answers 2

EasyGuide

# LIFEBOOK C Series

English

FUJITSU COMPUTERS SIEMENS

# Are there ...

... any technical problems or other questions which you would like to be clarified?

Please contact:

- your sales partner
- your sales outlet

Additional information is contained in the "Warranty" manual and the Help Desk list.

The latest information on our products, tips, updates, etc., can be found on the internet under:
*http://www.fujitsu-siemens.com*

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# LIFEBOOK C Series

## Operating manual


Introduction

Technical data

Important notes

Index

Manufacturer's notes

Preparing the notebook for use

Working with the notebook

Security functions

Connecting external devices

Settings in BIOS Setup

Troubleshooting and tips

Memory expansion


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# Contents

**Your LIFEBOOK C Series ..... 1**
Notational conventions ..... 2

**Important notes ..... 3**
Safety notes ..... 3
Additional safety precautions for devices with wireless LAN ..... 4
Notes on installing and removing boards and modules ..... 5
Energy saving ..... 5
Storing the battery ..... 6
Transporting the notebook ..... 6
Before you travel ..... 6
Transporting the notebook ..... 7
Cleaning the notebook ..... 7

**Manufacturer's notes ..... 9**
Copyright-protected technology ..... 9
Energy Star ..... 9
CE marking ..... 9
Regulatory notices ..... 10
Regulatory information for notebooks without radio device ..... 10
FCC Regulatory information for notebooks with radio device ..... 13
Radio frequencies for devices with wireless LAN ..... 15
Disposal and recycling ..... 16

**Preparing the notebook for use ..... 17**
Unpacking and checking the delivery ..... 17
Selecting a location ..... 17
Connecting the power adapter ..... 18
Switching on the notebook for the first time ..... 18

**Working with the notebook ..... 21**
Switching on the notebook ..... 21
Switching the notebook off ..... 22
Ports, indicators and operating elements ..... 23
Interior view ..... 23
Front ..... 24
Left side panel ..... 24
Right side panel ..... 25
Back panel ..... 25
Display field ..... 26
Keyboard ..... 28
Key combinations ..... 29
Application/player buttons ..... 31
Application buttons ..... 31
Player buttons ..... 32
Touchpad and touchpad buttons ..... 33
LCD display panel ..... 34
Information on LCD monitor ..... 34
Display settings ..... 34
Battery ..... 35
Charging the battery ..... 35
Monitoring the battery charging level ..... 36
Inserting and removing the battery ..... 36

Using the power-management features ... 37
Standby mode ... 38
Operating systems with ACPI (Windows 2000 and Windows XP) ... 39
Module ... 39
Removing module ... 40
Installing module ... 41
Optical drive ... 41
Handling CD/DVDs ... 42
Manual removal (emergency removal) ... 44
Integrated 56k modem ... 44
Connecting notebook modem to telephone connection ... 45
Wireless LAN ... 46
Wireless network as per IEEE 802.11 standard ... 46
Operating system requirements ... 47
PC cards ... 48
Working with PC cards ... 48
Loudspeakers ... 51

**Security functions ... 53**
Overview of all security functions ... 53
Kensington Lock ... 53
BIOS password protection ... 53
Brief overview of the security functions ... 54
Using Kensington Lock ... 54
Configuring password protection in BIOS Setup ... 55
Protecting BIOS Setup (supervisor and user password) ... 55
Password protection of operating system ... 56
Password protection for hard disk ... 57

**Connecting external devices ... 59**
Ports ... 60
Connecting an external monitor ... 61
Connecting an external keyboard ... 62
Connecting an external PS/2 mouse ... 62
Using the parallel port ... 62
Connecting USB devices ... 62
Connecting external audio devices ... 63

**Settings in BIOS Setup ... 65**
Start BIOS Setup ... 65
Operating BIOS Setup ... 65
Exiting BIOS Setup ... 66

**Troubleshooting and tips ... 67**
You have forgotten your user and/or supervisor password. ... 67
Installing new software ... 67
Restoring the operating system ... 67
The notebook's date or time is incorrect ... 68
The LCD screen of the notebook remains blank ... 68
The LCD screen is difficult to read ... 68
The external monitor stays blank ... 68
The external monitor is blank or the image is unstable ... 69
The notebook cannot be started ... 69
The notebook stops working ... 70
The mouse does not work ... 70
The printer does not print ... 70

Acoustic warnings ... 71

**Memory expansion ... 73**
Installing and removing the memory extension ... 73

**Technical data ... 77**
Notebook ... 77
Battery ... 79
Power adapter ... 79

**Index ... 81**

# Your LIFEBOOK C Series ...

is a versatile and ergonomic notebook. Innovative technology and an ergonomic design make your notebook a reliable, convenient mobile PC.

To make it easier to use the notebook for the first time, the operating system has been preinstalled on the hard disk. Your notebook is supplied with Windows 2000 or Windows XP as the operating system.

The system settings of the notebook can be configured via the user-friendly *BIOS Setup* programme. Certain system settings (e.g. screen display, energy saving functions) can be modified via various key combinations while you are using the notebook.

Your LIFEBOOK has a number of security features to ensure that no unauthorised persons can access your data. For example, you can protect access to your data with the security functions in the *BIOS Setup*.

Your notebook has 128 -2048 Mbyte of main memory installed, depending on the upgrade level. Depending on the model, your notebook is delivered with a DVD-ROM, a CD-ROM drive or a combo drive (CD-RW/DVD). Two PC card slots enable the notebook to operate two type I or type II PC cards or one type III PC card.

The energy-saving processor and the configurable energy-saving functions allow you to make the most effective use of the battery capacity.

Your notebook has connectors for external devices such as an external monitor or a printer. The ECP capable parallel port is designed for fast bi-directional data transfer. You can connect peripheral devices such as a scanner, loudspeakers, gamepads, keyboard, or mouse via the two USB ports. For mouse control, the notebook has a touchpad with touchpad buttons.

An audio controller and two built in loudspeakers provide your notebook with audio options, enabling to incoporate voice, noise effects and music into your LIFEBOOK environment. You can also connect an external microphone and active loudspeakers.

This operating manual tells you how to put your notebook into operation and how to operate it in daily use.

Additional information on your notebook is contained in the following documents:

- in the "Safety" manual
- in the "Warranty" manual
- in the "Getting Started" manual
- in the documentation of the operating system
- in the information files, which accompany any software (e. g. **.TXT*, **.DOC*, **.WRI*, **.HLP*, **.PDF*)

# Notational conventions

The following symbols are used in this manual:

Indicates information which is important for your health or for preventing physical damage. Failure to follow the instructions may lead to loss of data, invalidate your warranty, destroy the notebook, or endanger your life.

Indicates important information which is required to use the system properly.

► Text which follows this symbol describes activities that must be performed in the order shown.

`This font` indicates screen outputs.

*This font* indicates programme names, commands, or menu items.

"Quotation marks" indicate names of chapters, data carriers, and terms that are being emphasised.

# Important notes

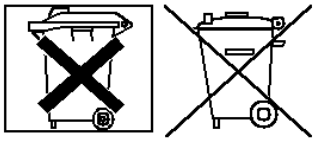
Here you will find essential safety information regarding your notebook. The other notes provide useful information on your notebook.

## Safety notes

Pay attention to the information provided in the "Safety" and "Warranty" manuals and in the following security notes.

Observe the sections in the manual marked with the symbol on the left.

- During installation and before operating the device, please observe the instructions on environmental conditions in the "Technical data" chapter as well as the instructions in the "Preparing the notebook for use" chapter.
- When connecting and disconnecting cables, observe the relevant notes in this operating manual.
- When cleaning the device, please observe the relevant notes in the "Cleaning the notebook" paragraph.
- Only use batteries designed for this notebook.
  Do not store batteries for longer periods in the notebook.
  Take care not to drop the batteries or otherwise damage their casing (fire risk).
  If the rechargeable batteries are defective, they must not be used.
  Do not touch the contacts of the batteries.
  Never interconnect the positive and negative terminals of a battery.
  Used batteries must be disposed of in accordance with local regulations (special waste).
- If a lithium battery (button cell) is installed in the notebook for real-time buffering, please note that:
  The lithium battery may only be replaced by authorised, specially trained personnel. Incorrect handling may lead to a risk of explosion.
  The lithium battery may be replaced only with an identical battery or with a type recommended by the manufacturer.
  The lithium battery must be disposed of in accordance with local regulations concerning special waste.
- All batteries containing pollutants are marked with one of the two symbols below (crossed-out garbage can).



In addition, the marking is provided with the chemical symbol of the heavy metal decisive for the classification as a pollutant.

Cd Cadmium

Hg Mercury

Pb Lead

- Your notebook is equipped with numerous security functions that offer you a high level of security according to a multi-level concept. Detailed information can be found in "Security functions" chapter.
- If you have a device with a wireless LAN, also observe the information in the section "Additional safety precautions for devices with wireless LAN".

This notebook complies with the relevant safety regulations for data processing equipment. If you have questions as to whether you can set up the notebook in the intended environment, please contact your sales point or our hotline/help desk.

## Additional safety precautions for devices with wireless LAN

If a wireless LAN component is integrated in your notebook, you must be sure to observe the following safety precautions when using your notebook:

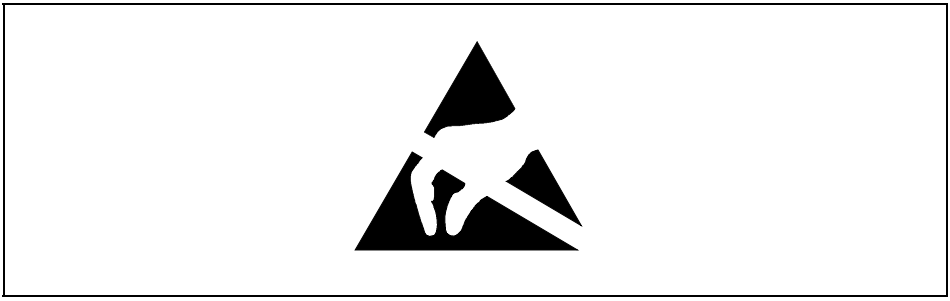
- The transmitted radio waves can cause an unpleasant humming in hearing aids.
- Switch off the notebook when you are in an aircraft or driving in a car.
- Switch off the radio components on the notebook when you are in a hospital, an operating room or near a medical electronics system. The transmitted radio waves can impair the operation of the medical devices.
- Keep the notebook at least 20 cm from a pacemaker, as otherwise the proper operation of the pacemaker may be impaired by radio waves.
- Do not let the notebook near flammable gases or into hazardous environments (e.g. paintshops) with radio components switched on, as the transmitted radio waves can cause an explosion or a fire.
- The range of the radio connection is dependent on environmental and ambient conditions.
- With data traffic via a wireless connection, it is also possible for unauthorised third parties to receive data.

The company Fujitsu Siemens Computers GmbH cannot be held responsible for radio or television faults arising from unauthorised changes made to this device. Fujitsu Siemens is, furthermore, not responsible for replacing and / or exchanging connector cables and devices which have not been specified by Fujitsu Siemens Computers GmbH. The user is solely responsible for repairing faults arising from such unauthorised changes made to a device and for replacing and / or exchanging devices.

## Notes on installing and removing boards and modules

Only qualified technicians should repair the device. Unauthorised opening or incorrect repair may greatly endanger the user (electric shock, fire risk).

Boards with electrostatic sensitive devices (ESD) are identifiable by the label shown.



When you handle boards fitted with ESDs, you must, under all circumstances, observe the following points:

- You must statically discharge yourself before working with boards (e.g. by touching a grounded object).
- The equipment and tools you use must be free of static charges.
- Remove the power plug from the mains supply before inserting or removing boards containing ESDs.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

# Energy saving

If you will not be using your notebook, switch it off.

Make use of the device's energy saving functions (see "Working with the notebook"). The notebook uses less power when the power management features are enabled. You will then be able to work for longer before having to recharge the battery.

### Energy saving under Windows

If a monitor with energy saving features is connected to your notebook, you can use the *Screen Saver* tab to activate the energy saving features of the monitor. Select the following item in the start menu: *Settings - Control Panel - Display - Display Properties - Screen Saver - Energy saving functions for the display*. You can set additional energy saving functions in the start menu by selecting the following item: *Settings - Control Panel - Energy - Extended*.

# Storing the battery

If you do not use the batteries for long periods, remove them from the notebook. Never store the batteries in the unit.

Store the battery in a fully charged state. The battery should be stored in a dry area at a temperature between 0°C and +30°C. The lower the temperature at which the batteries are stored, the lower is the rate of self-discharge.

If storing for a long period of time (longer than two months) batteries should be fully charged before storage.

To be able to use the optimum battery charging capacity, you should work in the battery mode until the battery is completely discharged, and then recharge the battery.

# Transporting the notebook

Please observe the points listed below when transporting your notebook.

## Before you travel

- Back up important data stored on your hard disk.
- Switch off the radio component (Wireless LAN) for security reasons when youn cannot exclude that the transmitted radio waves can negatively affect electrical and electronic devices in your surrounding area.
- If you wish to use your notebook during a flight, first check with the flight attendants if it is permissible to do so.
- If you are travelling abroad, ensure that the power adapter can be operated with the local mains voltage. If this is not the case, obtain the appropriate power adapter for your notebook. Do not use any other voltage converter!

If you travel in another country, check whether the local power supply and the specifications of the power cable are compatible. If this is not the case, buy a power cable that matches the local conditions. Do not use a connection adapter for electrical devices to connect the notebook.

If you use a modem, incompatibilities with the local telecommunications system may result.

## Transporting the notebook

- Remove all data carriers (e.g. CD) from the drives.
- Switch the notebook off.
- Unplug the power adapter and all peripheral devices from the mains outlet.
- Disconnect the power adapter cable and the data cables of all peripheral devices.
- Close the LCD screen so that it locks into place.
- If the device needs to be shipped, use the original packaging or other suitable packaging to protect it from damage caused by mishandling.
- To protect against damaging jolts and bumps, use a notebook carrying case to transport your notebook.
  Fujitsu Siemens Computers offers a number of solutions for transporting your notebook. The current offering can be viewed on the Internet at *http://www.e-shop2.de*.
- Protect the notebook from severe shocks and extreme temperatures (e.g. direct sunlight in a car).

# Cleaning the notebook

► Switch off the notebook and all devices connected.

► Place the notebook on a flat surface.

► Close the LCD screen so that it locks into place.

► Unplug the power adapter from the mains outlet.

► Disconnect all cables connected to the notebook.

► Turn the notebook over.

► Remove the battery.
  How to remove the battery is described in the section "Inserting and removing the battery".

Do not clean any interior parts yourself; leave this job to a service technician.

Do not use any cleaning agents that contain abrasives or may corrode plastic. The use of improper cleaning agents can damage the markings on the keyboard and the notebook, the paintwork of the device or the device itself.

Ensure that no liquid enters the notebook.

Wipe the casing with a dry cloth.
If particularly dirty, use a cloth that has been moistened in mild domestic detergent and then carefully wrung out.

To clean the touchpad, you can use disinfectant wipes.

Wipe the LCD screen with a soft, moistened cloth.

# Manufacturer’s notes

Keep this operating manual together with your device. If you pass on the device to third parties, you should include this manual.

## Copyright-protected technology

This product incorporates copyright protection technology that is protected by method claims of certain U. S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorised by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorised by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

## Energy Star

The notebook from Fujitsu Siemens Computers is designed to conserve electricity by dropping to less than 8 W when it goes into standby/suspend mode and to less than 3 W when it goes into OFF mode. With this level of power management, the notebook qualifies for the U.S. Environmental Protection Agency's (EPA) Energy Star Computers award.

The EPA estimates that computer equipment uses 5 % percent of all business electricity and that this is growing rapidly. If all desktop PCs and peripherals enter a low-power mode when not in use, the overall savings in electricity could amount to $ 2 milliard annually. These savings could also prevent the emission of 20 million tons of carbon dioxide into the atmosphere - the equivalent of 5 million automobiles.
As an Energy Star Partner, Fujitsu Siemens Computers GmbH has determined that this product meets the Energy Star guidelines for energy efficiency.

## CE marking

**CE marking for devices without wireless LAN**

The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

**CE marking for devices with wireless LAN**

This equipment complies with the requirements of Directive 1999/5/EC of the European Parliament and Commission from 9 March, 1999 governing Radio and Telecommunications Equipment and mutual recognition of conformity.

This notebook is approved for use in Belgium, Denmark, Germany, Finland, Greece, Great Britain, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Sweden, Switzerland, Spain, Iceland, Liechtenstein and Norway. Contact the corresponding government office of the respective country for current information on possible operating restrictions. If your country is not included in the list, then please contact the corresponding supervisory authority as to whether the use of this product is permitted in your country.

# Regulatory notices

## Regulatory information for notebooks without radio device

**NOTICE:**

Changes or modifications not expressly approved by Fujitsu Siemens Computers could void this user's authority to operate the equipment.

**Notice to Users of Radios and Television**

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

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

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

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

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

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

This equipment is designed to be connected to the telephone network or premises wiring using a standard modular jack type USOC RJ-11C which is FCC Part 68 compliant and a line cord between the modem and the telephone network with a minimum of 26AWG.
The REN is used to determine the number of devices that you may connect to your telephone line and still have all of those devices ring when your number is called. Too many devices on one line may result in failure to ring in response to an incoming call. In most, but not all, areas the sum of the RENs of all of the devices should not exceed five (5). To be certain of the number of devices you may connect to your line, as determined by the RENs, contact your local telephone company.
If this equipment causes harm to the telephone network, your telephone company may discontinue your service temporarily. If possible, they will notify you in advance. If advance notice is not practical they will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC.

