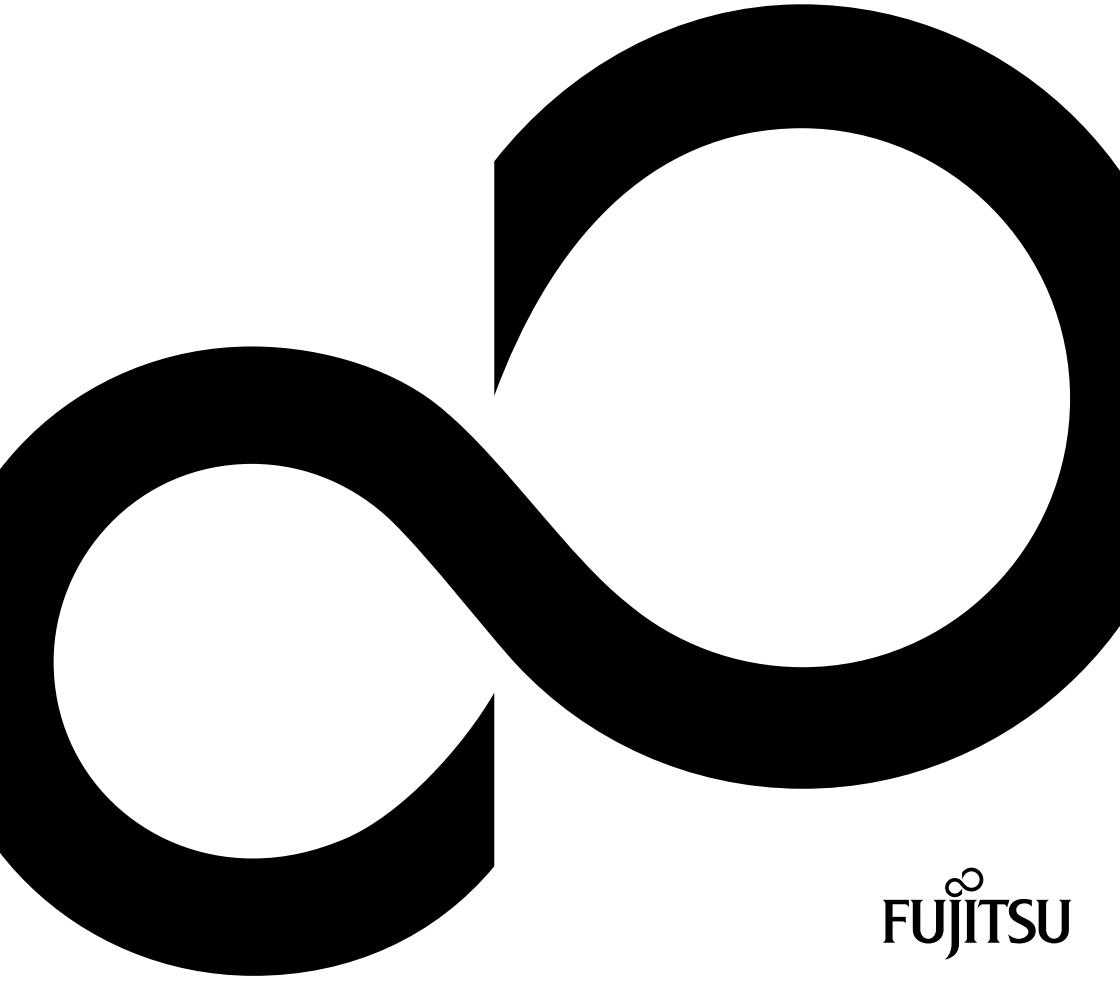
CELSIUS H700



FUJITSU

Congratulations, you have decided to buy an innovative Fujitsu product.

The latest information about our products, useful tips, updates etc. is available from our website: "http://ts.fujitsu.com"

For automatic driver updates, go to: "http://support.ts.fujitsu.com/com/support/index.html"

Should you have any technical questions, please contact:

- our Hotline/Service Desk (see Service Desk list or visit: "http://ts.fujitsu.com/support/servicedesk.html")
- Your sales partner
- Your sales office

We hope you really enjoy using your new Fujitsu system.

Copyright
Fujitsu Technology Solutions 10/2010

Published by
Fujitsu Technology Solutions GmbH
Mies-van-der-Rohe-Straße 8 (Mies-van-der-Rohe Street No. 8)
80807 Munich, Germany

Contact
http://ts.fujitsu.com/support

All rights reserved, including intellectual property rights. Subject to technical alterations. Delivery subject to availability. No warranty is offered or liability accepted in regard of the completeness, correctness, or current applicability of any data or illustrations. Brand names may be protected trademarks of the respective manufacturer and/or protected by copyright. Use of these by third parties for their own purposes may constitute an infringement of the holders' rights. Further information can be found at "http://ts.fujitsu.com/terms_of_use.html"

Order No. Fujitsu Technology Solutions GmbH: A26391-K311-Z300-1-7619, edition 2

CELSIUS H700

Operating Manual

Innovative technology	**7**
Ports and operating elements	**9**
Important notes	**12**
First-time setup of your device	**15**
Working with the notebook	**18**
Security functions	**55**
Connecting external devices	**65**
Removing and installing components during servicing	**72**
Settings in BIOS Setup Utility	**79**
Troubleshooting and tips	**81**
Technical data	**89**
Manufacturer's notes	**92**
Index	**99**

Microsoft, MS, Windows XP, Windows Vista and Windows 7 are registered trademarks of the Microsoft Corporation.

