

LIFEBOOK E Series



We make sure

FUJITSU COMPUTERS
SIEMENS

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... any technical problems or other questions that you need help with?

Please contact:

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- Your sales partner
- Your sales office

Additional information is contained in the Help Desk list and the "Warranty" manual. The "Warranty" manual can be found on the "Drivers & Utilities" CD/DVD.

The latest information on our products, tips, updates, etc. can be found on the Internet at: ["www.fujitsu-siemens.com"](http://www.fujitsu-siemens.com)

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LIFEBOOK E Series

EasyGuide

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Innovative technology...

... and an ergonomic design make your notebook a reliable, convenient mobile PC.

Your notebook features the very latest technology so that you get the best performance from your computing experience. Depending on which model you own, you have access to:

- Up to 4 Gbyte of main memory (RAM)
- A PC card slot for using a type I or type II PC card
- An ExpressCard slot for operating an ExpressCard/34 or ExpressCard/54
- a SIM card slot in which you can insert a SIM card
- a memory card slot for transferring digital photos, music and videos quickly onto your notebook
- a SmartCard reader to protect your notebook from unauthorised access
- an S-Video Out socket for connecting your notebook to your television
- A module bay for operating the following modules:
 - Second battery
 - Second hard disk drive
 - Super-multi format DVD burner with double layer support
 - Weight Saver
- a touchpad and an additional touchstick (optional)
- an audio controller, two internal loudspeakers and an internal microphone array with two microphones that enables irritating background noise to be effectively blocked out
- You can even connect an external microphone and an external loudspeaker to provide good sound quality

With the user-friendly *BIOS-Setup* you can control the hardware of your notebook and protect your system better against unauthorised access by using the powerful password properties.

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







Further information on this notebook is provided:

- in the "Professional Notebook" operating instructions
- in the "Safety" and "Warranty" manuals
- in the "Wireless LAN" manual
- in the documentation of the operating system
- In the information files (e.g. *.TXT, *.DOC, *.WRI, *.HLP, *.PDF)



You can find information on accessories for your notebook at ["www.fujitsu-siemens.com/accessories"](http://www.fujitsu-siemens.com/accessories).

Notational conventions

	Pay particular attention to text marked with this symbol. Failure to observe this warning may endanger your health, cause the equipment to malfunction or lead to loss of data. The warranty does not cover defects of the equipment caused by failure to follow these instructions.
	indicates important information that is required to use the device properly.
	refers to an action which you must carry out.
	indicates a result
This style	flags data entered using the keyboard in a program dialog or command line, e.g. your password (Name123) or a command to launch a program (start.exe)
This style	refers to information displayed by a program on the screen, e.g.: Installation is completed
<i>This style</i>	is for <ul style="list-style-type: none"> terms and texts in a software user interface, e.g.: Click<i>Save</i>. names of programs or files, e.g. <i>Windows</i> or <i>setup.exe</i>.
"This style"	is for <ul style="list-style-type: none"> cross-references to another section, e.g. "Safety information" Cross-references to an external source, such as a web address: For further information visit "www.fujitsu-siemens.com" indicates names of CDs and DVDs as well as names and titles of other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety" manual
	refers to a key on the keyboard, e.g.: 
This style	flags concepts and text that are emphasised or highlighted, e.g.: Do not switch off device

Important notes

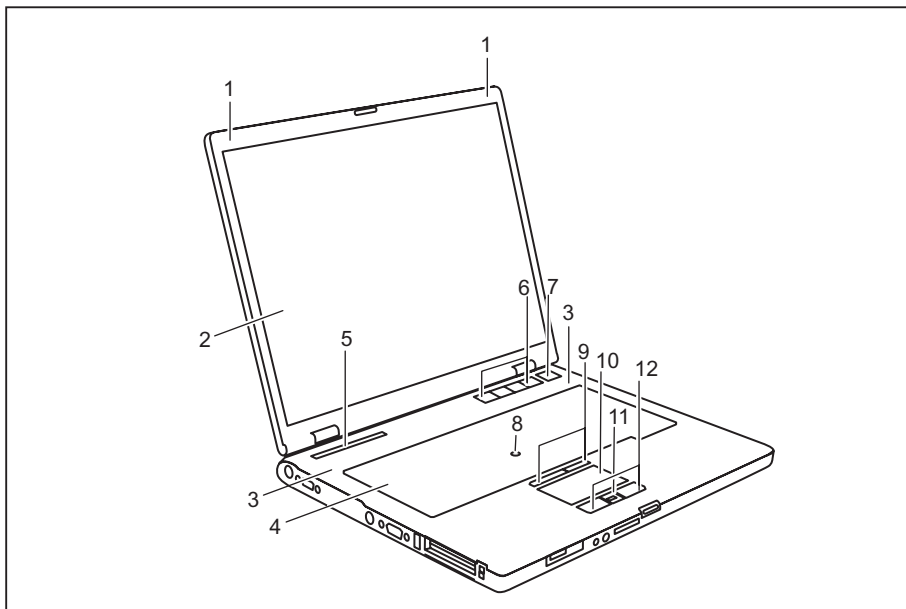


Take note of the safety hints provided in the "Safety" manual, in the "Professional Notebook" operating manual and in this manual.

Ports and operating elements

This chapter presents the individual hardware components of your notebook. You can obtain an overview of the ports and operating elements of the notebook. Please familiarise yourself with these components before you start to work with your notebook.