This fax modem also complies with fax branding requirements per FCC Part 68.
Your telephone company will probably ask you to disconnect this equipment from the telephone network until the problem is corrected and you are sure that the equipment is not malfunctioning.
This equipment may not be used on coin-operated telephones provided by your telephone company. Connection to party lines is subject to state tariffs. Contact your state's public utility commission, public service commission or corporation commission for more information.

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

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

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

- All public or semipublic coin-operated or credit card telephones.
- Elevators, highways, tunnels (automobile, subway, railroad or pedestrian) where a person with impaired hearing might be isolated in an emergency.
- Places where telephones are specifically installed to alert emergency authorities such as fire, police or medical assistance personnel.
- Hospital rooms, residential health care facilities, convalescent homes and prisons.
- Hotel, motel or apartment lobbies.
- Stores where telephones are used by patrons to order merchandise.
- Public transportation terminals where telephones are used to call taxis or to reserve lodging or rental cars.
- In hotel and motel rooms as at least ten percent of the rooms must contain hearing aid-compatible telephones or jacks for plug-in hearing aid compatible telephones which will be provided to hearing impaired customers on request.

## DOC (INDUSTRY CANADA) NOTICES

**Notice to Users of Radios and Television**

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

CET appareil numérique de la class B respecte toutes les exigence du Réglement sur le matérial brouilleur du Canada.

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

**NOTICE:**

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications.

This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment. Before connecting this equipment to a telephone line the user should ensure that it is permissible to connect this equipment to the local telecommunication facilities. The user should be aware that compliance with the certification standards does not prevent service degradation in some situations.
Repairs to telecommunication equipment should be made by a Canadian authorized maintenance facility. Any repairs or alterations not expressly approved by Fujitsu or any equipment failures may give the telecommunication company cause to request the user to disconnect the equipment from the telephone line.

**NOTICE:**

The Ringer Equivalence Number (REN) for this terminal equipment is 0.0. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

**CAUTION:**

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

**Avis Aux Utilisateurs Du Réseau Téléphonique Canadien**

AVIS: Le présent matériel est conforme aux spécifications techniques d'Industrie Canada applicables au matériel terminal. Cette conformité est confirmée par le numéro d'enregistrement. Le sigle IC, placé devant le numéro d'enregistrement, signifie que l'enregistrement s'est effectué conformément à une déclaration de conformité et indique que les spécifications techniques d'Industrie Canada ont été respectées. Il n'implique pas qu'Industrie Canada a approuvé le matériel. Avant de connecter cet équipement à une ligne téléphonique, l'utilisateur doit vérifier s'il est permis de connecter cet équipement aux installations de télécommunications locales. L'utilisateur est averti que même la conformité aux normes de certification ne peut dans certains cas empêcher la dégradation du service.
Les réparations de l'équipement de télécommunications doivent être eVectuées par un service de maintenance agréé au Canada. Toute réparation ou modification, qui n'est pas expressément approuvée par Fujitsu, ou toute défaillance de l'équipement peut entraîner la compagnie de télécommunications à exiger que l'utilisateur déconnecte l'équipement de la ligne téléphonique.
AVIS: L'indice d'équivalence de la sonnerie (IES) du présent matériel est de 0.0. L'IES assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

**AVERTISSEMENT:**

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

**UL Notice**

This unit requires an AC adapter to operate. Use only UL Listed Class 2 adapter, output rating 19V DC, 4.22 A. Refer to the illustration below for the correct AC Adapter output polarity:

**CAUTION:**

To reduce the risk of fire, use only #26 AWG or larger telecommunications line cord.

**For Authorized Repair Technicians Only**

**CAUTION:**

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

**WARNING:**

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

## FCC Regulatory information for notebooks with radio device

**Federal Communications Commission statement**

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause interference, and, (2) This device must accept any interference, including interference that may cause undesired operation of this device.

**FCC Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from the one the receiver is connected to.
4. Consult the dealer or an experienced radio/TV technician for help.

Please note the following regulatory information related to the optional radio device.

**FCC Radio Frequency Exposure statement**

This radio device has been evaluated under FCC Bulletin OET 65C and found compliant with the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this radio device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When using this device, a certain separation distance between antenna and nearby persons must be maintained to ensure RF exposure compliance. In order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm (8 inches).

**Regulatory Notes and Statements**

Radio device, Health and Authorization for use Radio frequency electromagnetic energy is emitted from the radio devices. The energy levels of these emissions, however, are far much less than the electromagnetic energy emissions from wireless devices such as mobile phones. Radio devices are safe for use by consumers because they operate within the guidelines found in radio frequency safety standards and recommendations.

The use of the radio devices may be restricted in some situations or environments, such as:

- On board an airplane, or
- In an explosive environment, or
- In situations where the interference risk to other devices or services is perceived or identified as harmful.

In cases in which the policy regarding use of radio devices in specific environments is not clear (e.g., airports, hospitals, chemical/oil/gas industrial plants, private buildings), obtain authorization to use these devices prior to operating the equipment.

**Regulatory Information/Disclaimers**

Installation and use of this radio device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution or attachment of connecting cables and equipment other than those specified by the manufacturer. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. The manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failure to comply with these guidelines.

### Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license. This device complies with Part 15 of FCC Rules., as well as ICES 003 B / NMB 003 B. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesirable operation.
Modifications not expressly authorized by Fujitsu Siemens Computers may invalidate the user's right to operate this equipment.

# Radio frequencies for devices with wireless LAN

The following information represents the status of January 2002. Current information is available from the corresponding government office of your country (e.g. *www.regtp.de*).

### Frequencies

Wireless network cards and adapters are intended for operation in the ISM (Industrial, Scientific, Medical) frequency range between 2.4 and 2.4835 GHz in accordance with the IEEE standard 802.11b. As each of the 11 usable radio channels requires a bandwidth of 22 MHz due to the DSSS (Direct Sequence Spread Spectrum) process, a maximum of three mutually independent channels (e.g. 3, 8 and 11) are available. In the following tables you will find the channels permitted in your country:

| Channel No. / MHz | Europe, R&TTE | France, R&TTE |
|---|---|---|
| 1 / 2412 | X | |
| 2 / 2417 | X | |
| 3 / 2422 | X | |
| 4 / 2427 | X | |
| 5 / 2432 | X | |
| 6 / 2437 | X | |
| 7 / 2442 | X | |
| 8 / 2447 | X | |
| 9 / 2452 | X | |
| 10 / 2457 | X | X |
| 11 / 2462 | X | X |

# Disposal and recycling

This device has been manufactured to the highest possible degree from materials which can be recycled or disposed of in a manner that is not environmentally damaging. The device may be taken back after use to be recycled, provided that it is returned in a condition that is the result of normal use. Any components not reclaimed will be disposed of in an environmentally acceptable manner.

Do not throw batteries or accumulators into the household waste.

If you have any questions on disposal, please contact your local office, our hotline/help desk, or:

Fujitsu Siemens Computers GmbH
Recyclingcenter
D-33106 Paderborn

Tel.: (05251) 81 80 10
Fax: (05251) 81 80 15

# Preparing the notebook for use

Please take note of the information in the "Important notes" chapter.

Before you can work with your notebook, you need to charge the battery and install and configure the delivered software. The operating system and drivers required are preinstalled.

Upon delivery, the battery can be found in the battery compartment and is not charged. You need to charge the battery if you want to operate your notebook with a rechargeable battery.

If you use the notebook in a normal office situation, run it from the mains using the power adapter.

## Unpacking and checking the delivery

- ► Unpack all the individual parts.
- ► Check the delivery for damage incurred during transportation.
- ► Check whether the delivery agrees with the details in the inventory.

Should you discover that the delivery does not correspond to the inventory, notify your local sales outlet immediately.

Do not discard the original packing material of the devices. Keep the original packing material in case you need to ship the equipment again.

## Selecting a location

Select a suitable location for the notebook before setting it up. Consider the following points when looking for a location:

- Do not place it on a soft surface (e.g., a carpet or soft furnishings). The space between the notebook's feet must be clear.
  Place the notebook on a stable, flat, nonslippery surface. In view of the multitude of different finishes used on furniture, it is possible that the rubber feet of the notebook will mark the surface they stand on.
- Never place the power adapter on a heat-sensitive surface.
- The notebook and the power adapter should be at least 200 mm apart.
- Keep other objects 100 mm away from the notebook and its power adapter to ensure adequate ventilation.
- Never cover the fan intake or exhaust openings of the notebook or the power adapter.
- Do not expose the notebook to extreme environmental conditions.
  Protect the notebook from dust, humidity, and heat.
- For wireless data transfer, you must align the notebook's infrared interface with that of the partner device (e.g. PC). The devices must not be more than one metre apart.

# Connecting the power adapter

Please take note of the information in the section "Selecting a location".

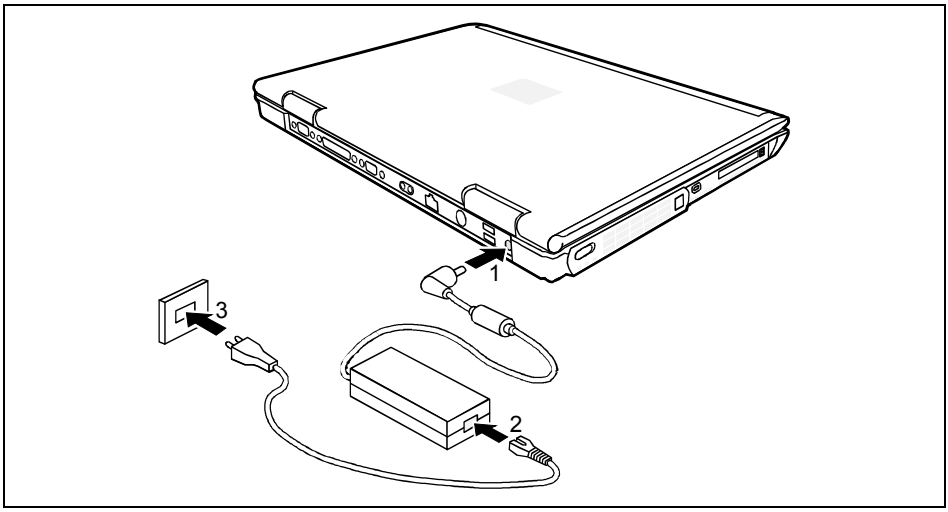
The power cable supplied conforms to the requirements of the country in which you purchased your notebook. Make sure that the power cable is approved for use in the country in which you intend to use it.

The power adapter's AC cord should only be connected to a mains outlet if the notebook is connected to the power adapter.

Upon delivery, the battery can be found in the battery compartment.

Do not use the power adapter for other notebooks or devices.

Do not use a power adapter that is not specially intended for this notebook.



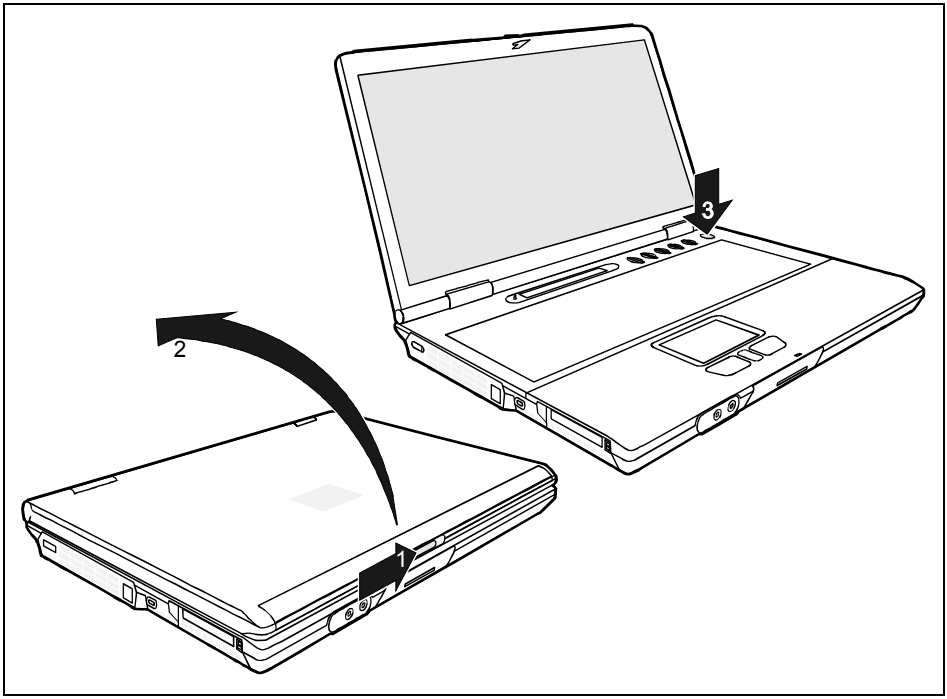

- ► Connect the power adapter cable to the DC jack (DC IN) of the notebook (1).
- ► Connect the power cable to the power adapter (2).
- ► Plug the power cable into the mains supply (3).

The battery indicator of the notebook appears in the status indicator panel. The notebook battery is charging.

# Switching on the notebook for the first time

When you switch on your notebook for the first time, the supplied software is installed and configured. You should plan some time for this, as this process must not be interrupted.

Your operating system is pre-installed on the hard disk to facilitate the procedure when you use your notebook for the first time.




► Slide the release button in direction of the arrow (1) and open the LCD screen (2).

► Press the Suspend/Resume button to switch on the notebook (3).

The power-on indicator ⏻ of the notebook appears in the status indicator panel.

After switch-on a self-test (POST, Power On Self Test) is automatically carried out. Never switch the notebook off during the self-test.

Leave the external power adapter connected to your notebook during the initial installation.

Once the installation has been started, the notebook must not be switched off!

During installation, the notebook may only be rebooted when you are requested to do so!

► During installation, follow the instructions on screen.

Consult the operating system manual if there is anything unclear about the requested input data.

If there is installed on your notebook a Windows operating system the "Drivers°&°Utilities" CD is included in the delivery scope. You will find further information on the system, drivers, utilities, updates, manuals etc. on this "Drivers & Utilities" CD.

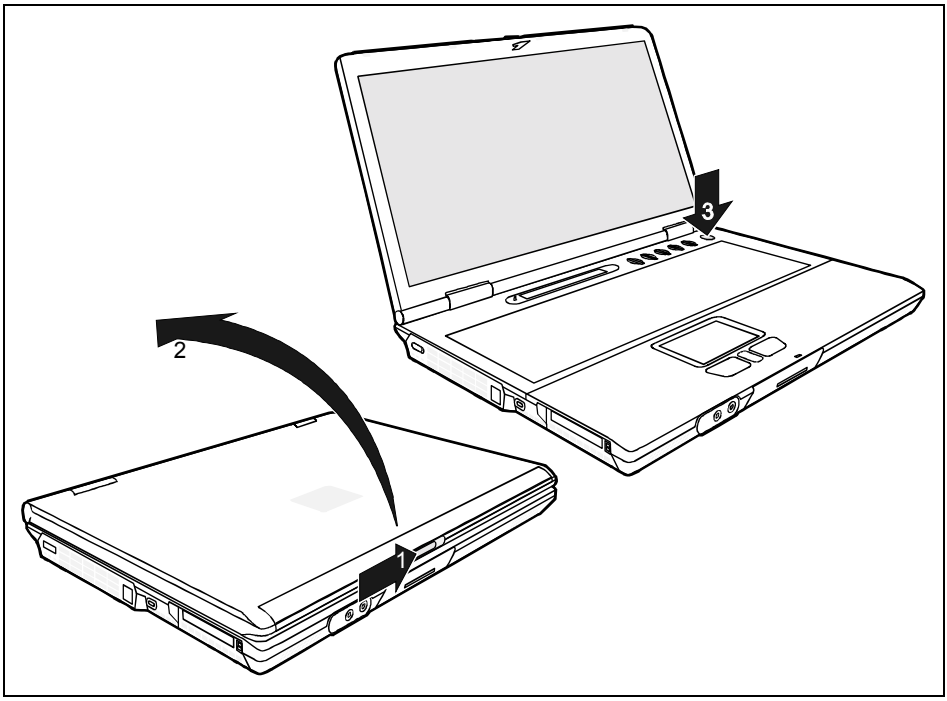
# Working with the notebook

This chapter describes the basics for operating your notebook.

Please see the "Connecting external devices" chapter for instructions on how to connect devices such as a mouse and a printer to the notebook.

Please take note of the information in the "Important notes" chapter.

## Switching on the notebook



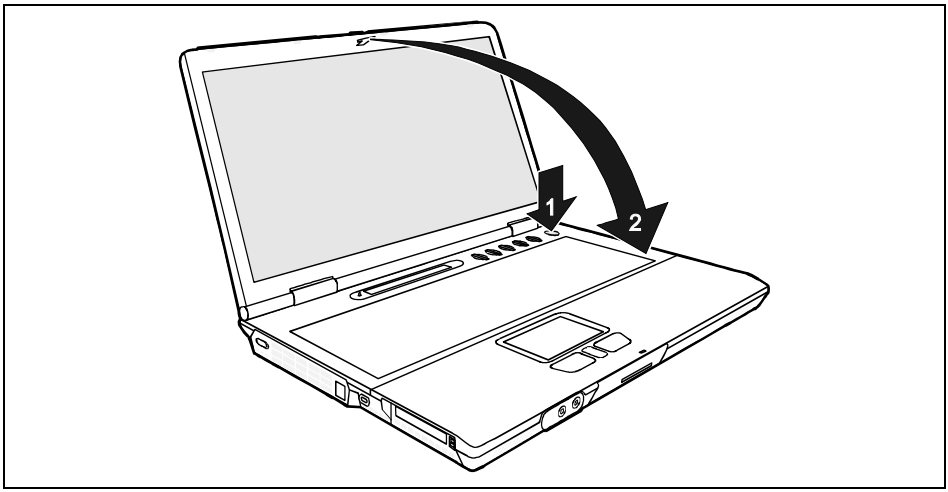

- ► Slide the release button in direction of the arrow (1) and open the LCD screen (2).
- ► Press the Suspend/Resume button to switch on the notebook (3).