Adobe Reader is a trademark of Adobe Systems Incorporated.

MultiMediaCard is a registered trademark of Infineon Technologies AG

Sony and Memory Stick are registered trademarks of Sony Electronics, Inc.

All other trademarks referenced are trademarks or registered trademarks of their respective owners, whose protected rights are acknowledged.

Copyright © Fujitsu Technology Solutions GmbH 2010
All rights reserved, including rights of translation, reproduction by printing, copying or similar methods, in part or in whole.

In the event of violations, perpetrators will be liable to prosecution for damages.

All rights reserved, including rights created by patent grant or registration of a utility model or design.

Subject to availability and technical modifications.

Contents

Innovative technology **7**
Further information 7
Notational conventions 8

Ports and operating elements **9**

Important notes **12**
Safety notes 12
Additional safety notes for devices with radio components 12
Energy saving 13
Energy saving under Windows 13
Travelling with your notebook 13
Before you travel 13
Notebook: transporting 14
Cleaning the notebook 14

First-time setup of your device **15**
Unpacking and checking the device 15
Selecting a location 16
Mains adapter connecting 16
Switching on the device for the first time 17

Working with the notebook **18**
Status indicators 18
Switching on the notebook 21
Notebook: switching off 21
Keyboard 22
Virtual numeric keypad 24
Key combinations 24
Country and keyboard settings 26
Application keys 27
Programming the application keys 28
Touchpad and touchpad buttons 28
Moving the pointer 28
Selecting an item 29
Executing commands 29
Dragging items 29
LCD screen 30
Webcam 31
Rechargeable battery 32
Charging, caring for and maintaining the battery 32
Removing and installing the battery 32
Module 34
Removing a module 35
Installing a module 36
Optical drive 36
Handling data carriers 36
CD/DVD indicator 37
Inserting or removing a data carrier 37
Manual removal (emergency removal) 38
Removing and fitting the dust removal cover (ventilation slot cover) 38
Using the power-management features 40

Memory cards ... 41
Supported formats ... 41
Inserting the memory card ... 41
Removing the memory card ... 42
PC cards and ExpressCards ... 43
Inserting the card ... 43
Removing the card ... 44
Loudspeakers and microphones ... 44
Integrated 56k modem ... 45
Connecting notebook modem to telephone wall socket ... 46
SIM card ... 47
Inserting the SIM card ... 47
Removing a SIM card ... 47
Wireless LAN/ Bluetooth (device-dependent) /UMTS (device-dependent) ... 48
Switching the wireless components on and off ... 48
Setting up WLAN access ... 49
Access via UMTS ... 49
Ethernet and LAN ... 49
Your Port Replicator (optional) ... 50
Ports on the Port Replicator ... 50
Connecting the notebook to the Port Replicator ... 51
Connecting the mains adapter to the Port Replicator ... 53
Switching on the notebook via the port replicator ... 53
Switching off notebook via Port Replicator ... 53
Disconnecting the notebook from the Port Replicator ... 54

Security functions ... 55
Configuring the fingerprint sensor ... 55
Use Kensington Lock ... 56
Configuring password protection in BIOS Setup Utility ... 56
Protecting BIOS Setup Utility (supervisor and user password) ... 56
Password protection for booting of the operating system ... 57
Password protection for the hard disk ... 58
Activating hard disk protection ... 58
Deactivating hard disk protection ... 59
Boot from Removable Media ... 59
Owner Information (device-dependent) ... 60
Virus Warning (device-dependent) ... 60
SmartCard reader ... 61
Inserting the SmartCard ... 61
SmartCard as software protection (SmartCase™ Logon+) ... 62
Trusted Platform Module (TPM) (device-dependent) ... 63
Enabling TPM ... 64
Disabling TPM ... 64

Connecting external devices ... 65
Connecting an external monitor ... 66
Connecting external devices to the parallel or serial port ... 67
Port settings ... 67
Device drivers ... 67
Connecting USB devices ... 68
Connecting an external SATA hard disk (eSATA) ... 69
Safe removal of eSATA and USB devices ... 69
Connecting FireWire devices ... 70

Connecting external audio devices ... 71
Microphone port / Line In ... 71
Headphone port ... 71