Opened Notebook



1 = Microphone

2 = LCD screen

3 = Loudspeaker

4 = Keyboard

5 = Status indicator panel

6 = Easy Launch keys

7 = ON/OFF button

8 = TouchStick (optional)

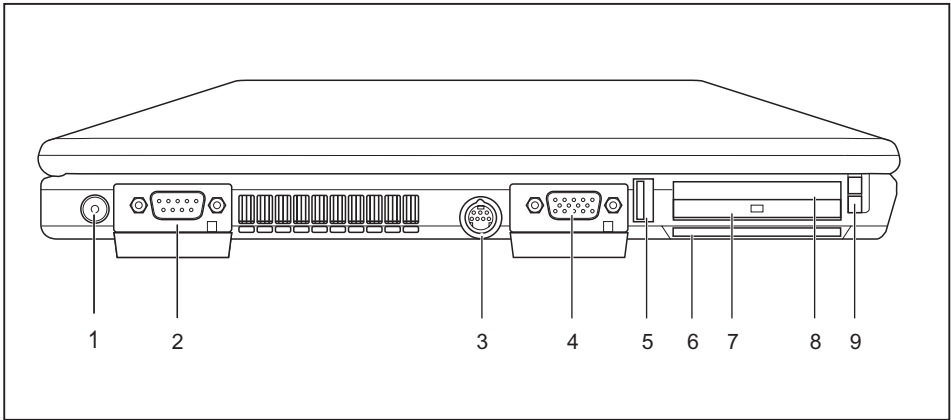
9 = TouchStick keys

10 = Touchpad

11 = Scroll key

12 = Touchpad keys

Left side



1 = DC IN jack

2 = Serial port

3 = S-Video out socket

4 = Monitor port (VGA)

5 = USB port

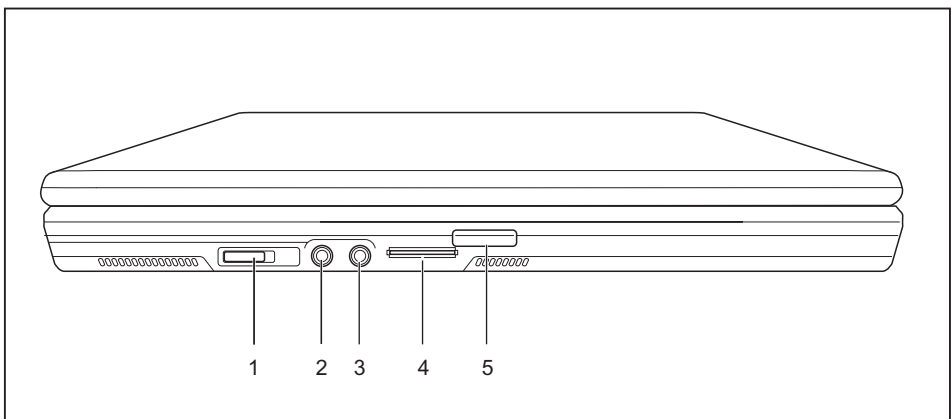
6 = SmartCard reader

7 = PC card slot

8 = ExpressCard slot

9 = Card eject button

Front



1 = ON/OFF button for radio components

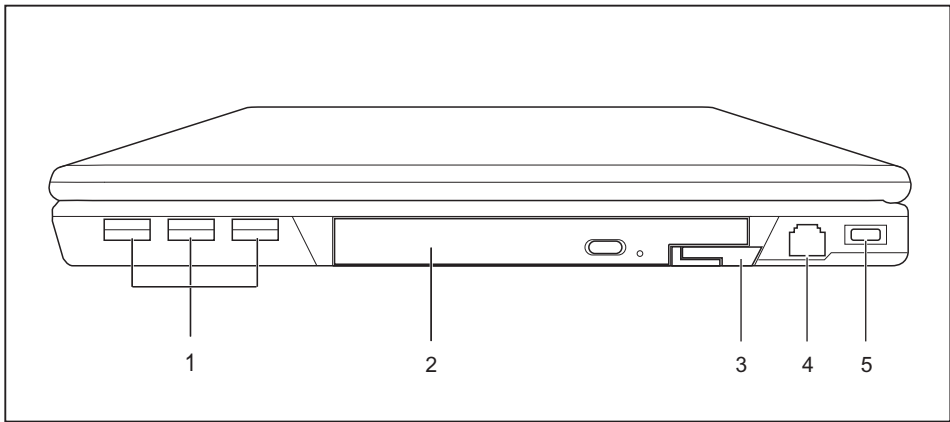
2 = Headphone port

3 = Microphone port

4 = Memory card slot

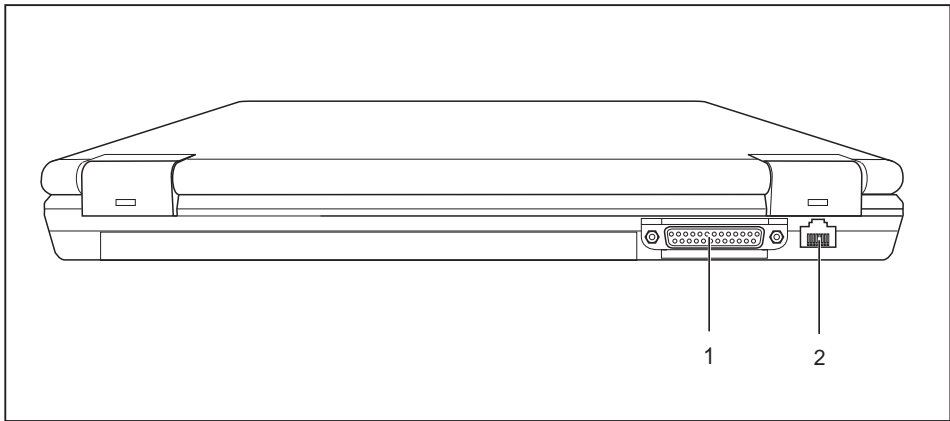
5 = Screen lock

Right side



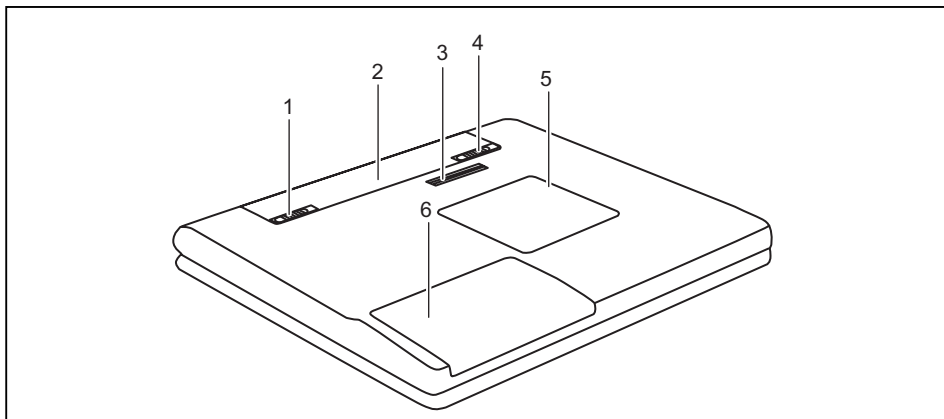
- 1 = USB ports
- 2 = Module
- 3 = Eject lever for module
- 4 = Modem connection (optional)
- 5 = Kensington Lock