The power-on indicator ⏻ of the notebook appears in the status indicator panel.

Under Windows you can configure the Suspend/Resume button under *Start - Settings - Control Panel - Power Options - Power Options Properties - Advanced*.

If you have assigned a password, you must enter this when requested to do so, in order to start the operating system password.

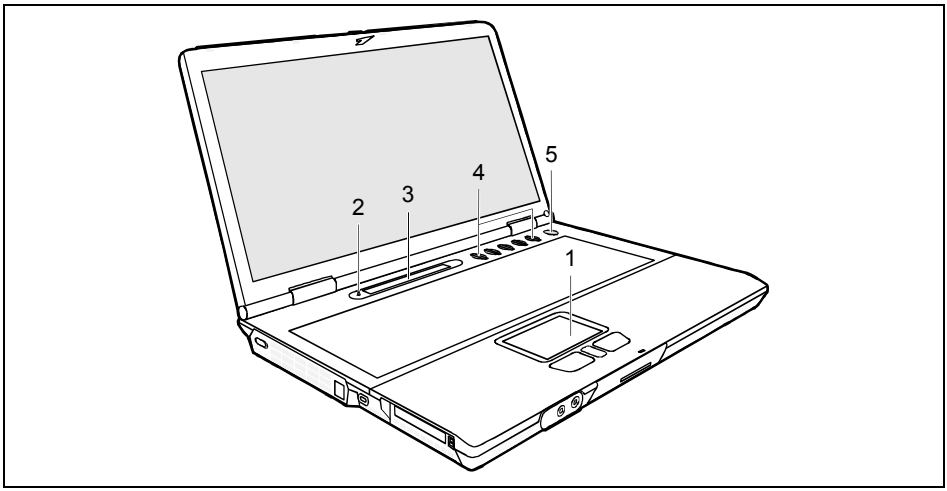
# Switching the notebook off




- ► Close all programmes and shut down your operating system (please see operating system manual).
- ► If the notebook does not switch off automatically, press the Suspend/Resume button for approx. 3-4 seconds (1).
- ► Close the LCD screen of the notebook (2) so that it locks into place.

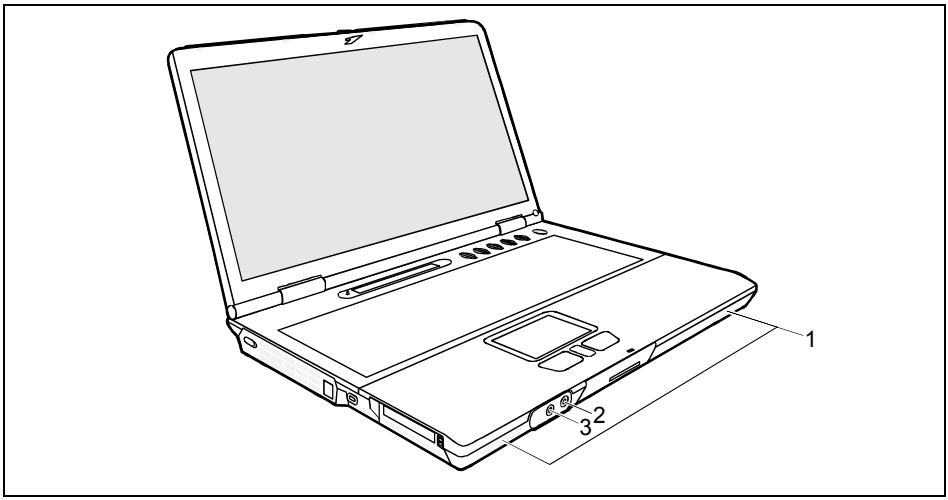
# Ports, indicators and operating elements

## Interior view



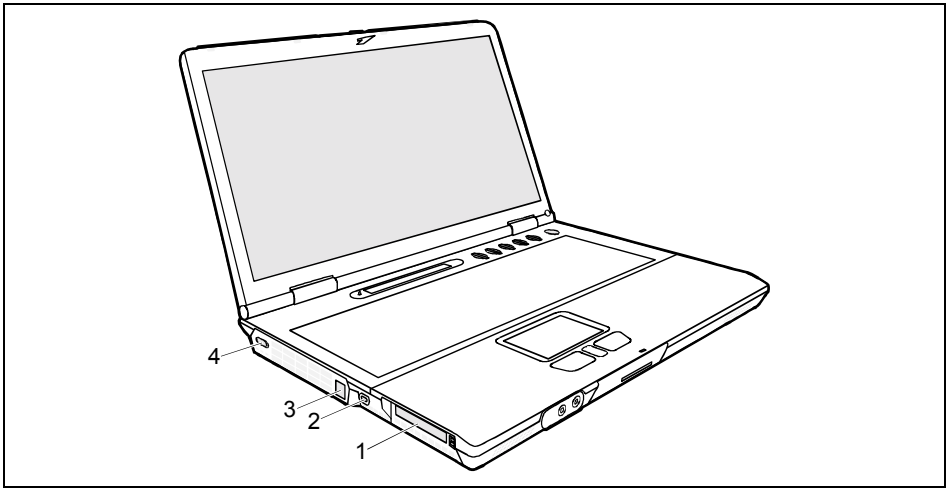

1 = Touchpad
2 = Closed cover switch
3 = Display field
4 = Application/player buttons
5 = Suspend/Resume button

## Front



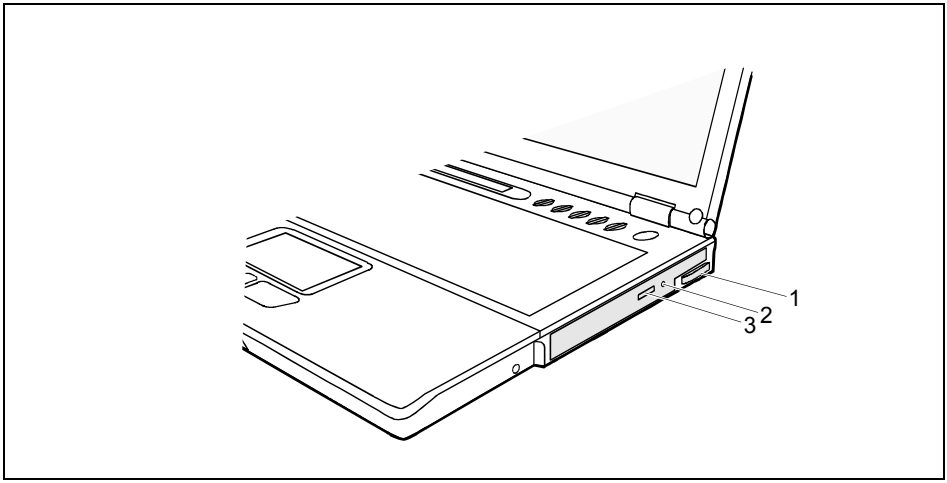

1 = Built-in loudspeakers
2 = Port for external microphone
3 = Port for headphones

## Left side panel




1 = PC card slots
2 = Kensington Lock device
3 = Modem port
4 = On/Off switch for Wireless LAN

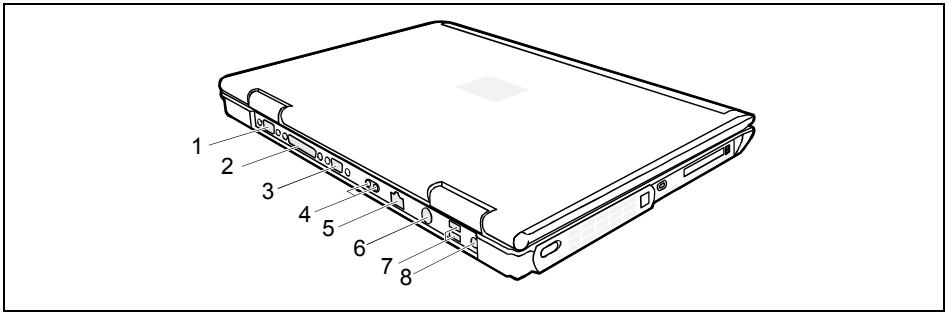
## Right side panel




Optical drive:

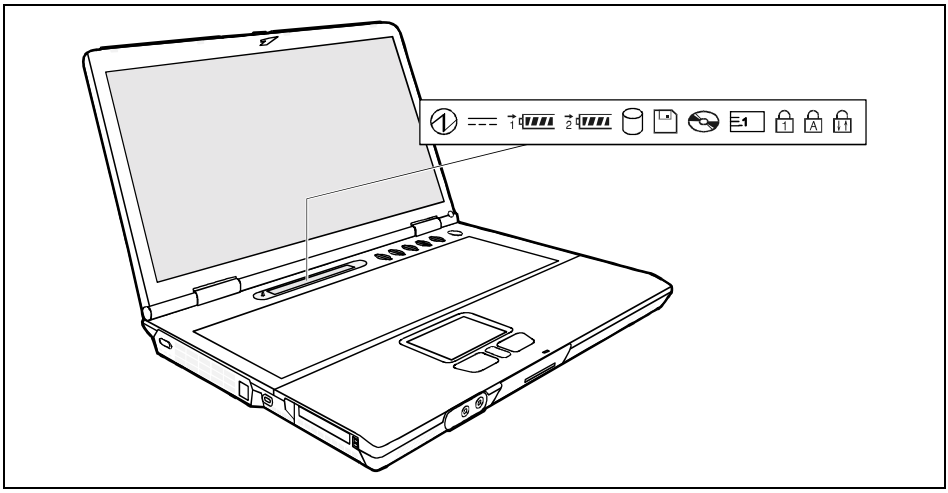
1 = Removal lever
2 = Opening for manual ejection
3 = Insert/Eject button

## Back panel




1 = Serial port
2 = Parallel port
3 = External monitor connector
4 = Infrared interface
5 = LAN connector
6 = PS/2 port (for keyboard or mouse)
7 = USB ports
8 = Port for power adapter

# Display field



The meanings of the symbols are as follows:

**Power-on indicator**

- The indicator lights up: The notebook is on.
- The indicator flashes (1 second on / 1 second off):
  The notebook is in Standby mode / Suspend to DRAM mode.
- The indicator is dark:
  The notebook is switched off or in Suspend to Disk mode.

**Power indicator**

The power adapter is supplying power to the notebook.

**Charging indicator, battery**

- The indicator lights up: The battery is charging.
- The indicator blinks: The battery is too hot or too cold for charging.

**Battery indicators**

The charging state of the batteries is shown with the two battery indicators. 1 indicates that the information applies to the first battery in the battery compartment. 2 indicates that the information applies to the second battery in the module bay.

indicates that the battery is 0%-25% charged.

indicates that the battery is 25%-50% charged

indicates that the battery is 50%-75% charged.

indicates that the battery is 75%-100% charged.

Indicates that the battery is too hot or too cold for charging.

The flashing frame indicates that the battery is flat.

**Hard disk indicator**

The hard disk drive of the notebook is being accessed.

**Optical drive indicator**

The indicator is lit when the CD/DVD in the optical drive is being accessed.
You must not remove the CD/DVD from the drive when this indicator is lit.

**PC card indicators**

The system accesses a PC Card.

**NumLK indicator (Num Lock)**

The Num key has been pressed. The numeric keypad is activated. The system will display the symbols that are printed on the front of the keys.

**CapsLK indicator (Caps Lock)**

The ⇩ key has been pressed. All the characters you type appear in uppercase. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.

**Scroll indicator (Scroll Lock)**

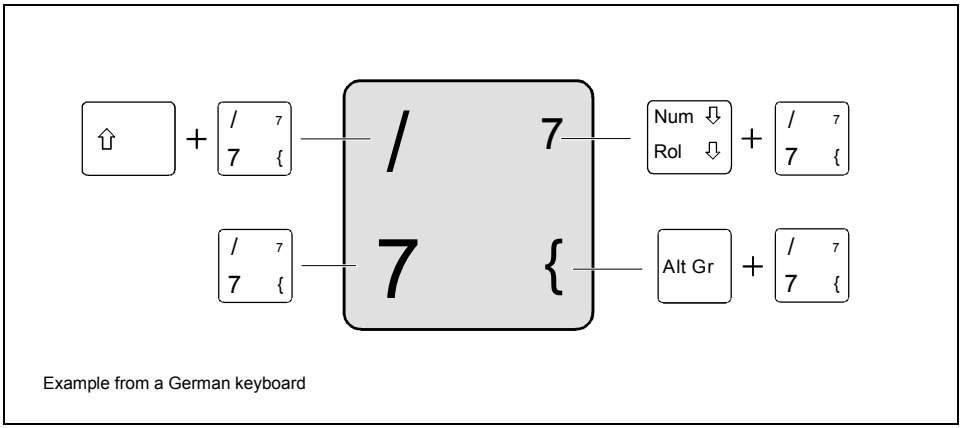
The key combination Fn + Scr has been pressed. The effect this key has varies from programme to programme.

# Keyboard

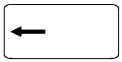
The keyboard of your notebook is subject to continuous wear due to normal use. The keyboard markings are subjected to particularly high loads. The keyboard markings can wear off in the course of using the notebook.

The following description of keys refers to Windows. Additional functions supported by the keys are described in the relevant manuals supplied with your application programmes.

The figure below shows how to access the different characters on keys with overlaid functions. The example applies when the CapsLK indicator is not lit.

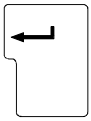



Example from a German keyboard

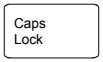


**Backspace key**
The Backspace key deletes the character to the left of the cursor.

**Tab key**
The Tab key moves the cursor to the next tab stop.



**Enter key (return)**
The enter key terminates a command line. The command you have entered is executed when you press this key.

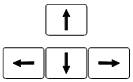



**Caps Lock key**
The Caps Lock key activates uppercase mode (CapsLK indicator lit). The Caps Lock function causes all the characters you type to appear in uppercase. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.
To cancel the Caps Lock function, simply press the Caps Lock key again.

**Shift key**
The Shift key causes uppercase characters to appear. In the case of overlay keys, the character on the upper left of the keycap appears when that key is pressed.

**Alt Gr key**
The Alt Gr key allows one to type the characters printed on the lower right of the keycaps (e.g. { in the case of the 7 key on the German keyboard).

**Fn key**
The Fn key enables the special functions indicated on overlay keys (see "Key combinations").
If the external keyboard does not feature an Fn key, you can simultaneously press the Ctrl + Alt Gr keys or the Ctrl + Alt keys.



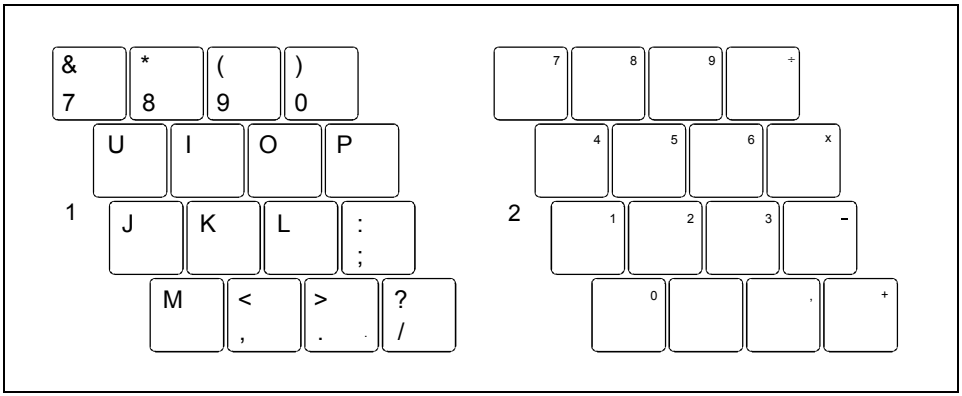
**Cursor keys**
The cursor keys move the cursor in the direction of the arrow, i.e. up, down, left, or right.

**Pause key**
The Pause key temporarily suspends display output. Output will resume when you press any other key.

**Start button** (under Windows)
The Start key invokes the Windows Start menu.

**Menu button** (under Windows)
The Menu key invokes the menu for the marked item.

**Numeric keypad**




1 = Characters enabled when Num Lock indicator is not lit (see "Display field").
2 = Characters enabled when Num Lock indicator is lit (see "Display field").

## Key combinations

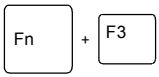
The following description of key combinations refers to functions when using Microsoft Windows. Some of the following key combinations may not function in other operating systems and with some device drivers.

Other key combinations are described in the relevant manuals supplied with your application programmes.

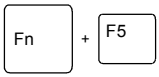
Key combinations are performed as follows:

- ► Press and hold the first key in the combination.
- ► While holding the first key down, press the other key or keys in the combination.

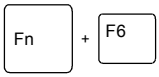
If the external keyboard does not feature an Fn key, you can simultaneously press the Ctrl + Alt Gr keys or the Ctrl + Alt keys.



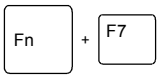

**Switching the loudspeakers on/off**
This key combination switches your device's integrated loudspeakers off and on.



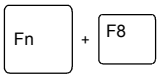

**Enlarge MS-DOS screen**
This key combination enlarges the screen in the MS-DOS mode to the full-screen mode or switches it back to the normal display mode.



