Installing Individual Drivers and Applications

The Drivers and Applications CD can be used to selectively re-install drivers and/or applications that may have been un-installed or corrupted.



There may be certain free third-party applications pre-installed on your system that are not on the DAR CD. The latest versions of the applications can be downloaded from the third-party's website.

To re-install drivers and/or applications:

1. Boot up the system and insert the DAR CD after Windows has started. A Fujitsu Installer screen is displayed after the CD is inserted.
2. After reading the License Agreement, click [I agree].
3. A window will appear containing a list of applications, drivers, and utilities that you can install from the Drivers and Applications CD.



The components listed are color-coded in terms of their install status. Blue indicates that the component can be installed. Green indicates that the component needs to be installed separately. Grey indicates a component that is already installed; grey items can be reinstalled, but prior to installation you will receive a reminder that the component is already installed.

4. In the list, check off all the components you want to install. If you want to install all components, click [Select All]. Clicking [Select All] will select all of the blue-coded components; you must select grey and green components separately.

5. Once you have selected the components you wish to install, click [Install Selected Subsystems]; the components will be installed.
6. After the components are installed, click [OK], then click [Yes] when asked if you want to reboot the system.

RESTORING THE FACTORY IMAGE

The Restore Disc that came with your system contains two utilities:

- The **Recovery** utility allows you to restore the original contents of the C: drive.
- The **Hard Disk Data Delete** utility on this disc is used to delete all data on your hard disk and prevent it from being reused. Do not use the Hard Disk Data Delete utility unless you are absolutely certain that you want to erase your entire hard disk, including all partitions.



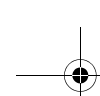
- The use of this disc requires that you have a device capable of reading CDs attached to your system. If you do not have a built-in CD player, you will need to attach an external player. For more information on available external devices, visit our Web site at: www.shopfujitsu.com.

- This disc can only be used with the system with which it was purchased.

BOOT Priority Change

Before restoring an image, you must first verify that your system is set up to boot from the CD drive. To verify/change the boot-up priority (rather than booting-up from the hard drive or an external floppy disk drive), perform the following steps:

1. Start your system and press the [F2] key when the Fujitsu logo appears. You will enter the BIOS Setup Utility.
2. Using the arrow keys, go to the Boot menu.
3. Arrow down to the Boot Device Priority submenu. Press [Enter].
4. If "Optical Media Drive" or "CD-ROM Drive" is not at the top of the list, arrow down to the drive in the list, and press the space bar (or the + key) to move it to the top of the list. (The system attempts to boot from the devices in the order in which they are listed.). Note that the BIOS for some systems will indicate "CD-ROM Drive", even when a DVD drive is connected.
5. If you have an *external* drive connected, proceed to step 6; otherwise, proceed to step 7.
6. If you have an external drive connected:



Troubleshooting


- Select the Advanced menu in the BIOS window.
 - Scroll down to the USB Features submenu and press the Enter key to open it.
 - If Legacy USB Support is disabled, press the space bar to enable it.
 - Scroll down to SCSI SubClass Support and press the space bar to enable it.
7. Press [F10], then click on [Yes] to exit the BIOS Setup Utility and return to the boot process.
- After you have changed the boot priority, you can restore a backup image when you are booting up.

Procedure

1. Turn on the power to your system.
2. Ensure that you have a device that can read CDs either installed in your system or attached externally to it.
3. Insert the Restore Disc into the drive tray.
4. Reboot your system.
5. After the system reboots, follow the instructions that appear to either restore your system image or erase all data from your hard disk.

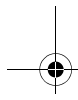
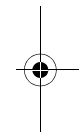
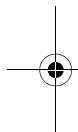
AUTOMATICALLY DOWNLOADING DRIVER UPDATES

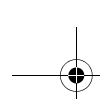
Your system has a convenient tool called the Fujitsu Driver Update (FDU) utility. With FDU, you can choose to automatically or manually go to the Fujitsu site to check for new updates for your system.

The FDU icon  should appear in the system tray at the bottom right of your screen (roll the cursor over the icons to find the correct one). If the FDU icon does not appear in the system tray, it can be started by going to [Start] -> All Programs, and clicking on Fujitsu Driver Update; this will create the icon automatically.

To invoke the FDU menu, right-click on the FDU icon. The menu contains the following items:

- **Check for updates now**
Allows for manual driver update search. The first time it is used, you are prompted to agree to a user agreement. After clicking on the icon, the FDU automatically connects with the Fujitsu site to check for updates and downloads them. While downloading, the icon has a red bar through it, indicating that it cannot be used while the download is in process. When the update is complete, a message appears informing you of the fact.
- **Enable Automatic Update Notifications**
Automatically searches for new updates on a regular basis (approximately every 3 days).
- **Show update history**
Brings up a screen that displays a history of updates that have been made via the FDU.
- **About Fujitsu Driver Update**
Displays the FDU version number and copyright information
- **Fujitsu Driver Update Readme**
Displays the FDU readme.





LifeBook P Series Notebook - Section Five