Rear



- 1 = Parallel port
- 2 = LAN port

Underside



1 = Battery release

2 = Battery

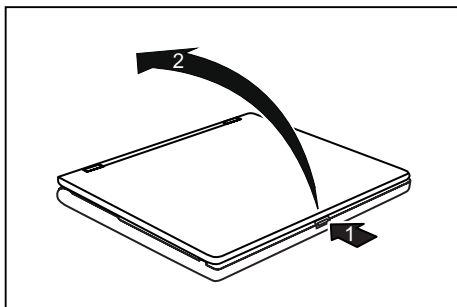
3 = Port for port replicator

4 = Battery release

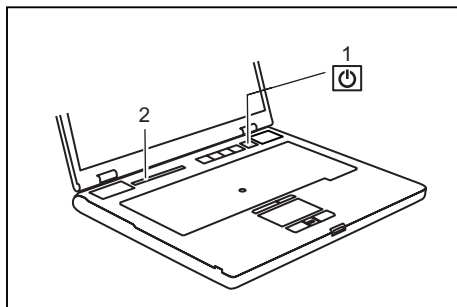
5 = Cover for memory modules

6 = Cover for hard disk

Switching on the notebook



- Press the release button (1), and unfold the LCD screen upwards (2).



- Press the ON/OFF button (1) to switch the notebook on.
- ↳ The power-on indicator of the notebook appears in the status indicator panel (2).



Windows XP:

You can configure the ON/OFF button under *Start - (Settings) - Control Panel - Performance and Maintenance - Power Options - Advanced*.

Windows Vista:

You can configure the ON/OFF button under *Start symbol - (Settings) - Control Panel - Mobile PC - Power Options*.

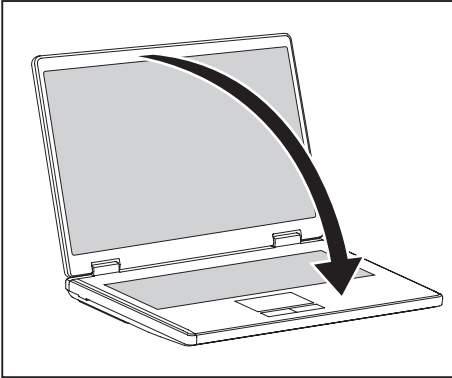
If you have assigned a password, you must enter this when requested to do so, in order to start the operating system password. You can find more information in the "Professional Notebook" operating instructions, "Security functions" section.

Switching off the Notebook

- Close all programs and shut down your operating system (please see operating system manual).



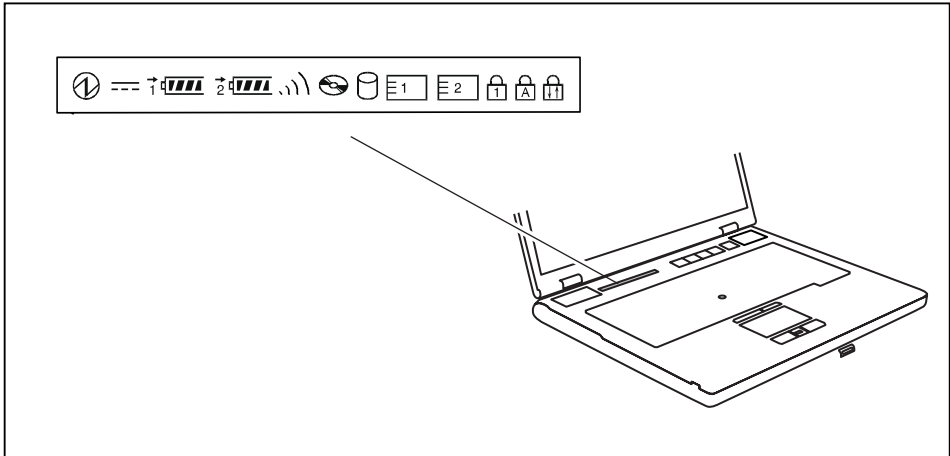
If the notebook cannot be shut down properly, press and hold the ON/OFF button for approximately four seconds. The notebook will switch off. Any unsaved data may be lost.



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

Status indicator panel

The status indicator panel is a small LCD panel on which various symbols appear. These symbols provide information about the status of the power supply, the drives, and the keyboard functions.



	Power-on indicator		CD/DVD indicator
	Power indicator		Hard disk indicator
	Battery charging indicator		PC card/ExpressCard indicators
	First battery indicator		Num Lock indicator
	Second battery indicator		Caps Lock indicator
	Radio components indicator		Scroll Lock indicator

The meanings of the symbols are as follows:

- Power-on indicator**

 - Indicator lights up: The notebook is switched on.
 - The indicator flashes (1 second on/ 1 second off). The notebook is in suspend mode
 - The indicator does not light up: The notebook is switched off.
- Power indicator**

Indicator lights up: The mains adapter is supplying power to the notebook.



Battery charging indicator

- Indicator lights up: The battery is charging.
- The indicator does not light up: The battery is either too hot or too cold to be charged.



Battery indicators

The charging state of the batteries is shown by 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 % to 25 % charged.

indicates that the battery is 25 % to 50 % charged.

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

indicates that the battery is 75% to 100% charged



Radio components indicator

- Indicator lights up: one or more radio components are active.



CD/DVD indicator

- Indicator lights up: The CD/DVD in the optical drive is being accessed. You may only remove the CD/DVD when the indicator is dark.
- Indicator flashes: A CD/DVD is being inserted or removed.



Hard disk indicator

Indicator lights up: The hard disk drive of the notebook is being accessed.



PC card/ExpressCard indicators

Indicator lights up: A PC card or an ExpressCard is being accessed.



Num Lock indicator

Indicator lights up: The **Num** key has been pressed. The virtual numeric keypad is activated. You can output the characters located at the upper right on the keys.



Caps Lock indicator

Indicator lights up: The Caps Lock key has been pressed. All the characters you type appear in upper case. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.



Scroll Lock indicator

Indicator lights up: The key combination **Fn** + **Scr** has been pressed. The effect this key has varies from programme to programme.