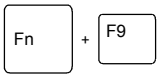

**Decreasing screen brightness**
This key combination decreases screen brightness.



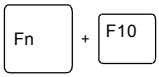

**Increasing screen brightness**
This key combination increases screen brightness.




**Reducing the volume**
This key combination reduces the volume of the integrated loudspeakers.

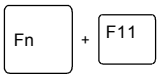



**Increasing the volume**
This key combination raises the volume of the integrated loudspeakers.




**Switching between internal and external screen**
If an external monitor is connected, the monitor on which the output is to be displayed can be selected with this key combination. You can opt to use:

- just the notebook's LCD screen
- just the external monitor
- both the LCD screen and the external monitor




**Switching the video output on/off**
Your notebook does not support this function.

**Backtab (Shift+Tab)**
This key combination moves the cursor back to the previous tabular stop.

**Carrying out a warm boot**
This key combination triggers a reset and warm-boots the notebook. First hold down the Ctrl and Alt key, and then press the Del key. Under Windows 98, Windows 2000, Windows Me, Windows NT and Windows XP the Task Manager appears first. Then you must press all three keys again to re-boot.

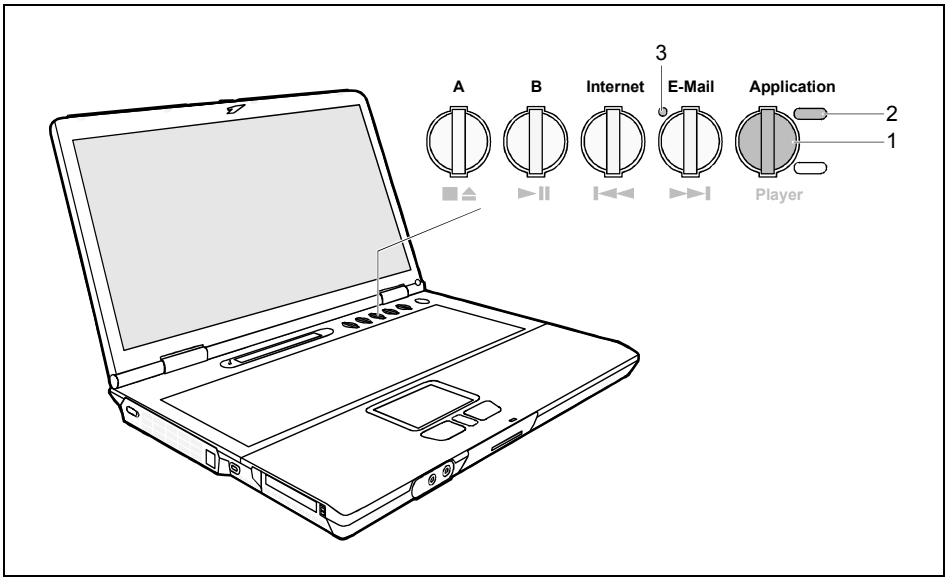
# Application/player buttons

The buttons next to the status indicator panel have functions that differ according to the setting of the function select switch (Application or Player).

i

You can configure the application buttons using the *Application Button* program. This program and a PDF file with a detailed description are provided under *Start - Control Panel - Application Panel*.

## Application buttons




► Press the function selection switch (1) until the Application indicator (2) lights up.

The application buttons are now active:

**A button**

You can configure this button so that an application or Internet website you have selected is started by pressing the button.

**B button**

You can configure this button so that an application or Internet website you have selected is started by pressing the button.

**Internet button**

With this button you can start the standard internet browser for your system.

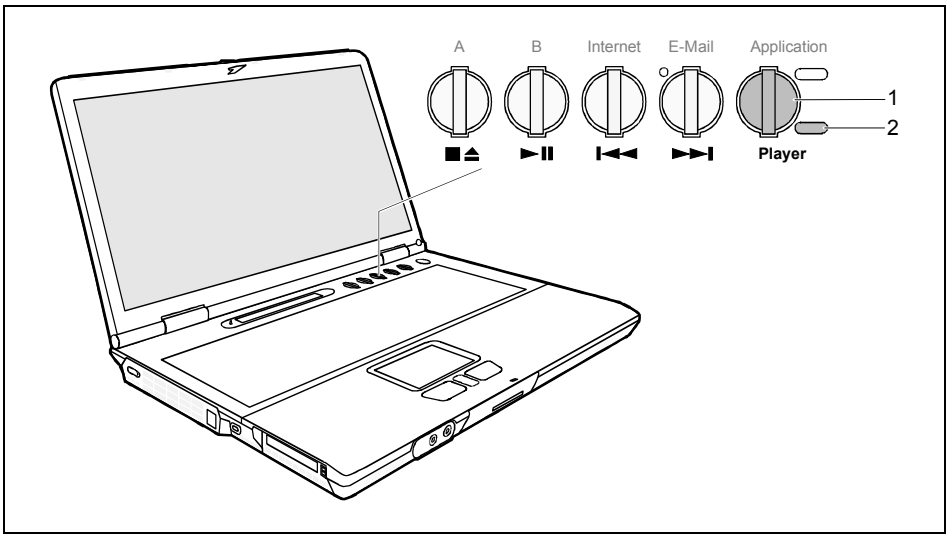
You can also freely program this button.

**E-mail button**

Use this button to start the standard e-mail programme for your system. The e-mail indicator (3) lights up when an e-mail has been received.

You can also freely program this button.

## Player buttons




► Press the function selection switch (1) until the Player indicator (2) lights up.

The player buttons are now active:

**Stop**

You stop audio CD replay with this button.

**Play/Pause**

You start audio CD replay with this button.

**Previous Track**

Use this button to skip to the forward title.

**Next Track**

Use this button to skip to the next title.

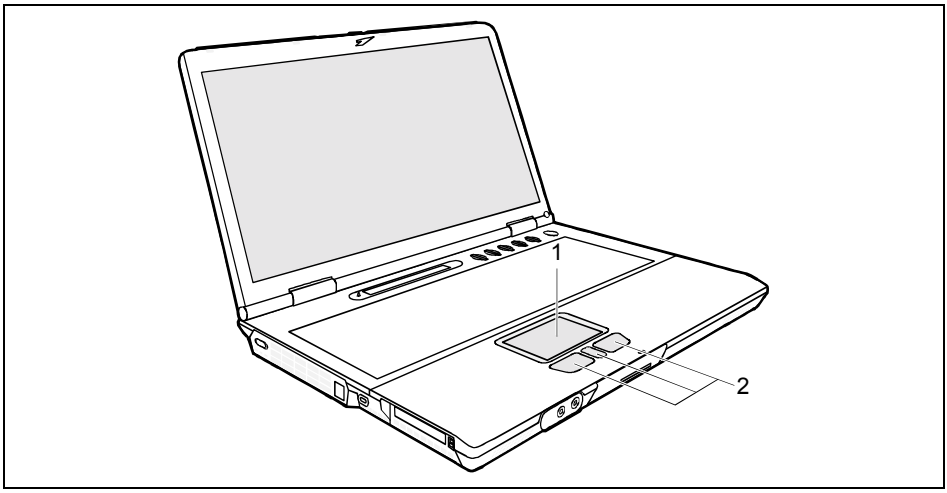
# Touchpad and touchpad buttons

Keep the touchpad clean, protect it from dirt, liquids, and grease.

Do not use the touchpad if your fingers are dirty.

Do not rest heavy objects (e.g. books) on the touchpad or the touchpad buttons.

The touchpad enables you to move the mouse pointer on the screen. The touchpad buttons allow the selection and execution of commands. They correspond to the buttons on a conventional mouse.




1 = Touchpad

2 = Touchpad buttons and touchpad scroll buttons

**Moving the pointer**

► Move your finger on the touchpad.

The pointer will move accordingly.

**Selecting an item**

► Move the pointer to the item you wish to select.

► Tap the touchpad once or press the left button once.

The item will be selected.

**Executing a command**

► Move the pointer to the field you wish to select.

► Tap the touchpad twice or press the left button twice.

The command will be executed.

**Dragging an object**

► Move the pointer to the item you wish to select.

► Select the desired object, and leave your finger on the touchpad.

► Drag the object to the desired position.

► Lift your finger from the touchpad.

The item will be moved.

**Scrolling up**

► Press the upper side of the touchpad scroll button to scroll up.

The information/texts above the display area appear.

**Scrolling down**

► Press the lower side of the touchpad scroll button to scroll down.

The information/texts below the display area appear.

# LCD display panel

## Information on LCD monitor

High-quality TFT monitors are installed in notebooks from Fujitsu Siemens Computers GmbH. The specification of the monitor resolution indicates how many pixels can be displayed. For example, "XGA" stands for 1024 x 768 pixels. Each pixel consists of three so-called subpixels of the colours red, green and blue. As a result, an XGA monitor consists of 1024 x 768 x 3 = 2,359,296 subpixels.

The standard of production techniques today cannot guarantee an absolutely fault-free monitor. A few isolated constant lit or unlit pixels may be present. To ensure the highest possible quality, Fujitsu Siemens Computers uses only monitors that at least comply with the standard DIN ISO 13406-2 (Class II).

TFT monitors are operated with background lighting. The luminosity of the background lighting can decrease during the period of use of the notebook. The brightness of your monitor can be set individually with the brightness control keys of the keyboard.

## Display settings

**Setting the desktop area**

You can change the screen resolution under *Start - Settings- Control Panel - Display - Settings* and then selecting from the *Resolution* field.

**Adjusting the font size**

Under *Start - Settings - Control Panel - Display - Settings* you can choose between a larger and a smaller font in the *Font size* field.

**Setting the display brightness**

You can adjust the brightness of your LCD screen with the keys Fn and F6 or Fn and F7: With Fn and F6, screen brightness will be reduced and with Fn and F7 increased.

**Display on the LCD screen and an external monitor**

Your notebook supports the simultaneous display on the LCD screen and an external monitor. If the picture does not appear correctly on the LCD monitor, press the key combination Fn + F10 several times, or switch the external monitor off and then on again.

**Adjusting the speed of the mouse pointer**

Under Windows you can change the speed of the mouse pointer under *Start - Settings - Control Panel - Mouse* and clicking on the *Motion* tab.

# Battery

The battery is one of the most important components of your notebook. When not plugged into a mains outlet, the notebook runs on its built-in battery. You can increase the life of the battery by caring for the battery properly. The average service life of a properly cared-for battery is approx. 500 charging/discharging cycles.
You can extend the battery life by taking advantage of the available energy saving functions.

Only use batteries released for your notebook.

Take care not to drop the batteries or otherwise damage their casing (fire risk).

If the rechargeable batteries are defective, they must not be used.

Do not touch the contacts of the batteries.

Never interconnect the positive and negative terminals of a battery.

Used batteries must be disposed of in accordance with local regulations (special waste).

Observe the information on battery storage in the "Important notes" chapter.

## Charging the battery

The battery indicator displays the remaining battery charge (see the section "Display field"). When you switch on the notebook, it takes a few seconds before the battery status is displayed.

You can charge the battery by connecting the notebook to the power adapter (see "Connecting the power adapter").

The battery can only be charged when the ambient temperature is between 5°C and max. 35°C.

A battery will fully charge in approximately 3 hours in a notebook that is switched off.

Work in the battery mode until an acoustic warning prompts you to recharge and the battery indicator begins to flash. The notebook battery should not be charged before this point.

If you do not connect the power adapter within approximately five minutes of the signals described above, your notebook will automatically switch off.

## Monitoring the battery charging level

The remaining battery charge is indicated by the battery symbol in the status indicator panel (see the section "Display field"). When you switch on the notebook, it takes a few seconds before the battery status is displayed.

During mobile operation you can also use a "battery charge meter" for energy-saving monitoring under Windows.
A battery icon is shown in the taskbar. When you position the pointer on the battery icon, the charging level is shown in percent.

## Inserting and removing the battery

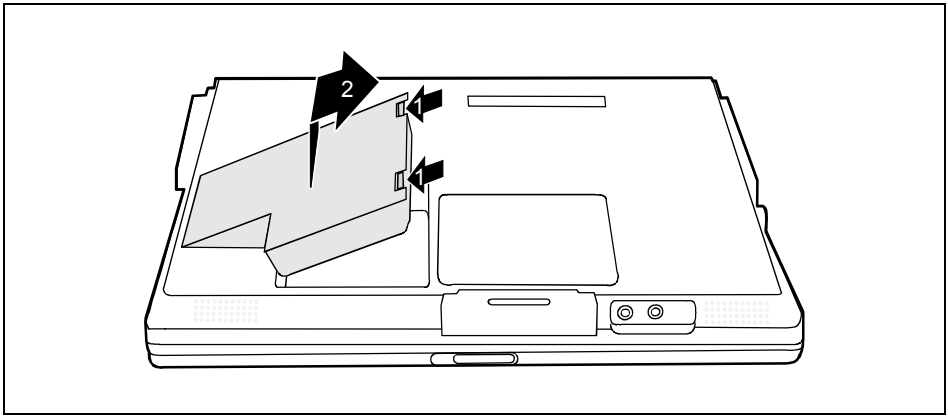
Only use batteries released for this notebook.

Never use force when inserting or removing a battery.

Make sure that no foreign objects enter the slots.

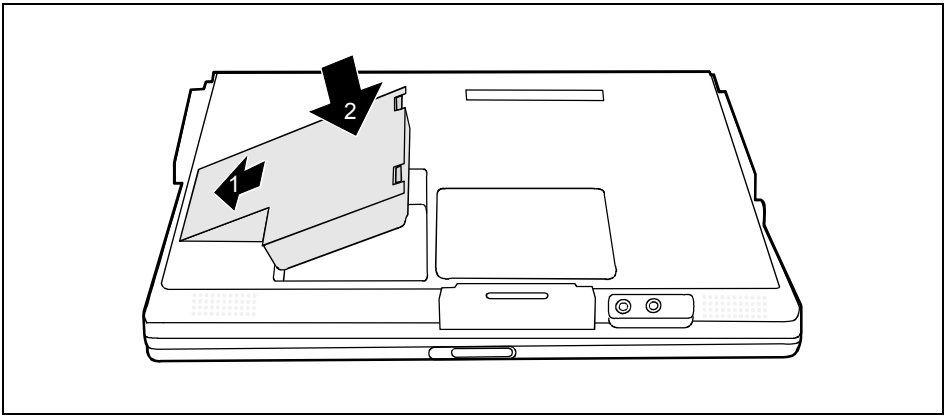
- ► Switch off the notebook and all devices connected.
- ► Place the notebook on a flat surface.
- ► Close the LCD screen so that it locks into place.
- ► Unplug the power adapter from the mains outlet.
- ► Disconnect all cables connected to the notebook.
- ► Turn the notebook over.

### Removing the battery




- ► Press the two locking lugs (1), hold them down and lift the battery somewhat.
- ► Pull the battery out of the battery compartment (2).

### Installing the battery




► Position the battery at the edge of the casing (1).

► Push the battery into the battery slot until you feel it locking into place (2).

# Using the power-management features

The notebook uses less power when the power management features are enabled. You will then be able to work longer when using the battery before having to recharge it.

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If you are connected to a network or use the integrated modem, PC LAN card, or PC modem card, we advise against enabling an energy saving mode. This could lead to an interruption of your network connection.

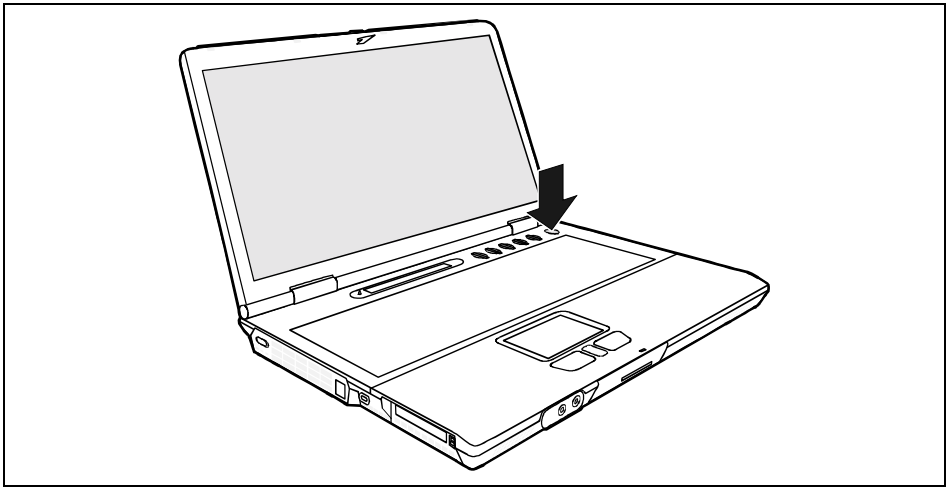
When not using the notebook for long periods of time, first end the energy saving mode, then switch off the notebook. Never switch the notebook off with the Suspend/Resume button while the notebook is in one of the energy-saving modes.

If your notebook is in an energy-saving mode:

- Do not connect any external devices.
- Do not disconnect any external devices.
- Do not attempt to switch the notebook on if the built-in battery is flat.
- Do not add or remove RAM.
- Do not add or remove a PC card.
- Do not replace or remove the battery.

## Standby mode

Depending on the settings in the BIOS Setup and operating system
- the computer switches into a standby mode
- the computer switches off when the key combination is held down for more than four seconds.



► Press the Suspend/Resume button to switch the Standby mode on and off.

In the Standby/Suspend-to-DRAM mode the content of your main memory is saved by continuing to supply the main memory with power, while the processor, monitor, hard disk and other internal components are switched off. This mode is activated whenever you press the Suspend/Resume button. Saving is also triggered when you do not make an entry on your notebook for a certain time. When you resume work, your notebook returns to the place at which you discontinued working.

Do not use the Standby mode when you will not be using the notebook for a long time, switch it off instead.

If you use an integrated LAN/Modem, a PC-LAN card or a PC modem card, we do not recommend switching over to the Standby mode, as this may lead to an interruption in the network connection.

When you press the Suspend/Resume button for more than 4 seconds, your notebook will switch off.

## Operating systems with ACPI (Windows 2000 and Windows XP)

If an operating system with ACPI (Advanced Configuration and Power Management Interface) is installed on your notebook, you can set the power management fetaures via the operating system (e.g. *Standby*, *Hibernate mode* and *LCD off*).