Key combinations

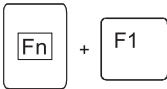
The following description of key combinations refers to functions when using Microsoft Windows. Some of the following key combinations may not function in other operating systems and with some device drivers.

Key combinations are entered 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.



The key combination **Ctrl** + **Alt Gr** or **Ctrl** + **Alt** can be used on external keyboards that do not feature a **Fn** key.



Sleep mode

This key combination is used to activate the suspend mode (S3).



Enable/disable loudspeakers

This key combination switches your notebook's loudspeakers off and on.

An audible signal will be produced when the loudspeakers are switched on.



Switch the touchpad on/off (if configured accordingly in BIOS)

This key combination enables and disables the touchpad.



Enlarge display

This key combination enlarges the screen to the full-screen mode or switches it back to the normal mode.



Decrease screen brightness

This key combination decreases the brightness of the screen.



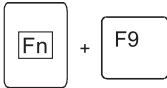
Increase screen brightness

This key combination increases the brightness of the screen.

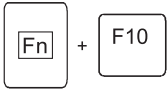


Decrease volume

This key combination reduces the volume of the integrated loudspeakers.

**Volume increase**

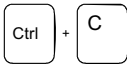
This key combination raises the volume of the integrated loudspeakers.

**Toggle output screen**

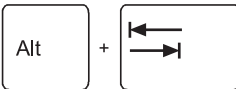
If an external monitor is connected, the monitor on which the output is to be displayed can be selected with this key combination.

You can opt to use:

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

**Halt current operation**

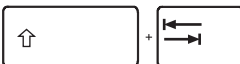
This key combination can be used to halt an operation instantly without clearing the keyboard buffer.

**Switch between open applications**

With this key combination you can switch between several open applications.

**Perform warm boot**

This key combination triggers a reset and reboots the notebook. First press and hold both the **Ctrl** and **Alt** key, then press the **Del** key. This will cause the Task Manager to be displayed. The key combination must be pressed a second time to reboot the system.

**Back tab**

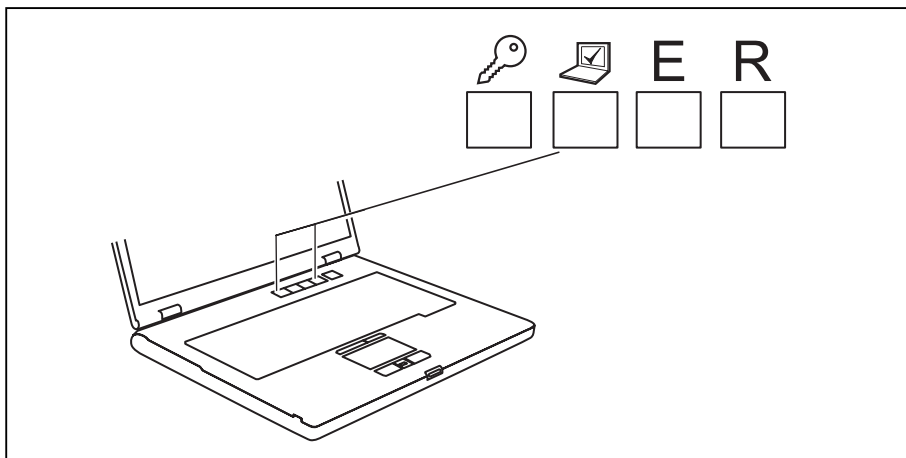
This key combination moves the cursor back to the previous tabular stop.



Key combinations using the Windows keys are detailed in the manual for your operating system.

Easy Launch keys

Your notebook is equipped with four Easy Launch keys.



Lock Workstation key

This key allows you to lock your workstation. However, you can also configure this key as desired.

Mobility Center key

This button starts the Mobility Center. However, you can also configure this key as desired.

E key

The E key is a simple way of activating and deactivating power management functions (e.g. reduce screen brightness), see the "Professional Notebook" manual.

R key (recovery)

Pressing the R key opens a dialog window in which you can backup or restore data.

Configuring Easy Launch keys

The *Application Panel* allows you to assign various functions to the Easy Launch keys.

Windows XP:

You will find the *Application Panel* under *Start - (Settings) - Control Panel - Additional Control Panel Options - Application Panel*.

Windows Vista:

You will find the *Application Panel* under *Start symbol - Programs - Lifebook Application Panel*.

Removing and installing the battery



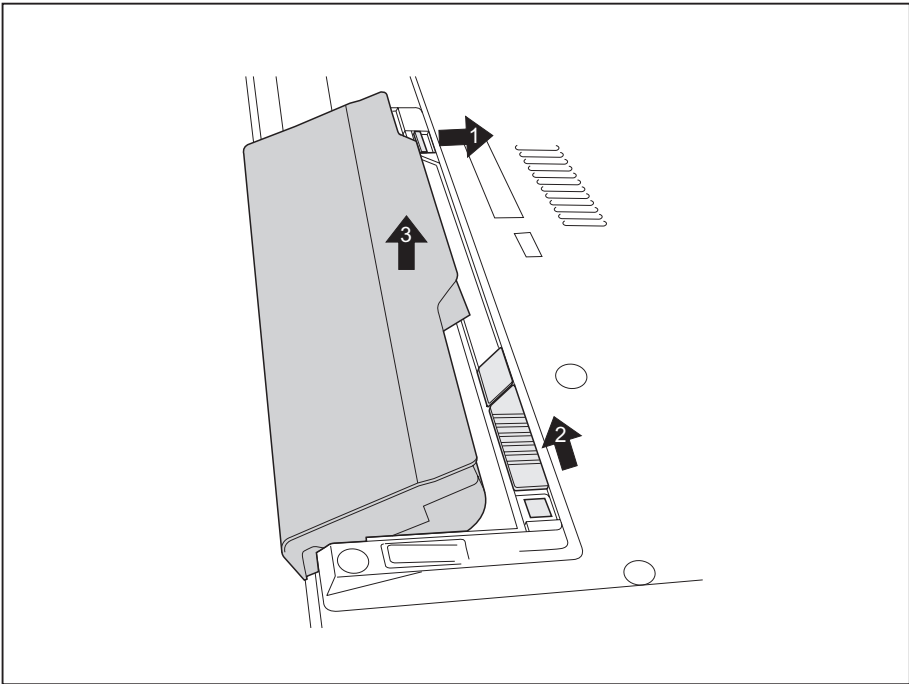
Only use batteries approved by Fujitsu Siemens Computers for your notebook.

Never use force when inserting or removing a battery.

Make sure that no foreign bodies get into the battery connections.

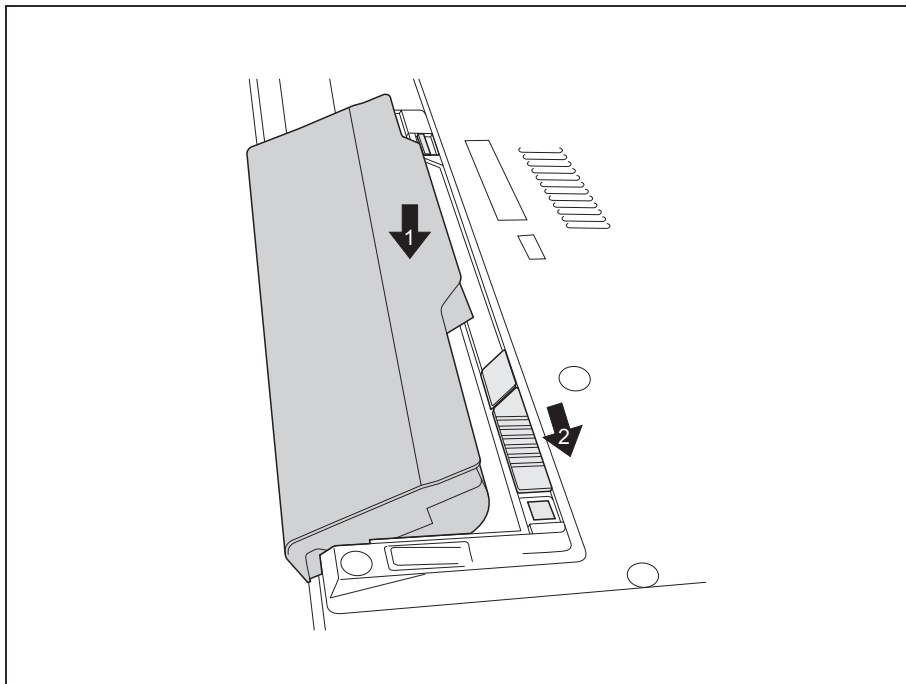
Removing the battery

- ▶ Switch the notebook off and pull the power plug out of the mains socket.
- ▶ Close the LCD screen so that it locks into place.
- ▶ Disconnect all cables connected to the notebook.
- ▶ Turn your notebook over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the notebook from being scratched.



- ▶ Slide the battery release in the direction of the arrow (1) and hold it in place.
- ↳ The battery release is unlocked.
- ▶ Slide the hard disk carrier in the direction of the arrow (2) as far as it will go.
- ↳ A red field appears on the battery release.
- ▶ Slide the battery release in the direction of the arrow (1) again and hold it in place.
- ▶ Tilt the battery on the red field of the battery release to one side and lift it out of the battery compartment (3).

Inserting the battery



- ▶ Insert the battery in the battery compartment at an angle and push it in the direction of the arrow (1) until it locks into place.
- ▶ Push the battery release latch in direction of the arrow (2).

SIM card

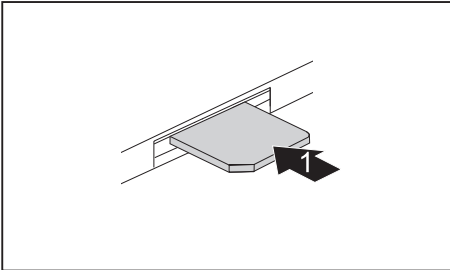
A SIM Card (Subscriber Identity Module) is a chip card which is inserted in a mobile telephone or notebook to enable access to a mobile radio network.



Follow the instructions supplied by the provider of the SIM card.

Inserting the SIM card

- ▶ Switch the notebook off and pull the power plug out of the mains socket.
- ▶ Close the LCD screen so that it locks into place.
- ▶ Disconnect all cables connected to the notebook.
- ▶ Turn your notebook over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the notebook from being scratched.
- ▶ Remove the battery (see Section ["Removing the battery", Page 15](#)).

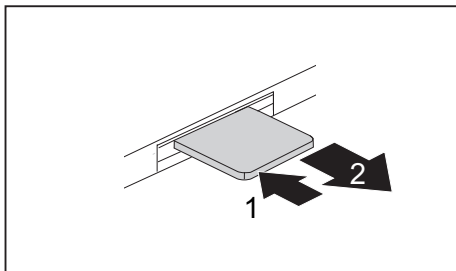


- ▶ Insert the SIM card into the slot so that the angled corner is at the front left when pointing towards the slot and the chip is facing downwards (1). Ensure that the SIM card snaps audibly into place.

- ▶ Reinstall the battery (see ["Inserting the battery", Page 16](#)).
- ▶ Turn the notebook the right way up and place it on a flat surface.
- ▶ Reconnect the cables that you disconnected previously.

Removing a SIM card

- ▶ Switch the notebook off and pull the power plug out of the mains socket.
- ▶ Close the LCD screen so that it locks into place.
- ▶ Disconnect all cables connected to the notebook.
- ▶ Turn your notebook over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the notebook from being scratched.
- ▶ Remove the battery (see Section ["Removing the battery", Page 15](#)).



- ▶ Push the SIM card inwards slightly to eject it from the slot (1).
- ▶ Pull the SIM card out of the slot in the direction of the arrow (2).

- ▶ Reinstall the battery (see ["Inserting the battery", Page 16](#)).
- ▶ Turn the notebook the right way up and place it on a flat surface.
- ▶ Reconnect the cables that you disconnected previously.

Radio components: UMTS (optional)/wireless LAN/Bluetooth

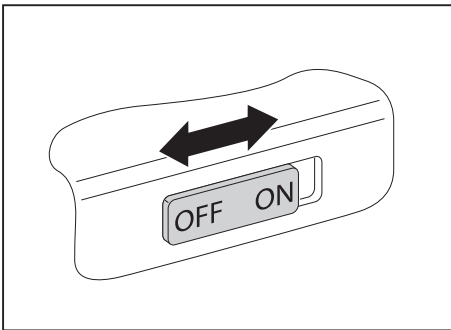


The installation of a wireless LAN, Bluetooth or UMTS module not approved by Fujitsu Siemens Computers GmbH voids the permits (CE!, FCC) issued for this device.