Settings for energy-saving functions in the *BIOS Setup* are not taken into account by operating systems with ACPI.

#### Settings under Windows 2000

You can set the power-management features for your notebook under *Start - Settings - Control Panel - Power Options*.

Under Windows 2000 the *Hibernate mode* is switched off in the default setting.

Under Windows 2000 the required memory space on the hard disk is not reserved until you make the required Hibernate mode settings.

Additional information on this service programme is contained in your operating system help files.

#### Windows XP

You can set the power-management features for your notebook under *Start - Control Panel - Power Options*.

Under Windows XP the *Hibernate mode* is switched off in the default setting.

Under Windows XP the required memory space on the hard disk is not reserved until you make the required Hibernate mode settings.

Additional information on this service programme is contained in your operating system help files.

# Module

The design of your notebook enables the flexible use of notebook batteries and drives. The following modules can be operated in the module slot of your notebook:

- CD-ROM drive
- DVD-ROM drive
- Hard disk drive
- Combo drive (CD-RW/DVD)
- Second battery
- Weight Saver

Only use modules designed for your notebook.

Do not use force when installing or removing the module.

Make sure that no foreign objects enter the module bay.

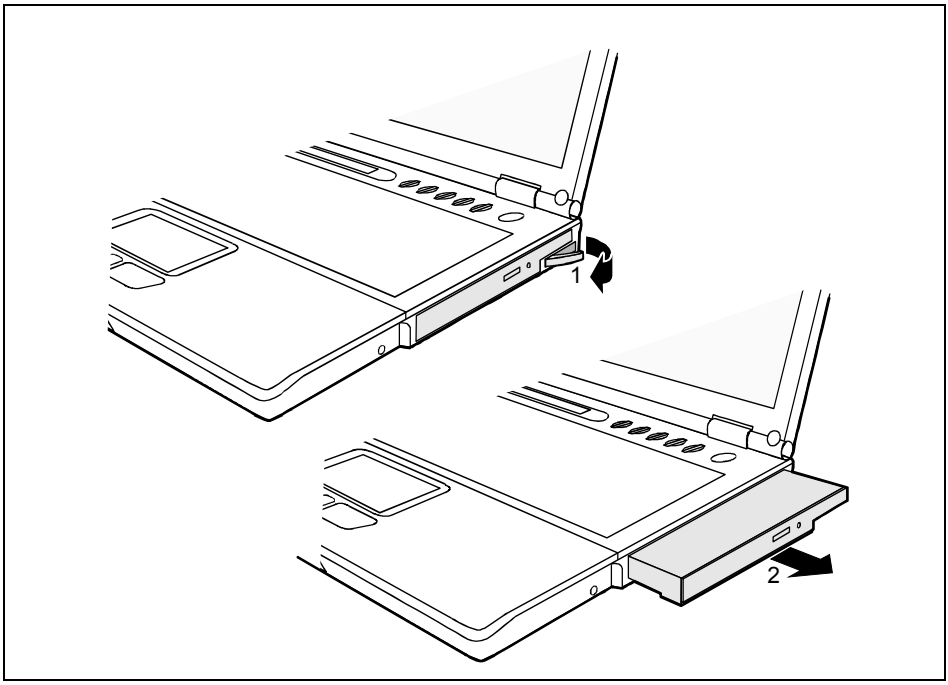
You can replace modules during operation. This means you do not need to switch off the notebook.

To replace a module, simply click on the corresponding icon in the taskbar and then on *Exit* or *Select - Exit*.

Then you can simply remove the module.

## Removing module

► Place the notebook on a flat surface.

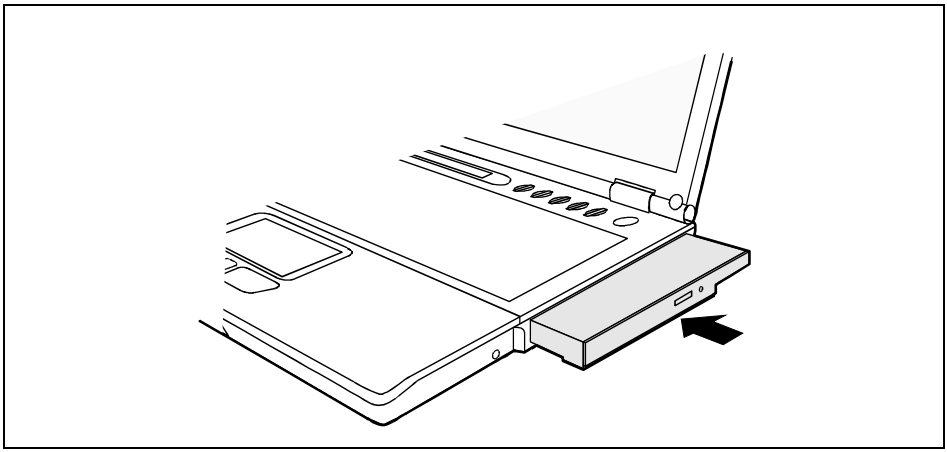



► Pull the eject lever (1) in the direction of the arrow up to the stop.

The module now extends somewhat beyond the casing.

► Pull the module (2) out of the module bay.

## Installing module

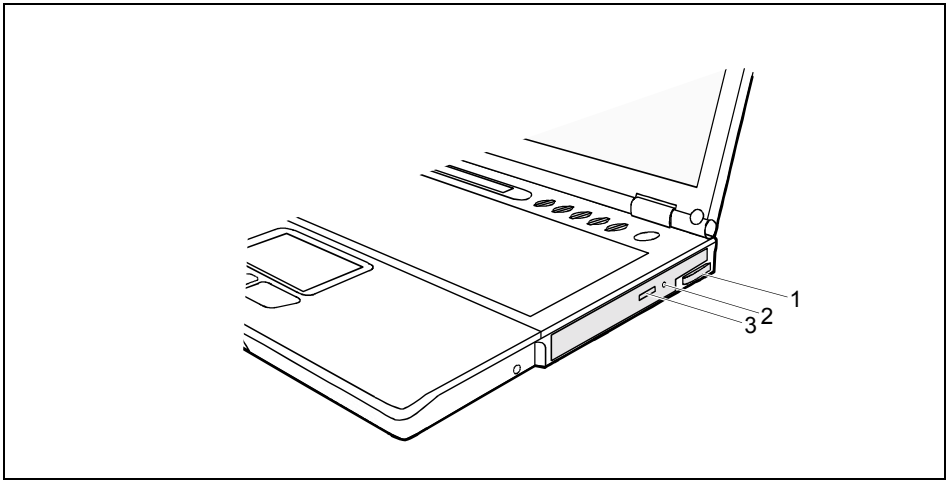


- ► Place the module into the module bay so that the contacts enter first.
- ► Push the module into the module bay until you feel it locking into place.

# Optical drive

Generally your notebook is delivered with an optical drive. Depending on the model, your notebook is delivered with a CD-ROM drive, a DVD-ROM drive or a combo drive (CD-RW/DVD).

This product contains an LED classified as a CLASS 1 LASER, and may therefore not be opened.




1 = Removal lever
2 = Opening for manual ejection
3 = Insert/Eject button

## Handling CD/DVDs

Avoid touching the surface of a CD/DVD. Handle CDs/DVDs only by their edges!

Always store CDs/DVDs in their cases. Thus you avoid dust contamination, scratches, bending or other damage.

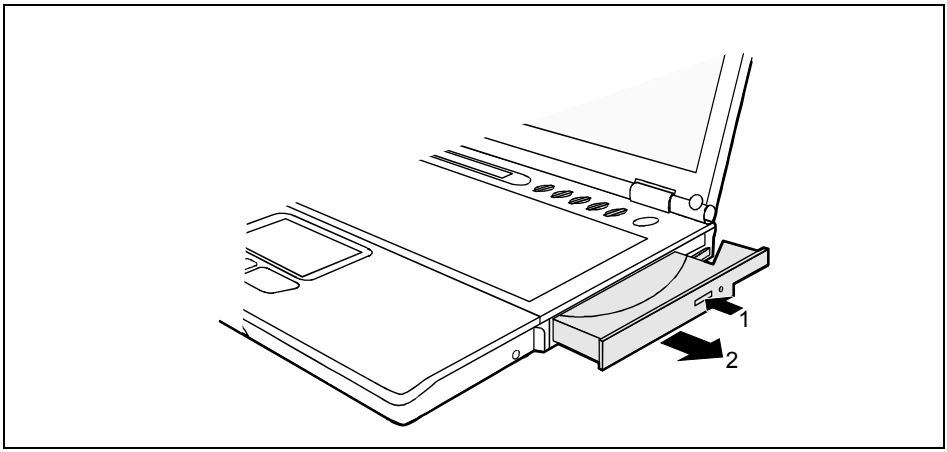
Protect your CDs/DVDs from dust, mechanical vibration and direct sunlight!

Avoid storing a CD/DVD in areas subject to high temperatures or humidity.

When using CDs/DVDs of poor quality vibrations and reading errors may occur.

**Inserting or removing a CD/DVD**

The notebook must be switched on.




► Push the insert/eject button (1).

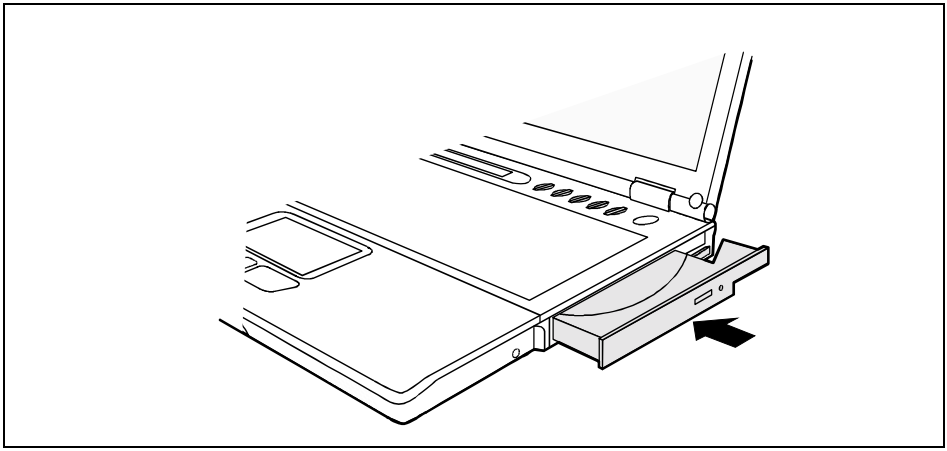
The drive tray will open.

► Pull the drive tray all the way out (2).

► Place the CD/DVD in the drive tray with the label facing upwards.

or

► Take out an inserted CD/DVD.

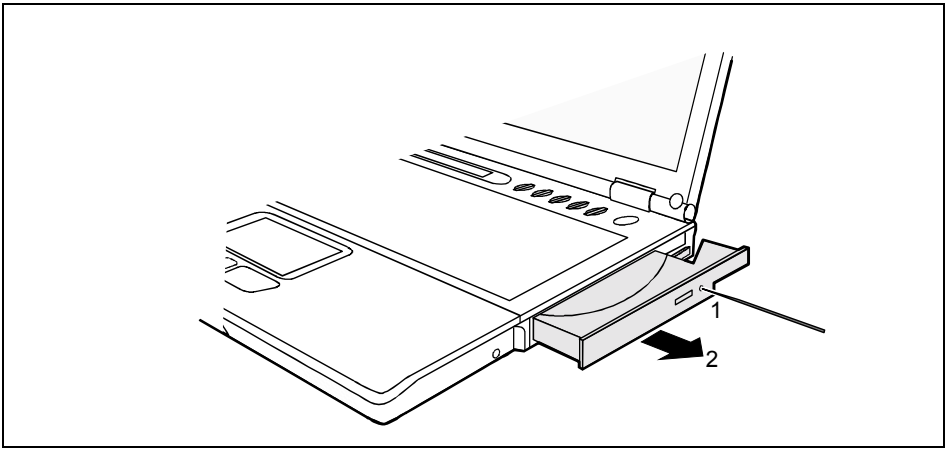


► Push in the drive tray until you feel it lock into place.

## Manual removal (emergency removal)

In the event of a power failure or damage to the drive it may be necessary to manually remove the CD/DVD.

► Switch the notebook off.




► Press a pen or a piece of wire (e.g. a paperclip) firmly into the opening (1).

The drive tray is unlocked.

► Pull the drive tray all the way out (2).

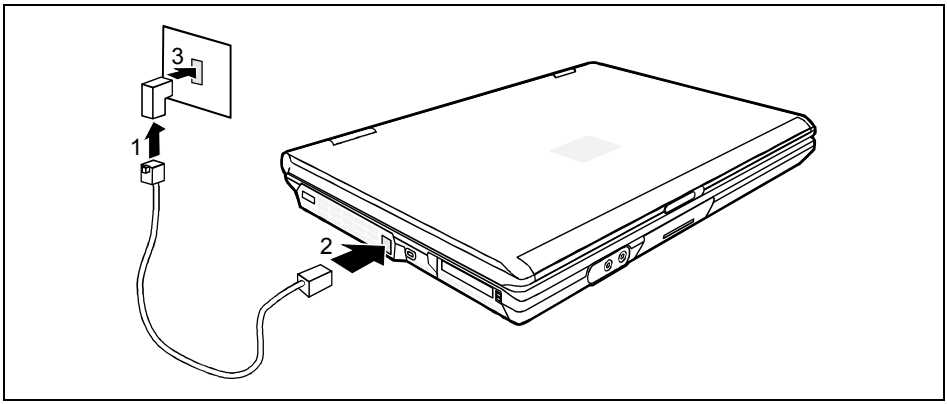
# Integrated 56k modem

The integrated 56k modem supports data communication applications, such as:

- Modem operation: High-speed downloads at up to 56,000 bit/s (V.90 / V.92).
- Fax mode: Transmitting and receiving at up to 14,400 bit/s

The modem has been inspected in agreement with the guideline TBR-21.

## Connecting notebook modem to telephone connection




- ► Connect the modem cable supplied to the country-specific telephone adapter (1).
- ► Connect the modem cable to the modem port of the notebook (2).
- ► Connect the modem cable to your telephone wall socket (3).

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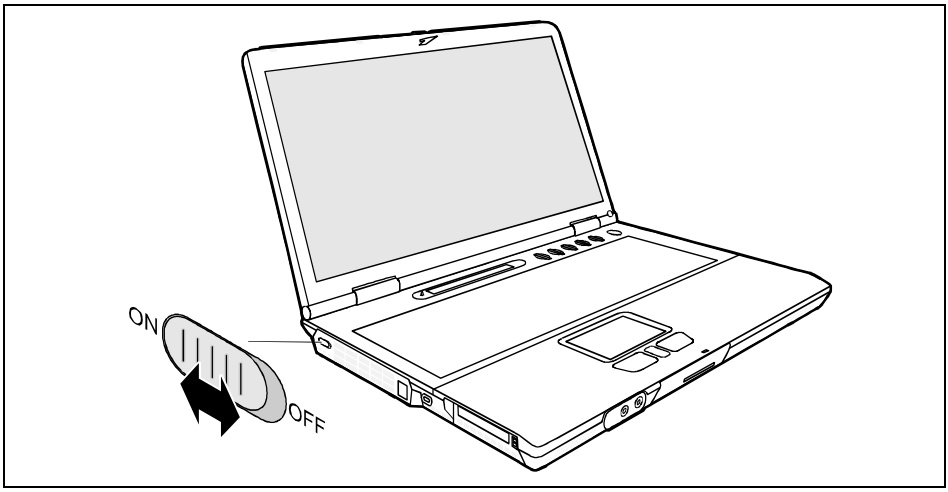
If you attach your modem on a TAE-N-connector the phone respectively data cable is busy. The cable cannot be used for other communication devices at the same time. Pull the modem plug out of the TAE-N-power socket after the data transfer, because also with connected cable no other communication devices can be used.

# Wireless LAN

Depending on the device variant, a Wireless LAN network card may be installed in your notebook.




► Slide the ON/OFF switch into the "ON" position to activate the radio component.

or

► Slide the ON/OFF switch into the "OFF" position to deactivate the radio component.

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Detailed information is contained in the online help and in the PDF file on your wireless LAN software.

Please take note of the information in the section "Additional safety precautions for devices with wireless LAN", "Important notes" chapter.

## Wireless network as per IEEE 802.11 standard

The wireless LAN network card operates in accordance with the IEEE 802.11 standard. The 2.4 GHz ISM frequency band is used as a communications medium. The wireless networks operating in accordance with 802.11 can easily be connected to existing Ethernet networks. With the exception of a few additional parameters, wireless network cards that operate in accordance with 802.11 are one system with a normal Ethernet card. This means that you can use all protocols via a 802.11 wireless network just as with a cable-connected Ethernet (IP, IPX, NetBIOS,...). The only difference is that you need not lay cables between the computers. The number of all wireless LAN stations that can reach each other directly is generally referred to as a cell. The IEEE standard offers two operating modes - the adhoc mode (peer-to-peer) and the infrastructure mode.

### Adhoc mode

A wireless LAN in the adhoc mode, also called peer-to-peer mode, consists of a single closed cell. Adhoc wireless networks result when a workgroup comes together with its systems and would like to interconnect these for data exchange. Any number of systems can be added to this type of network and can leave it again.

So that several adhoc wireless networks do not interfere with each other in radio traffic, there is a unique network name, the SSID (Service Set Identifier). The SSID is used for addressing so that a data packet can always be assigned to a certain cell.

If you want to join an existing cell, you require the network name (SSID), which you enter in the settings for the network card. The driver searches for a wireless network with this ID during start-up. When the driver has found a wireless network, it connects to it and you can communicate with the systems in this wireless network. If two cells are very close together, the channels of these networks should be 4 to 5 channels apart.