Fujitsu Siemens Computers GmbH has printed the correct permit number for all factory-installed radio components on the rating plate.

The modules for radio components are switched off during shipping.

Switching the radio components on and off



► Slide the ON/OFF button into the "ON" position to activate the radio components.

or

► Slide the ON/OFF button to the "OFF" position to deactivate the radio components.



If you switch off the radio components, the Bluetooth and UMTS modules are powered off and the wireless LAN transmission unit (antenna) is switched off.

The *Wireless Selector* enables you to switch the various radio components on and off.

You can also deactivate the radio components individually in the *BIOS setup*.

Pay attention to the additional safety notes for devices with radio components provided in the "Safety" manual.

Details on using the wireless LAN are contained in the online help for your wireless LAN software and in the "Wireless LAN" manual. (The "Wireless LAN" manual can be found on the "Drivers & Utilities" CD/DVD.)

You can find more information on how to use Bluetooth on the CD you received with your Bluetooth software.

You can obtain more information on UMTS from your service provider.

Removing and installing components during servicing



Only qualified technicians should repair your notebook. Unauthorised opening or incorrect repair may greatly endanger the user (electric shock, fire risk) and will invalidate your warranty.

You may remove and install the components described in this chapter yourself after consulting the Hotline/Help Desk.



If you remove and install components without consulting the Hotline/Help Desk, then the warranty of your notebook will be voided.

Notes on installing and removing boards and components

- Switch the notebook off and pull the power plug out of the mains socket.
- Remove the battery.
- Take care when you use the locking mechanisms on the battery and any other component.
- Never use sharp objects such as screwdrivers, scissors or knives as leverage to remove covers.



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

When handling boards fitted with ESDs, you must always observe the following points:

- You must always discharge static build up (e.g. by touching a grounded object) before working.
- 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.

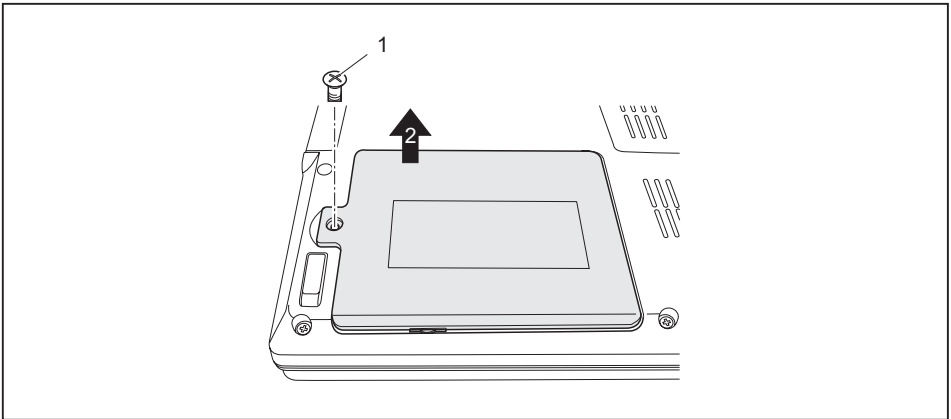
Hard disk

The hard disk is the most important storage medium of your notebook. You can work considerably faster and more efficiently if you copy applications and files from CDs to your hard disk.

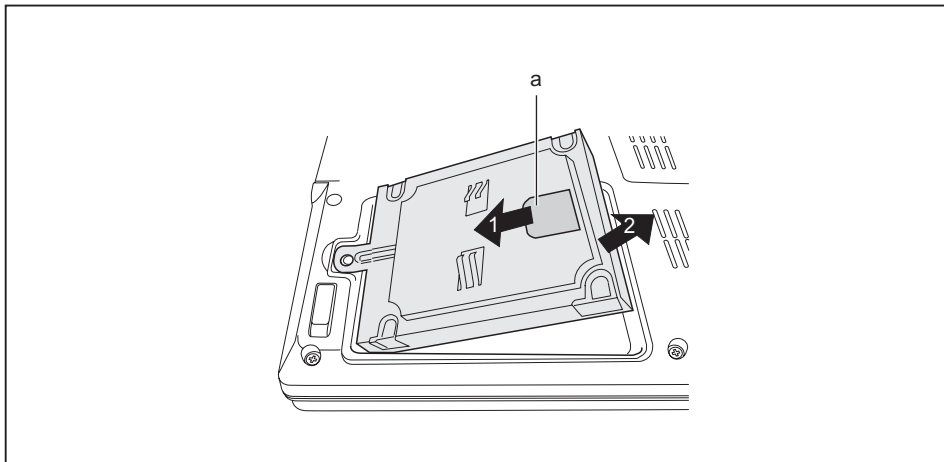
When the hard disk is accessed, the hard disk indicator lights up in the status indicator panel, see ["Status indicator panel", Page 10](#).

Removing the hard disk

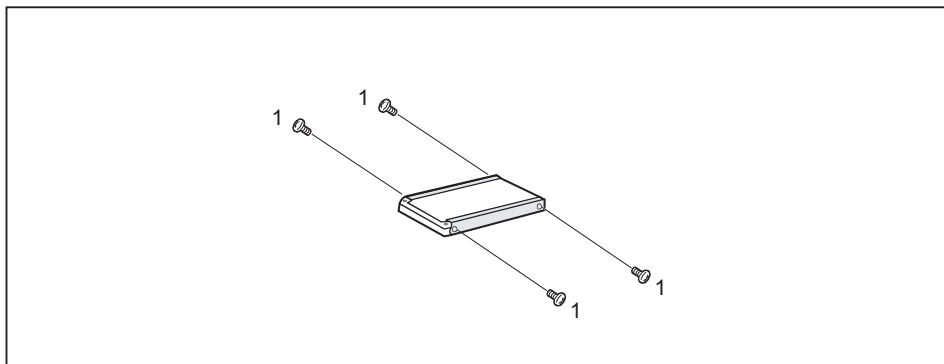
- ▶ Switch off your notebook and disconnect the power plug from the mains.
- ▶ Close the LCD screen so that it locks into place.
- ▶ Disconnect all cables connected to the notebook.
- ▶ Turn your notebook over and place it on a stable, flat and clean surface. If necessary, lay a non-slip cloth on this surface to prevent the notebook from being scratched.
- ▶ Remove the battery (see ["Removing the battery", Page 15](#)).



- ▶ Remove the screw (1).
- ▶ Lift the cover off the notebook (2).

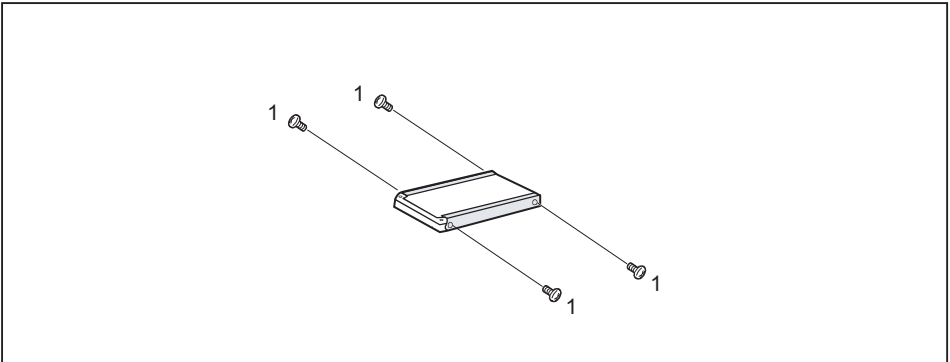


- ▶ Grasp the hard disk by the pulling aid (a) and pull in the direction indicated by the arrow (1).
- ↳ The hard disk separates from the disk connector.
- ▶ Lift the hard disk out of the hard disk compartment (2).

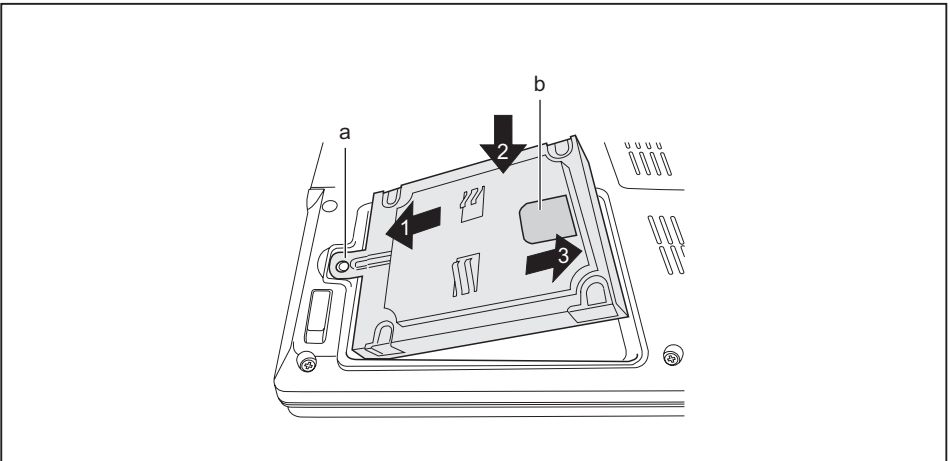


- ▶ Loosen the screws (1) of the hard disk carrier.
- ▶ Remove the hard disk from the hard disk carrier.

Installing the hard disk



- Insert the hard disk into the hard disk carrier.
- Fasten the hard disk carrier with the screws (1).

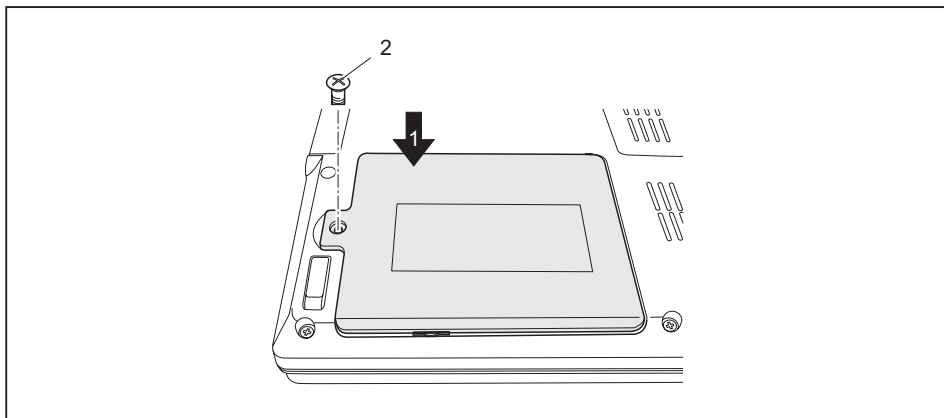


- Insert the hard disk at an angle into the hard disk compartment (1). Ensure that the eyelet (a) on the hard disk holder is inserted correctly into the existing opening.
- Place the hard disk in the hard disk compartment (2).
- Pull the hard disk by the pulling aid (b) in the direction indicated by the arrow (3) until the hard disk can be felt to latch into the hard disk connector.



If the pulling aid (b) sticks out too far from the hard disk, it will not be possible to fasten the hard disk cover correctly.

- Lay the pulling aid (b) down flat on the hard disk.



- ▶ Place the cover on its mounting location (1), ensuring it snaps into place.
- ▶ Fasten the cover with the screw (2).
- ▶ Install the battery again (see ["Inserting the battery", Page 16](#)).
- ▶ Turn the notebook the right way up and place it on a flat surface.
- ▶ Reconnect the cables that you disconnected previously.

Removing and installing memory modules

The notebook will not start without memory modules, as no fixed RAM is installed.

Your notebook supports dual-channel DDR2 technology.



The dual-channel DDR2 technology can only be used with two identical memory modules. When two different memory modules are installed, only "single-channel" performance is supported.

If you are asked by the Hotline/Help Desk to remove and install the memory modules yourself, proceed as follows:



Pay attention to the relevant safety notes provided in the "Important notes" chapter.

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

Only use approved memory expansion modules in your notebook (see Section ["Technical data", Page 28](#)).

Never use force when installing or removing memory modules.