### Infrastructure mode

In the infrastructure mode, a base station, referred to as an AccessPoint, exists in addition to the mobile stations. In the infrastructure mode the AccessPoint assumes the function of a "guard". In contrast to the adhoc mode, each system must log on to the AccessPoint before it is allowed to exchange data in the cell.

Another task of the AccessPoint is the connection of the cells with a cable-connected Ethernet. As due to the logon requirement, the AccessPoint knows at all times exactly which stations are on the radio side, it can decide exactly which data must be sent to it and which don't. This process is also referred to as bridging.

The range of a wireless network can be increased with several AccessPoints. The AccessPoints have the same SSID for this purpose. When a system enters the wireless net, it searches among the reachable AccessPoints for the one with the strongest signal and logs on there. Two systems logged on to different AccessPoints communicate with each other in this way, even when they are not within direct radio reach. If a system also continuously monitors the radio situation after the logon, it can detect how the signals from an AccessPoint become weaker and those of another become stronger, and can then log on to the stronger one without the user noticing. This procedure is referred to as roaming.

## Operating system requirements

Windows 2000 and Windows XP

# PC cards

Two PC card slots (CardBus or PCMCIA) enable the notebook to operate two type I or type II PC cards or one type III PC card.

Make sure that no foreign bodies get into the PC Card slots.

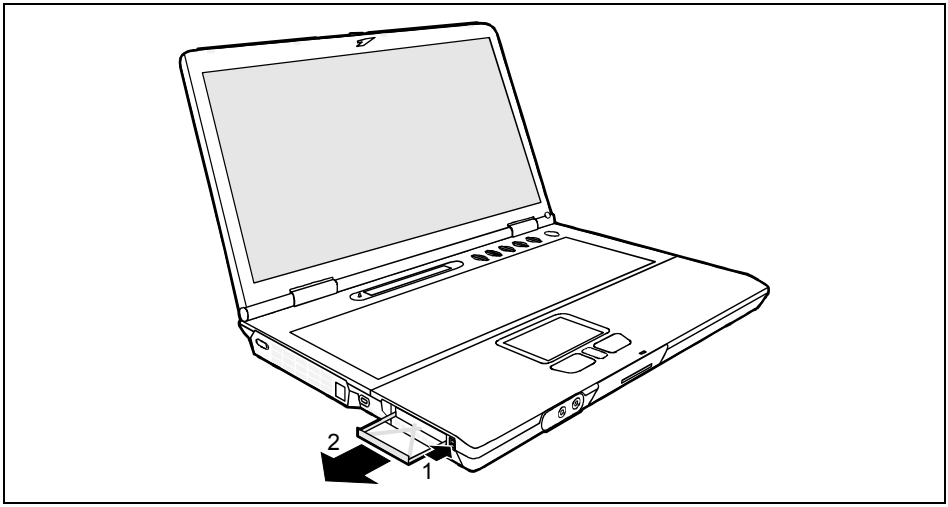
## Working with PC cards

Consult the documentation supplied by the PC card's manufacturer and follow the instructions provided.

Never use force when inserting or removing a PC card.

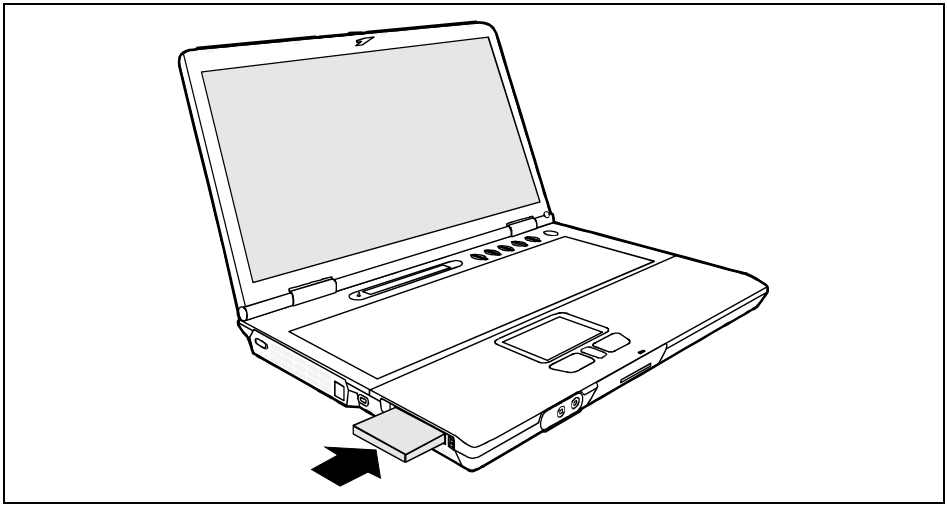
### Installing a PC card

No PC card with protruding parts (e.g. wireless LAN antenna) can be installed in the upper PC card slot. Only install PC cards with protruding parts in the lower slot.




- ► Press the eject button (1). The placeholder for the PC card will project further out of the notebook's case.
- ► Pull the placeholder for the PC card (2) out of the slot.

Keep the placeholder for the PC card in a safe place. When you reinstall the PC card you should also refit the placeholder for the PC card. Thus you prevent foreign objects from getting into the PC card slot.



► Insert the PC card, contacts first, into the slot guide. The labelled side of the PC card should be facing upward.

► Gently push the PC card into the slot until you feel it click into place.

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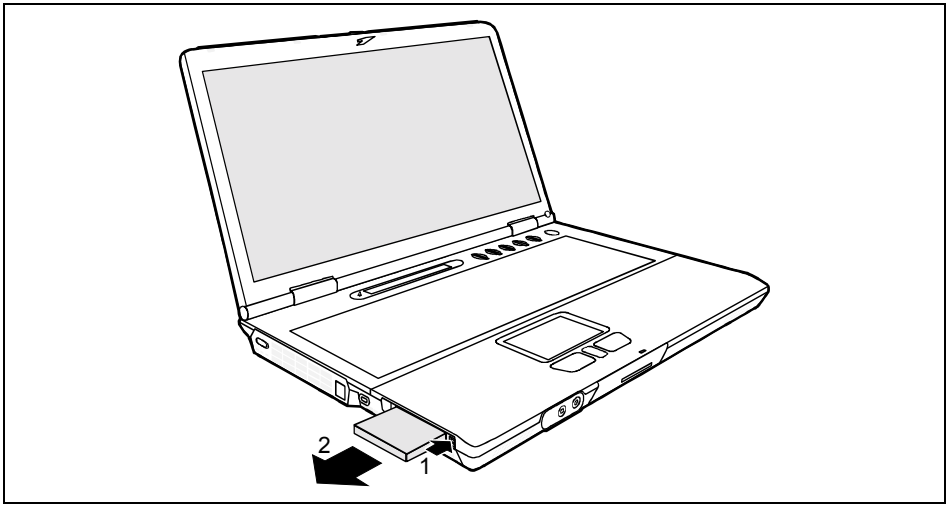
Consult the documentation supplied with the PC card for information on how to install the necessary device drivers.

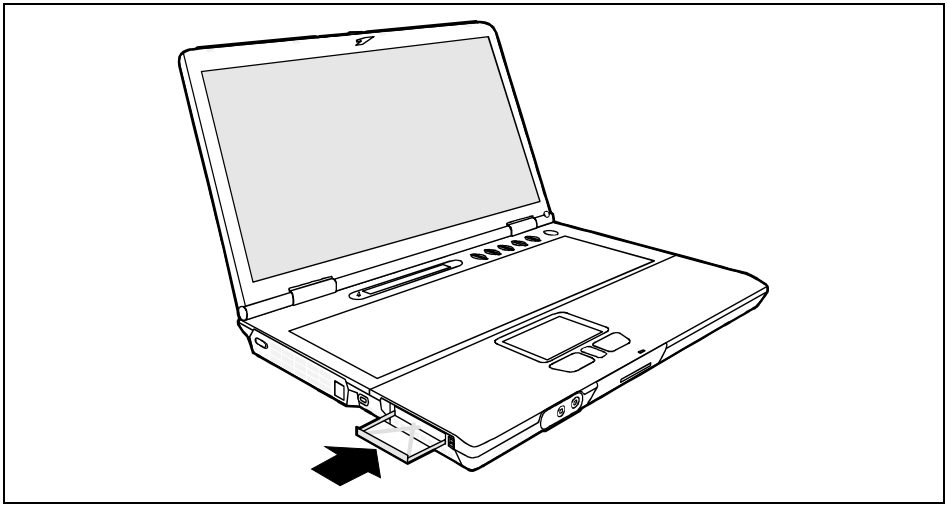
For further information refer to the information files (e.g. **.TXT*, **.DOC*, **.WRI* or **.HLP*) provided on the PC card driver diskette or the information in the operating system manual.

You can push the PC card slot eject buttons into the notebook casing. Press the eject buttons until they snap in.

## Removing a PC card



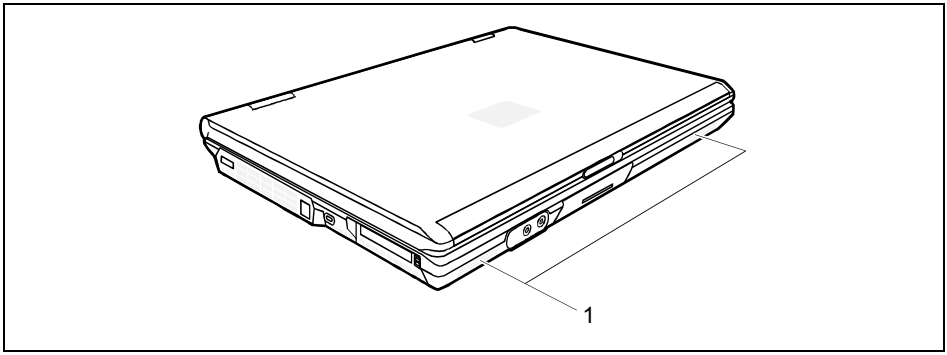

- ► Press the eject button (1). The PC card will project further out of the notebook's case. If the eject buttons are pushed in flush with the notebook casing, they must first be snapped out. Press the eject buttons until they snap out.
- ► Slide the PC card out of the notebook (2).



► Insert the placeholder for the PC card into the slot guide.

► Gently slide the placeholder for the PC card into the slot until you feel it click into place (1).

# Loudspeakers




Two loudspeakers (1) are installed in your notebook.

The internal loudspeakers switch off when you attach headphones or external loudspeakers to the audio jack.

# Security functions

Your notebook enables you to protect your system and personal data in a number of ways against unauthorised access. By combining these options, you can achieve maximum protection for your system.

In this chapter you will learn which security functions your notebook is equipped with, which advantages these functions offer you and how to configure and use them.

Please consider that in the case of improper use, you yourself will also be unable to access your system and your data. Please note therefore the following hints:

- Back up your data on external data carriers at regular intervals.
- Passwords must be assigned for some security functions. Please be sure to note these passwords, as otherwise you will no longer be able to access your system. We recommend that you make a note of the passwords and keep them in a safe place.

If you lose both the user and the admin passwords, you must contact our help desk. The telephone numbers are contained in the "Help Desk" supplement. The loss of passwords is not a warranty case and is therefore subject to charge.

## Overview of all security functions

The following sections contain a brief description of the security functions that are provided with your notebook as standard equipment.

### Kensington Lock

With the Kensington MicroSaver, a sturdy steel cable, you can protect your notebook from theft. For this reason your notebook is equipped with a device for the Kensington MicroSaver. The Kensington MicroSaver is available as an accessory.

### BIOS password protection

You can protect you personal data from unauthorised access with various passwords. By combining these different options, you can achieve maximum protection for your system.

#### Password protection for the BIOS setup

With the Supervisor password you prevent unauthorised opening of the *BIOS Setup*, and with it access to important system settings. In the *BIOS Setup* you can also activate protection for the operating system and your hard disk.

#### Password protection for the operating system

With corresponding settings in the *BIOS Setup* you can block starting of the operating system. Only those who know the supervisor or user password can access the system.

**Password protection for your hard disk**

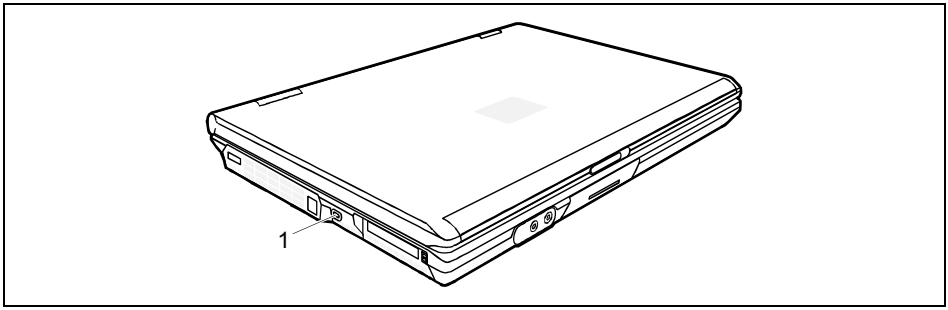
By activating the hard disk protection in the *BIOS Setup* you prevent unauthorised access to the hard disk drive. The hard disk password is checked internally during each system start-up and ensures that the hard disk can only be used in conjunction with the related device.

# Brief overview of the security functions

| Security function | Type of protection | Preparation |
|---|---|---|
| Kensington Lock | Mechanical | Mount and lock Kensington MicroSaver (accessory) |
| BIOS password protection | Password protection for *BIOS Setup*, operating system and hard disk with Supervisor and User password. The passwords consist of a maximum of eight alphanumeric characters. | Specify at least one Supervisor password in the *BIOS Setup* and activate the password protection for the operating system and hard disk as desired. |

# Using Kensington Lock

With the Kensington MicroSaver, a sturdy steel cable, you can protect your notebook from theft. For this reason your notebook is equipped with a device for the Kensington MicroSaver. The Kensington MicroSaver is available as an accessory.




The Kensington Lock is on the left hand side of your notebook.

► Fit the Kensington MicroSaver on the device (1) on your notebook.

# Configuring password protection in BIOS Setup

Before using the various options of password protection for your data security in the *BIOS Setup*, please note the following hints:

- Please keep in mind your passwords in any case, as you will not be able to access your *BIOS Setup* and/or your system any longer, if you forget both the user password and the supervisor password.
  The loss of passwords is not a warranty case and is therefore subject to charge.
- Back up your data on external data carriers at regular intervals.

Passwords can be up to eight characters long. You can use all alphanumeric characters and need not distinguish between uppercase and lowercase characters.

## Protecting BIOS Setup (supervisor and user password)

We recommend that you print out the following instructions, as these cannot be displayed while setting the password.

You prevent unauthorised opening of the *BIOS Setup* with both the supervisor and the user password. With the supervisor password you have access to all functions of the *BIOS Setup*, and with the user password only to part of the functions. You can only set a user password if a supervisor password has already been assigned.

Please refer to section "Settings in BIOS Setup" for a description of calling and operating the *BIOS Setup*.

### Set the supervisor and user password

► Call *BIOS Setup* and select the *Startup* menu.

► Mark the *Set Supervisor Password* field and press the Enter key.

With *Enter new Password*: you are then requested to enter a password.

► Enter the password and press the Enter key.

With *Re-Enter new Password* you are asked to confirm the password.

► Enter the password again and press the Enter key.

With *Notice: Changes have been saved* you receive a confirmation that the new password has been saved.

► To assign the user password, mark the field *Set User Password* and proceed exactly as when configuring the supervisor password.

If you do not want to make any other settings, you can exit *BIOS Setup*.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook is rebooted and the new password is effective. If you now want to open the *BIOS Setup*, you must first enter your supervisor or user password. Please note that you only have access to a few BIOS settings with the user password.

### Change supervisor or user password

► When changing the password, proceed exactly as for password assignment.

You can only change the supervisor password when you have logged into the *BIOS Setup* with the supervisor password.

### Cancelling passwords

To cancel a password (without setting a new password) run the following steps:

► Call *BIOS Setup* and select the *Security* menu.

► Mark the *Set User Password* or *Set Supervisor Password* field and press the Enter key.

With *Enter new Password* you will then be asked to enter a password.

► Press the Enter key twice.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook is rebooted and the password is cancelled.

With the supervisor password you simultaneously deactivate the user password.

## Password protection of operating system

With the supervisor password or the user password, you have assigned in the *BIOS Setup* (see section "Protecting BIOS Setup (supervisor and user password)"), you can also prevent booting of the operating system.

### Activating system protection

► Call *BIOS Setup* and select the *Security* menu.

► If you have not assigned BIOS passwords yet, define the supervisor and the user password now, if desired (see "Protecting BIOS Setup (supervisor and user password)" section).

► Mark the *Password on Boot* field and press the Enter key.

► Select the *Every Boot* entry and press the Enter key.

If you do not want to make any other settings, you can exit *BIOS Setup*.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook reboots and you are asked to enter your password (the supervisor or user password).

### Deactivating system protection

► Call *BIOS Setup* and select the *Security* menu.

► Mark the *Password on Boot* field and press the Enter key.

► Select *Disabled* and press the Enter key.

If you do not want to make any other settings, you can exit *BIOS Setup*.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook reboots and there is no longer any password protection for the operating system.

# Password protection for hard disk

The had disk password prevents unauthorised access to the hard disk drives and is checked internally each time the system is booted. The condition for this is that you have assigned at least the supervisor password.

## Activating hard disk protection

► Call *BIOS Setup* and select the *Security* menu.

If you have not assigned BIOS passwords yet, define the supervisor and the user password now, if desired (see "Protecting BIOS Setup (supervisor and user password)" section).

► Mark the *Hard Disk Security* field and select the *Enabled* entry.

If you do not want to make any other settings, you can exit *BIOS Setup*.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook reboots and your hard disk is now protected with a password.

## Deactivating hard disk protection

► Call *BIOS Setup* and select the *Security* menu.

► Mark the *Hard Disk Security* field and select the *Disabled* entry.

If you do not want to make any other settings, you can exit *BIOS Setup*.

► Select the *Exit Saving Changes* option in the *Exit* menu.

The notebook restarts.

# Connecting external devices

Under all circumstances, please observe the safety notes provided in the "Important notes" chapter.

Read the documentation on the external device before connecting it.

Do not connect or disconnect cables during a thunderstorm.

Do not pull on the cable when disconnecting a cable. Always take hold of the actual plug.

Adhere to the order described in the following when you connect external devices to the notebook or separate them from the notebook:

**Connecting devices to notebook**

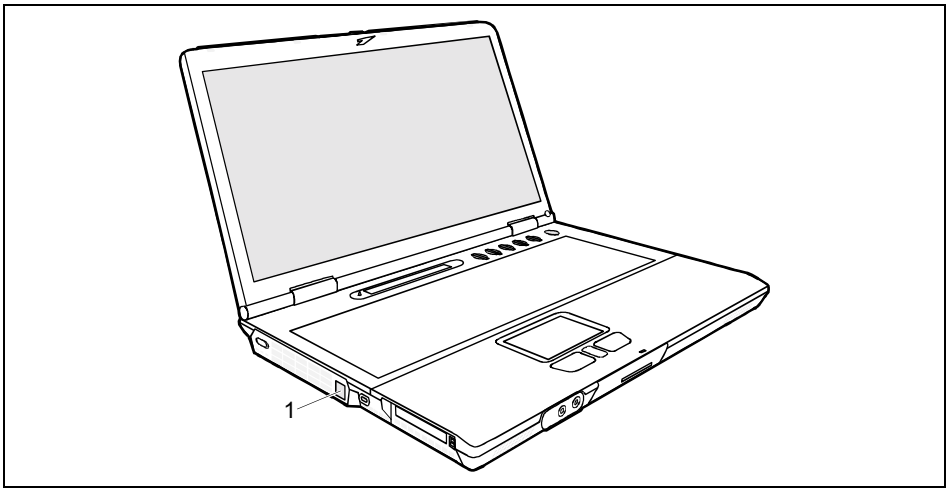
1) Turn off all power and equipment switches.
2) Remove all power plugs from the mains outlets.
3) Connect all the cables to the notebook and the external devices.
4) Plug all data communication cables into the utility sockets.
5) Plug all power cables into the mains supply.

**Disconnecting devices from notebook**

1) Turn off all power and equipment switches.
2) Remove all power plugs from the mains outlets.
3) Unplug all data communication cables from the utility sockets.
4) Disconnect all the cables from the notebook and the external devices.

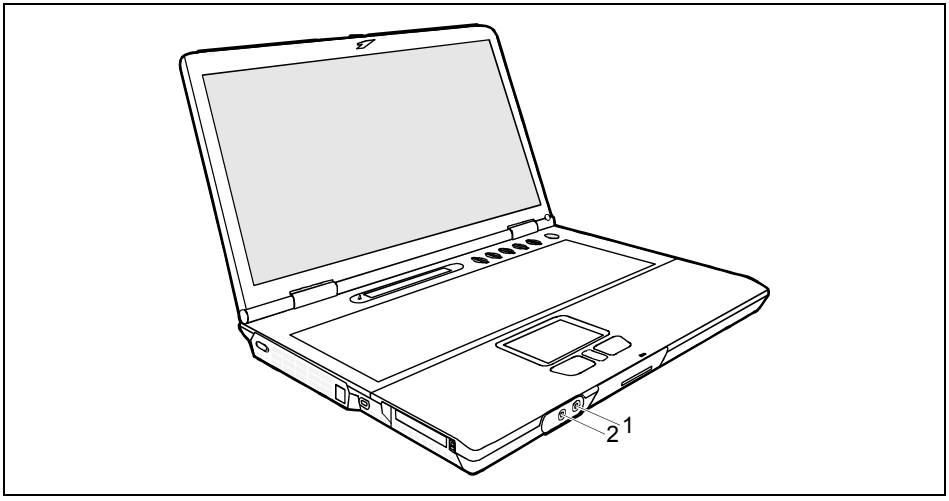
# Ports

### Connections on the left side




1 = Modem port

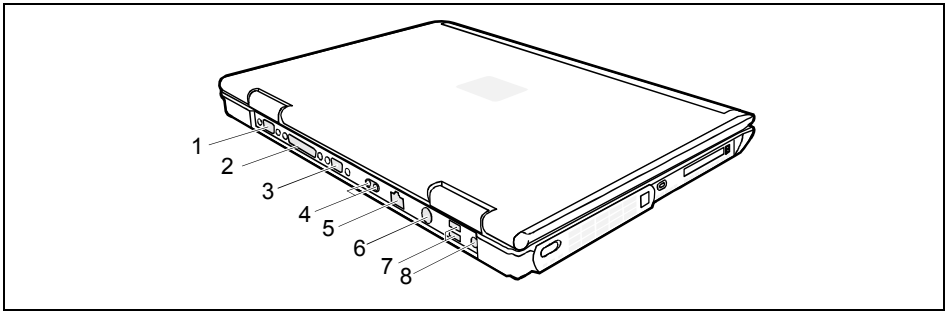
### Ports on the front




1 = Port for external microphone

2 = Port for headphones

**Connections on the rear**




1 = Serial port
2 = Parallel port
3 = External monitor connector
4 = Infrared interface
5 = LAN connector
6 = PS/2 port (for keyboard or mouse)
7 = USB ports
8 = Port for power adapter

Some of the external devices require special drivers (see the operating system and external device documentation).

# Connecting an external monitor

An external monitor can be connected to the notebook.

- ► Switch off the notebook and the external monitor.
- ► Connect the data cable of the external monitor to the monitor port ▭ of the notebook.
- ► First switch on the monitor and then the notebook.

With the key combination Fn + F10 you can select the screen for output. You can opt to use:
- just the notebook's LCD screen
- just the external monitor
- both the LCD screen and the external monitor

If the notebook is connected to a Port Replicator, the operating system creates an hardware profile for the "Docked" mode. The setting with the last screen used for output is saved in this profile. This profile will be loaded, as soon as the notebook is connected to a Port Replicator.

**Setting the refresh rate for your external monitor**

The refresh rate must be correctly set so that the image does not flicker.

- ► To change the refresh rate or resolution select the monitor type in the menu *Start - Settings - Control Panel - Display - Settings - Advanced - Monitor*.
- ► Now select the *Adapter* tab.
- ► Adjust the refresh rate and then click *Apply*.

If the refresh rate set is too high, the monitor may be damaged. Please see the documentation included with your monitor for the maximum possible refresh rate.

# Connecting an external keyboard

You do not need to switch your notebook off.

► Connect the external keyboard to the PS/2 port on the Port Replicator.

# Connecting an external PS/2 mouse

You do not need to switch your notebook off.

► Connect the mouse to the PS/2 port of the Port Replicator.

# Using the parallel port

► Switch the notebook off.

► Connect the data cable of the printer to the parallel port on the notebook.

► Plug the printer power cable into the mains outlet.

► First switch the printer on, then the notebook.

# Connecting USB devices

On the USB ports you can connect external devices that also have a USB port (e.g. a printer, a scanner or a modem).

USB devices are hot-pluggable. This allows cables from USB devices to be connected and disconnected with the system switched on.

USB 1.x has a maximum data transfer rate of 12 Mbit / s.

USB 2.x has a data transfer rate of up to 480 Mbit / s.

Additional information can be found in the documentation for the USB devices.

► Connect the data cable to the external device.

► Connect the data cable to a USB port .

**Device drivers**

The devices you connect to the USB ports usually require no driver of their own, as the required software is already included in the operating system. However, if the USB device requires its own software, please install it from the data carrier provided with the USB device.

# Connecting external audio devices

**Headphones port**

Via the headphone port you can connect either headphones or external loudspeakers to your notebook.

**Microphone jack**

Via the microphone port you can connect an external microphone to your notebook.

# Settings in BIOS Setup

In *BIOS Setup* you can set the system functions and the hardware configuration of the notebook. The settings can only be changed via the keyboard.

When it is delivered, the notebook is set to factory default settings. You can change these settings in *BIOS Setup*. Any changes you make take effect as soon as you save and quit the *BIOS Setup*.

The *BIOS Setup* programme contains the following menus:

| | |
|---|---|
| *Main*: | for system settings as time, date, hard disk and monitor selection |
| *Advanced*: | for system settings such as ports and keyboard |
| *Security*: | for password settings and safety functions |
| *Boot*: | for configuring the boot sequence |
| *Info*: | for displaying the system configuration (e.g. processor and memory configuration) |
| *Exit*: | to exit the *BIOS Setup* |

## Start BIOS Setup

► Restart the notebook (switching ON/OFF or warm boot).

The following display briefly appears on the screen during start-up:

```
<ESC> Diagnostic screen   <F12> Boot Menu   <F2> BIOS Setup
```

► When this message appears, press the key F2.

If a password has been assigned:

► Enter the password and press the Enter key.

If you have forgotten the password, contact your system administrator or contact our hotline/help desk.

## Operating BIOS Setup

Press the F1 key to display help on the operation of *BIOS Setup*.
The description of the individual settings is shown in the right-hand window of the *BIOS Setup*.

You can revert to the default settings for the *BIOS Setup* menu you are currently in, by using the F9 function key.

► Use the cursor key ← or → to select the menu you wish to access to make changes.

► Press the Enter key.

The menu is displayed on the screen.

► Use the cursor key ↑ or ↓ to select the field you wish to change.

► Press the space bar to confirm your selection.

► Press the ESC key to exit the selected menu.

► For future reference, make a note of the changes you have made (for example, in this manual).

# Exiting BIOS Setup

To exit *BIOS Setup*, select the *Exit* menu from the menu bar. You can then decide which settings you want to save. The *Exit* menu offers the following options.

You must mark the required option and activate it with the Enter key.

### Exit Saving Changes

Select *Exit Saving Changes* and *Yes* to save the current settings and exit the *BIOS Setup*. The device is rebooted and the new settings come into effect.

### Load Setup Default

To revert all the menus of *BIOS Setup* to the default entries, select *Load Setup Default* and *Yes*.

### Exit Discarding Changes

Select *Exit Discarding Changes* and *Yes* to discard the changes you have made. The settings which were in force when *BIOS Setup* was called remain effective. *BIOS Setup* is terminated and the device is rebooted.

### Discard Changes

To load the values of all the menus of *BIOS Setup* that were in effect when *BIOS Setup* was called, select *Discard Changes* and *Yes*. If you want to exit *BIOS Setup* with these settings, select *Exit Saving Changes* and *Yes*.

### Save Changes

To save settings without exiting *BIOS Setup*, select *Save Changes* and *Yes*.

# Troubleshooting and tips

Take note of the hints in the "Connecting external devices" chapter, when you connect or disconnect cables.

If a fault occurs in your notebook, try to eliminate it with the measures described in this chapter. If you fail to correct the problem, proceed as follows:

- ► Make a note of the steps and the circumstances that led to the fault. Also make a note of any error messages displayed.
- ► Switch the notebook off.
- ► Contact your sales outlet or our hotline/help desk.

## You have forgotten your user and/or supervisor password.

If you have forgotten your user password, enter the supervisor password or contact your system administrator. If the supervisor password is also no longer available, contact our help desk. The help desk will refer you to our service partner, who will unlock your notebook (for a charge).

## Installing new software

When installing programmes or drivers, important files may be overwritten and modified. To be able to access the original data in the case of any problems following installation, you should backup your hard disk prior to installation.

## Restoring the operating system

With the Windows Recovery CD you can restore the operating system on your notebook.

During restoring the operating manual the contents of your hard disk will be overwritten. After this, operating system, drivers and software utilities will be reinstalled. For this reason you should try to save important data to a backup medium before you restore the hard disk contents.

Detailed PC knowledge is required for manual partitioning.

- ► Insert the Windows Recovery CD into the optical drive and switch the notebook on.
- ► Start the *Setup* programme on the CD.
- ► Follow the instructions on the screen.

You must then reinstall all the drivers. Use the "Drivers & Utilities" CD.

## The notebook's date or time is incorrect

► Double-click on the clock in the task bar and adjust the time.

or

► Set the time and/or date in the *BIOS Setup* menu *Startup*.

i If the date and time are repeatedly incorrect when you switch on the notebook, the buffer battery that supplies the internal clock is dead.

Connect the notebook via its power adapter to a grounded mains outlet or install a fresh battery. The buffer battery will take approximately two days to complete its recharge. Should the problem persist, please contact our hotline/help desk.

## The LCD screen of the notebook remains blank

**Monitor is switched off.**

► Press a key or enter the password

**External monitor or television set connected.**

► Set the setting *Boot Screen* in the *BIOS Setup* in the *Startup - Display Device* menu to *LCD*.

## The LCD screen is difficult to read

**Reflection**

► Turn the notebook or alter the tilt of the LCD screen.

## The external monitor stays blank

If your screen remains blank this may be due to the following:

**Monitor is switched off.**

► Switch the external monitor on.

**Power saving has been activated (screen is blank).**

► Press any key to continue.

**Brightness is set too dark.**

► Adjust the brightness of the monitor.

**Screen output is set to the notebook's LCD screen**

► Press the key combination Fn + F10 (selecting internal/external display).

**The external monitor's power cable or data cable is not connected properly.**

► Switch off the external monitor and the notebook.

► Check whether the power cable is plugged properly into the external monitor and into the power socket.

- ► Check whether the data cable is properly connected to the notebook and the external monitor (if it is plugged in with a connector).
- ► Switch on the external monitor and the notebook.

## The external monitor is blank or the image is unstable

Two causes are possible: An incorrect type has been selected for the external monitor or the wrong screen resolution has been set for the application programme.

- ► Terminate the application programme with Alt + F4.

If the fault continues to occur after ending the programme, switch over to the notebook's internal LCD screen with Fn + F10. Change the following setting:

- ► Select *Start - Settings- Control Panel - Display - Settings* and then the screen resolution you require in the *Resolution* field.

or

- ► Select the correct monitor under *Start - Settings- Control Panel - Display - Settings - Advanced Properties - Monitor - Modify*.

## The notebook cannot be started

If the notebook does not start after switch on, this may be due to one of the following:

**The battery is not installed correctly.**

- ► Switch the notebook off.
- ► Check whether the battery is installed correctly in its compartment.
- ► Switch the notebook on.

**The battery is dead**

- ► Charge the battery.

Or

- ► Install a charged battery.

Or

- ► Connect the power adapter to the notebook.

**The power adapter is not connected correctly.**

- ► Switch the notebook off.
- ► Check whether the power adapter is connected correctly to the notebook.
- ► Check whether the power cable is plugged properly into the power adapter and into the mains outlet.
- ► Switch the notebook on.

# The notebook stops working

If the notebook stops working, this may have the following reasons:

**The notebook is in Standby or Suspend mode.**

► Reactivate the notebook by pressing a key (Standby mode) or by switching it back on (Suspend mode).

**An application programme has caused the malfunction.**

► Close the application programme or restart the notebook by switching it on/off or with a warm boot.

**The battery is dead**

► Charge the battery.

Or

► Install a charged battery.

Or

► Connect the power adapter to the notebook.

# The mouse does not work

If the connected mouse does not work, the following can cause it:

**Touchpad driver is not installed properly.**

► Deinstall the touchpad driver.

► Install under Windows the actual driver from the "Drivers & Utilities" CD.

**Mouse driver is not loaded.**

► Check whether the correct mouse driver is properly installed and is present before the application programme is started.
Detailed information can be found in the User guides for the mouse or application programme.

**Mouse is not connected**

► Switch the notebook off.

► Check whether the mouse cable is correctly connected to the notebook.
If you use an adapter or extension lead with the mouse cable, check the connections.

► Switch the notebook on.

# The printer does not print

► Make sure that the printer is switched on and is on-line (see the manuals supplied with the printer).

► Check that the cable connecting the notebook and the printer is connected properly.

► Check that the correct printer driver is installed.

# Acoustic warnings

**A beep sounds every few seconds**

The battery is almost flat.

► Charge the battery.

# Memory expansion

Your notebook has 128 -2048 Mbyte of main memory installed, depending on the upgrade level. The notebook will not start without memory modules, as no fixed main memory is installed.

## Installing and removing the memory extension

Please note the information provided in the "Notes on installing and removing boards and modules" section in the "Important notes" chapter.

The notebook must be switched off when installing/removing the memory modules, it must not be in Suspend mode.

Install only memory expansions that satisfy the requirements and rules governing safety, RFI and electromagnetic compatibility and relating to telecommunications terminal equipment (see the "Important notes" chapter).

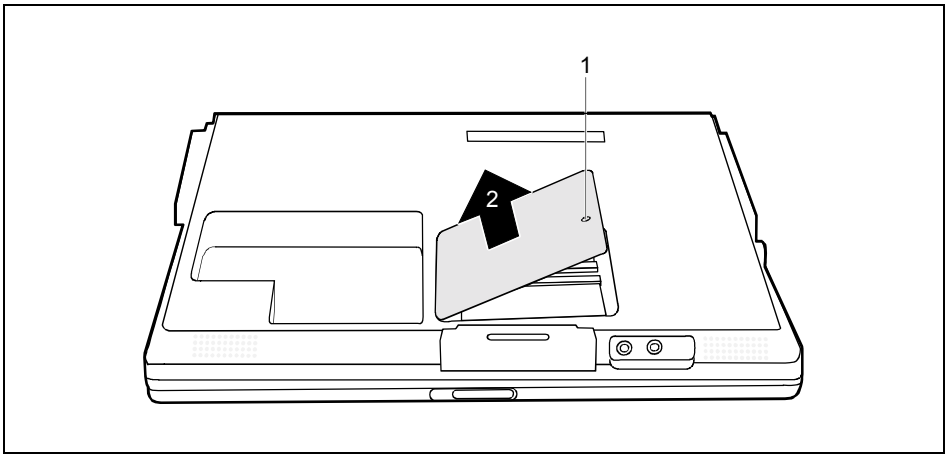
Use only memory expansions which have been released for your notebook (128, 256, 512 and 1024 Mbyte modules, DDR 266 SO DIMM).