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

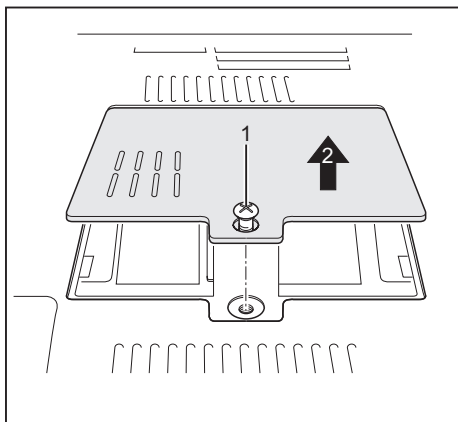


Individual components (e.g. the processor heat sink) can become very hot during operation. Therefore, we recommend that you wait one hour after switching off the notebook before removing or installing the memory modules. Otherwise, there is a risk of suffering burns!

As some non-ESD safe components are exposed, please observe the section ["Notes on installing and removing boards and components", Page 20](#).

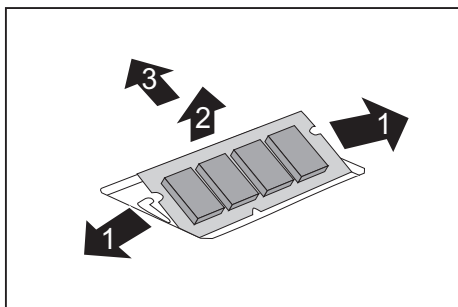
- ▶ Switch your notebook off and unplug the mains adapter from the mains outlet.
- ▶ Close the LCD screen so that it locks into place.
- ▶ Disconnect all cables connected to the notebook.
- ▶ Turn your notebook over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the notebook from being scratched.
- ▶ Remove the battery (see ["Removing the battery", Page 15](#)).

Removing the cover



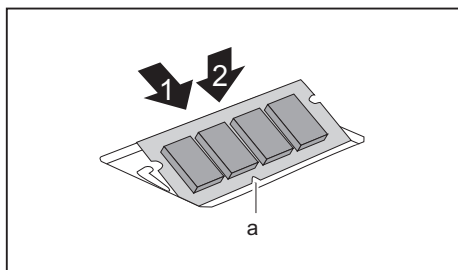
- ▶ Remove the screws (1).
- ▶ Pull the cover off the notebook (2).

Removing memory modules



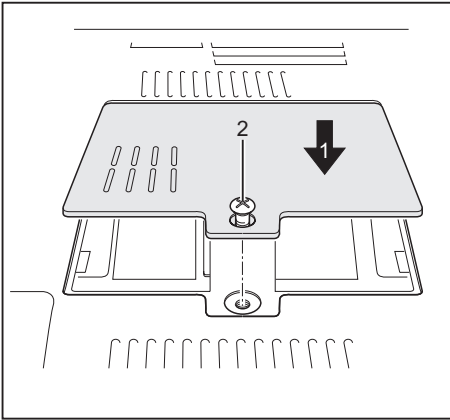
- ▶ Carefully push the two mounting clips outwards (1).
- ↳ The memory module snaps upwards (2).
- ▶ Pull the memory module out of its slot in the direction of the arrow (3).

Installing a memory module



- ▶ Insert the memory module with the contacts and the recess (a) facing the slot (1).
- ▶ Carefully push the memory module downwards until you feel it click into place (2).

Attaching the cover



- ▶ Place the cover in the correct mounting position (1).
- ▶ Secure the cover with the screws (2).

- ▶ Reinstall the battery (see ["Inserting the battery", Page 16](#)).
- ▶ Turn the notebook the right way up and place it on a flat surface.
- ▶ Reconnect the cables that you disconnected previously.

Technical data

Notebook

General	
Processor	Intel Core2 Duo Processor
Main memory	512 MB, 1 GB or 2 GB DDR2-667, SO-DIMM
Possible modules:	<ul style="list-style-type: none"> • Second battery • Second hard disk drive • Super-multi format DVD burner with double layer support • Weight Saver
Electrical data	
Regulations complied with	CE, EN60950, TBR 21
Protection class	II
Maximum power draw (notebook on with battery charging)	80 W
LCD screen	
Screen size	15 inch TFT XGA (1024 x 768) 15 inch TFT SXGA+ (1400 x 1050)
Max. resolution:	1400 x 1050 / 16 Ml. colours External up to 1920 x 1200
Graphics card	
Chip	Intel® GMA X3000
Video memory (VRAM)	Shared Memory
Audio	
Soundchip	HD Audio Codec ALC262
Dimensions/weight	
Width x Depth x Height (front/back)	approx. 329 mm x 274 mm x 38 mm
Weight with battery and optical drive	approx. 2.7 kg
Input devices	
Keyboard	86 keys
Touchpad	1 touchpad, 2 touchpad keys, 1 scroll key
TouchStick	1 touchstick, 2 touchstick keys
Slots	
ExpressCard slot	1 x ExpressCard/34 or ExpressCard/54
PC card slot (CardBus/PCMCIA)	1 x PCMCIA type I or II
SmartCard slot	1 x
SIM card socket	1 x
Memory card slot	1 x SD or MS card

Ports	
Microphone port	3.5 mm mono mini-jack
Headphone port	3.5 mm stereo mini jack
Infrared interface	IrDA 1.1
Modem connection (optional)	Connector, RJ11
USB port	4 x USB 2.0
Parallel port	25-pin socket
Monitor port	15-pin socket
Serial port	9-pin plug
LAN port	Socket, RJ45
S-Video out socket	7-pin mini DIN female connector
Docking port	100-pin
Environmental conditions	
Environment class DIN IEC 721	3K2
Mechanism class DIN IEC 721	7M2
Temperature:	
Operation	5 °C ... 35 °C
Transport	-15 °C ... 60 °C



The data sheet of this notebook contains further technical data. The data sheet can be found on your notebook or on the Internet at "www.fujitsu-siemens.com" or on the "Drivers & Utilities" CD/DVD.

Battery

LIFEBOOK E8310

	6-cell rechargeable battery 1	6-cell rechargeable battery 2
Rated voltage	10.8 V	10.8 V
Rated capacity	56.2 Wh	41 Wh

LIFEBOOK E8410

	8-cell rechargeable battery	6-cell rechargeable battery
Rated voltage	14.4 V	10.8 V
Rated capacity	74.9 Wh	41 Wh



The operating time depends on the device equipment, the active applications and the energy saving settings.

Mains adapter

Primary

Rated voltage	100 V or 240 V (automatic)
Rated frequency	50 Hz to 60 Hz (automatic)

Secondary

Rated voltage	19 V
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Additional mains adapters and an power cables are can be ordered at any time.

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