Never use force when installing or removing memory modules.

Make sure that foreign objects do not fall into the memory module compartment.

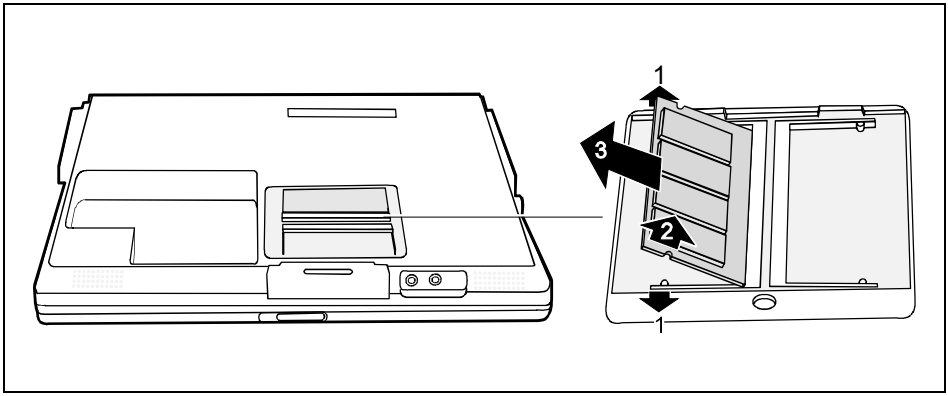
- ► Switch off the notebook and all devices connected.
- ► Close the LCD screen so that it locks into place.
- ► Unplug the power adapter from the mains outlet.
- ► Disconnect all cables connected to the notebook.
- ► Remove the battery (see "Removing the battery" section in the "Working with the notebook" chapter).
- ► Place the notebook upside down on a flat surface.

**Removing cover**



- ► Remove the screw (1).
- ► Lift the cover off the notebook in the direction of the arrow (2).

**Removing memory modules**

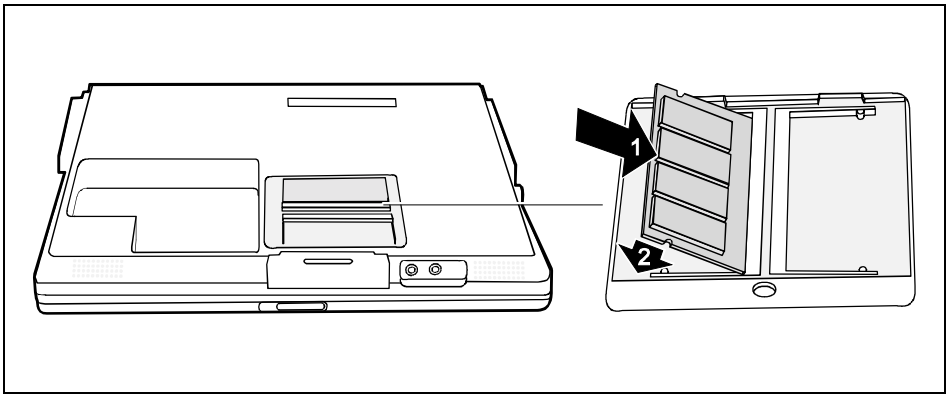



- ► Carefully push the two mounting clips outwards (1).

The memory module will flap upward (2).

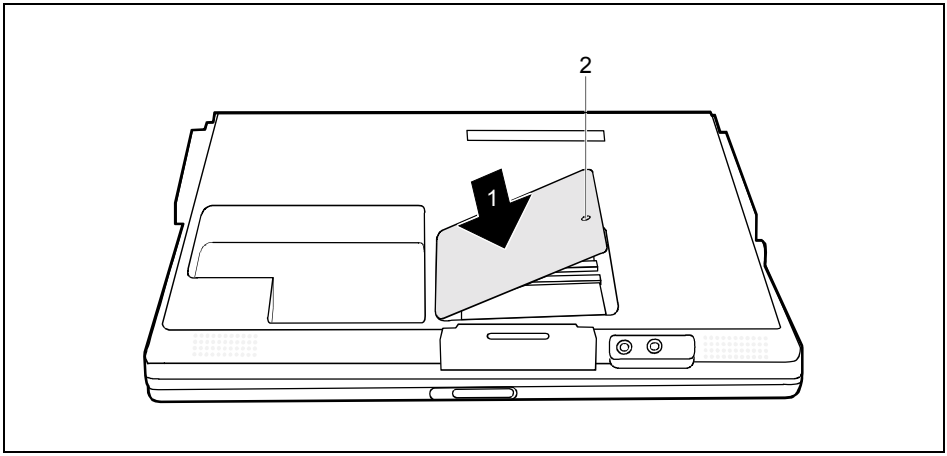
- ► Pull the memory module out of the memory slot (3).

**Installing memory modules**




- ► Insert the memory module, contacts first, into the slot (1).
- ► Carefully push the memory module downwards until you feel it latch into place (2).

**Mounting the cover**




- ► Place the cover on its mounting location (1).
- ► Fasten the cover with the screw (2).
- ► Reinstall the battery (see "Installing the battery" section in the "Working with the notebook" chapter).
- ► Place the notebook right side up on a flat, stabile, nonslippery surface.
- ► Reconnect the cables.

# Technical data

## Notebook

| | |
|---|---|
| Processor: | µFCPGA2<br>Intel Pentium M from 1,3 GHz |
| Chipset: | Intel 855GM |
| Main memory: | Maximum 2,048 Mbyte DDR 266 SO DIMM<br>2 slots for 128, 256, 512 and 1,024-Mbyte module |
| Possible modules: | • CD-ROM drive, 24X speed<br>• DVD drive, 8/20x (CD-ROM)<br>• Combination drive, 24x (CD-R) / 10x (CD-R/W) / 24x (CD), 8x (DVD)<br>• Second battery<br>• Second hard disk<br>• Weight Saver |

**Electrical data**

| | |
|---|---|
| Regulations complied with: | CE (including EN60950), CB, Energy Star, TB R 21, GS |
| Protection class: | III |
| Maximum power draw:<br>(notebook on with battery charging) | 60 W |

**LCD display panel**

| | |
|---|---|
| Display diagonal: | 14.1" XGA TFT (Image Formation Time: 55 ms)<br>15" XGA (Image Formation Time: 70 ms) |

**Graphics**

| | |
|---|---|
| Chipset: | Intel UMA |
| Video memory: | Shared Memory |
| Supported resolutions on external monitor: | 1600 x 1200, 85 Hz |

**Audio**

| | |
|---|---|
| Sound: | AC97 Codec Sigmatel 9767 |
| Integrated loudspeakers: | 2 (stereo) |

### Input devices

| | |
|---|---|
| Keyboard: | 88 keys |
| Touchpad: | 2 buttons, 2 scroll buttons |

### Slots

| | |
|---|---|
| PC Card slots (CardBus/PCMCIA): | PCMCIA 2 x Type I/II or I x Type III,<br>PC card controller OZ711E1 with SmartCard support |

### Ports

| | |
|---|---|
| Parallel port: | 25-pin female connector, ECP capable |
| Port for external monitor: | Socket, 15-pin (analogue RGB) |
| Serial port: | 9-pin male connector, RS232C |
| Microphone jack: | connector, stereo |
| Headphone port: | connector, stereo |
| PS/2 port: | 6-pin mini DIN female connector |
| Modem port: | Female connector, RJ-11 |
| USB port (Universal Serial Bus): | 2x USB 2.0 |
| Infrared interface: | IrDA 1.1 (Max. 4 Mbps) |
| LAN connector: | Female connector, RJ-45 |
| Docking port: | Port Replicator |
| Kensington Lock | |

### Environmental conditions

| | |
|---|---|
| Environment class 7K1 | |
| Mechanical class 7M2 | |
| Temperature: | |
| Operating (7K1) | 5 °C .... 35 °C |
| Transport (2K2) | -15 °C .... 60 °C |

### Dimensions

| | |
|---|---|
| Width/depth/height: | 15 inch: 326 mm/ 272 mm/ 38 mm |
| Weight with battery and CD-ROM drive: | 2.7 to 3.0 kg (depending on equipment level) |

# Battery

| | |
|---|---|
| Rated voltage: | 14.4 V (lithium ion)/Addl. battery: 10.8 V (lithium ion) |
| Rated capacity: | 54,7 Wh |
| Charge time: | Approx. 3 hours (BatteryMark 4.01) |
| Operating time: | 14.1' XGA TFT: approx. 3 hours |

# Power adapter

Primary

- Rated voltage: 100 V to 240 V (automatic)
- Frequency: 50 - 60 Hz

Secondary

- Rated voltage: 19 V
- Max. rated current: 3,16 A

You can readily order an additional power adapter and an additional power cable.

# Index


**5**
56k modem 44

**A**
Acoustic warnings 71
ACPI 39
  changing settings 39
Adhoc mode 47
Alt Gr key 28
Anti-theft protection 54
Application buttons 31
  A button 31
  B button 31
  e-mail button 32
  Internet button 31
Audio device, connecting 63

**B**
Backtab 30
Battery 35
  capacity 6
  charge level 36
  charging 35
  charging indicator 26
  disposal 16
  important notes 35
  installing 37
  lifetime 35
  removing 36
  second battery 39
  self-discharge 6
  storing 6
  symbol 36
Battery charge metre 36
Battery indicator
  first battery 27
  second battery 27
Battery maintenance 35
Beep, error message 71
Before you travel 6
BIOS Setup
  cancel supervisor password 56
  cancel user password 56
  change supervisor password 56
  change user password 56
  exiting 66
  operating 65
  password protection 55
  protect with password 55
  set supervisor password 55
  set user password 55
  settings 65
  starting 65
Board 5
Buffer battery, load 68

**C**
CapsLK indicator 27
CardBus, see PC card
CD/DVD
  inserting 43
  removing 43
CD-ROM drive 39, 41
  indicator 27
  installing 41
  manually opening 44
  removing 40
CD-RW drive 41
  indicator 27
  manual removal 44
CE marking 9
Charging indicator, battery 26
Cleaning 7
Closed cover switch 23
Combo drive 39, 41
  installing 41
  removing 40
  removing by hand 44
Configuration, BIOS Setup 65
Contents of delivery 17
Controls 23
Copyright-protected technology 9
Ctrl+Alt+Del 30
Cursor key 29

**D**
Damage during transport 17
Date, not correct 68
Date/Time incorrect 68
Devices
connecting 59, 62
disconnecting 59
Display
blank Display
image unstable 69
difficult to read 68
Display output, switch between 30
Disposal 16
Drifting screen display 69
Drive
installing 41
removing 40
Driver CD 67
Drivers & Utilities 67
DVD-ROM drive 39, 41
indicator 27
installing 41
manually opening 44
removing 40

**E**
Eject button, PC card 48
Electromagnetic compatibility 9
Emergency removal, CD/DVD 44
Energy consumption 37
Energy saving 5
Energy saving functions 5, 37
Standby mode 38
Enter key 28
Error
correction 67
Error message, acoustic 71
ESD 5
External devices, connecting 62
External keyboard, connecting 62
External loudspeaker, connecting 63
External monitor is blank 68
External PS/2 mouse, connecting 62

**F**
Firewire port 24, 60
First time switching on 18
Fn+F10 30
Fn+F3 30
Fn+F5 30
Fn+F6 30
Fn+F7 30
Fn+F8 30
Fn+F9 30
Full-screen, MS-DOS screen 30
Function select switch 31, 32

**G**
Guarantee coupon booklet 17

**H**
Hard disk 39
installing 41
protecting with password 57
removing 40
restoring the operating system 67
Hard disk indicator 27
Hard disk protection
activating 57
cancelling 57
Hardware, configuring 65
Headphone port 24, 60
Headphones, connecting 63

**I**
IEEE 1394 port, see FireWire port
IEEE 802.11 standard 46
Important notes 3
Indicator, Scroll 27
Indicators 23
CapsLK 27
charging indicator 26
hard disk drive indicator 27
NumLK 27
optical drive 27
PC cards 27
power indicator 26
Scroll Lock 27
Infrared interface 25, 61
Infrastructure mode 47

**K**
Kensington Lock 24, 53
Kensington Lock, applying 54
Kensington MicroSaver 53, 54

Key
Alt Gr 28
Backspace 28
Caps Lock 28
cursor control keys 29
cursor key 29
Enter 28
Fn 29
Fn key 29
menu 29
numeric keypad 29
Pause 29
Return 28
Shift 28
Shift key+Tab 30
Shift+Tab 30
Start 29
Tab 28
Tab key 28
Key combination 29, 30
Fn+F10 30
Fn+F3 30
Fn+F5 30
Fn+F6 30
Fn+F7 30
Fn+F8 30
Fn+F9 30
Keyboard 28
cleaning 7
Keyboard port 25, 61
Keyboard, connecting 62

**L**
LAN port 25, 61
LCD screen
cleaning 7
increasing the brightness 30, 34
is blank 68
notes 34
opening 21
reducing the brightness 30, 34
reflected glare 68
remains blank 68
setting the Desktop Area 34, 35
setting the font size 34
settings 34
synchronising the display 35
Lifetime, battery 35
Location, selecting the 17
Loudspeaker 24, 51
switching off/on 30

**M**
Main Memory, extension 73
Manual removal, CD/DVD 44
Memory
expansion 73
Memory expansion
important notes 73
installing 73, 74
mounting the cover 75
removing 73, 74
removing the cover 73
Memory module 73
important notes 73
installing 73, 74
mounting cover 75
mounting the cover 75
removing 73, 74
removing the cover 73
Menu key 29
Microphone
connecting 63
internal 51
Microphone jack 24, 60
Mobile operation 6
Modem 44
connecting 45
port 24, 60
Module 39
installing 41
removing 40
Module bay 39
Monitor
external 61, 68, 69
refresh rate 61
remains blank 68
synchronising the display 35
Monitor port 25, 61
Monitor settings 34
Mouse does not work 70
Mouse port 25, 61
MS-DOS screen, enlarge 30

**N**
No picture 69
Notational conventions 2
Notebook
not starting 69
operating 21
placing in service 17
setting up 17
stops working 70
switching off 22
switching on 21
switching on for the first time 18

Notes
battery 35
boards 5
CE marking 9
cleaning 7
disposal 16
energy saving 5
manufacturer 9
safety 3
transporting 6
Numeric keypad 28, 29
NumLK indicator 27

**O**
Operating from the battery 37
Operating system
activating system protection 56
cancel system protection 56
protecting with password 56
Operation, preparing for 18
Optical drive 41
eject button 25
indicator 27
lever 25
removing DVD by hand 25
Overview
controls 23
indicators 23
notebook 1
ports 23

**P**
Packing material 17
Parallel port 25, 61, 62
Password protection 53
BIOS password 53
Hard disk 54, 57
Operating system 53
Passwords
forgotten 67
troubleshooting 67
Pause key 29
PC card 48
eject button, push into 48, 49
indicators 27
installing 48
removing 50
PC card indicators 27
PC card slots 24
Player buttons 32
Next Track 32
Play/Pause 32
Previous Track 32
Stop 32
Pointer, changing the speed 35
Pointer, no mouse pointer 70
Port
audio devices 63
external loudspeaker 63
headphones 63
microphone 63
Port for power adapter 25, 61
Ports 23
Power adapter
connecting 18
setting up 17
Power indicator 26
Power Management 9
Power-on indicator 26
Preparing for use 17
Printer
connecting 62
does not print 70
PRISM Wireless LAN 46
PS/2 mouse, connecting 62
PS/2 port 25, 61

**R**
Radio frequencies 15
Recovery CD 67
Recycling 16
Restoring, operating system 67

**S**
Safety 3
Screen brightness
decreasing 30, 34
increasing 30, 34
Screen too bright 68
Scroll indicator 27
Second battery
installing 41
removing 40
Security functions 53
handling problems 67
survey 54
Self-discharge 6
Serial port 25, 61
Setting resolution 34, 35
Setting the font size 34
Setup, see BIOS Setup
Shift key 28
Signs and symbols 2
Software, installing new software 67
Standby mode 38
Standby mode, terminating 70
Start disk for Windows Me 67
Start key 29

Status indicator panel 23, 26
Storage, battery 6
Summer time 68
Supervisor password 53
Survey, security functions 54
Suspend mode, terminating 70
Suspend/Resume button 21, 23, 38
Synchronisation, screen display 35
System configuration 65
System settings, BIOS Setup 65

**T**
Technical data 77
- audio 77
- battery 79
- dimensions 78
- electrical data 77
- environmental conditions 78
- graphics 77
- input devices 78
- LCD screen 77
- notebook in general 77
- ports 78
- power adapter 79
- slots 78

Time
- daylight savings 68
- not correct 68

Tips 67
Touchpad 23, 33
- buttons 33
- cleaning 7
- dragging items 33
- executing commands 33
- moving the pointer 33
- scrolling 34
- selecting items 33

Transport 6, 7
Travel, notebook 6
Troubleshooting 67

**U**
USB devices
- connecting 62
- software 62

USB port 25, 61, 62
- connecting devices 62

**V**
VGA port, see monitor port
Volume
- decreasing 30
- increasing 30

**W**
Warm boot 30
Weight Saver
- installing 41
- removing 40

Weight Saver Blind insert, see Weight Saver
Wireless LAN 46
- adhoc mode 47
- infrastructure mode 47
- ON/OFF switch 24
- radio frequencies 15