Removing and installing components during servicing ... 72
Notes on installing and removing boards and components ... 72
Preparing to remove components ... 73
Installing and removing memory expansion ... 73
Removing a cover ... 74
Removing memory modules ... 74
Installing a memory module ... 75
Attaching the cover ... 75
Removing and installing the hard disk ... 76
Removing a cover ... 76
Removing a hard disk ... 77
Installing a hard disk ... 77
Attaching the cover ... 78
Finishing component removal ... 78

Settings in BIOS Setup Utility ... 79
Starting the BIOS Setup Utility ... 79
Operating BIOS Setup Utility ... 79
Exiting BIOS Setup Utility ... 80
Exit Saving Changes - save changes and exit BIOS Setup Utility ... 80
Exit Discarding Changes – Discard changes and exit BIOS Setup Utility ... 80
Load Setup Defaults – Copy Standard Entries ... 80
Discard Changes – Discard changes without exiting the BIOS Setup Utility ... 80
Save Changes - save changes without exiting the BIOS Setup Utility ... 80
Save Changes and Power Off ... 80

Troubleshooting and tips ... 81
Help if problems occur ... 82
Restoring the hard disk contents under Windows ... 82
The notebook’s date or time is incorrect ... 83
When certain characters are entered on the keyboard, only numerals are written ... 83
The notebook’s LCD screen remains blank ... 83
The LCD screen is difficult to read ... 83
The external monitor remains blank ... 84
The external monitor is blank or the image is unstable ... 84
The notebook cannot be started ... 85
The notebook stops working ... 85
The printer does not print ... 86
The radio connection to a network does not work ... 86
Acoustic warnings ... 86
Error messages on the screen ... 86

Technical data ... 89
Notebook ... 89
Rechargeable battery ... 90
Mains adapter 100 W ... 90
Port Replicator (optional) ... 91

Manufacturer’s notes ... 92
Energy Star ... 92

Disposal and recycling 92
Declarations of Conformity 92
CE marking 93
Regulatory notices 93
Regulatory information for notebooks without radio device 94
DOC (Industry CANADA) notices 95
FCC regulatory information for notebooks with radio device 97

Index 99

Innovative technology

... and ergonomic design make your device a reliable and convenient companion.

The device boots very quickly, is ready for immediate use and offers a particularly long operating time because of its high capacity battery.

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

Information on the connections and user components of your notebook can be found in "Ports and operating elements", Page 9.

Further information

The Windows drivers for your device can be found on our Internet site. The factory installation of your device does not support any other operating system. Fujitsu Technology Solutions accepts no liability whatsoever if any other operating system is used.

Software oriented components of these instructions refer to Microsoft products, if they come within the scope of the delivery.

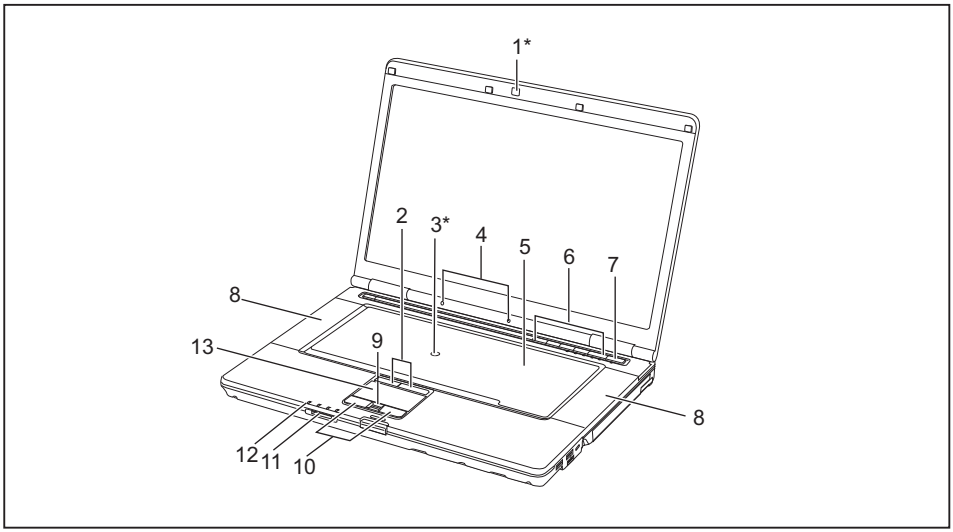
If you install other software products, pay attention to the operating instructions of the manufacturer.

Notational conventions

	Pay particular attention to text marked with this symbol. Failure to observe these warnings could pose a risk to health, damage the device or lead to loss of data. The warranty will be invalidated if the device becomes defective through failure to observe these warnings.
	Indicates important information for the proper use of the device.
►	Indicates an activity that must be performed
↳	Indicates a result
`This font`	indicates data entered using the keyboard in a program dialogue or at the command line, e.g. your password (**`Name123`**) or a command used to start a program (**`start.exe`**)
`This font`	indicates information that is displayed on the screen by a program, e.g.: `Installation is complete.`
This font	indicates • terms and texts used in a software interface, e.g.: Click on *Save* • names of programs or files, e.g. *Windows* or *setup.exe*.
"This font"	indicates • cross-references to another section, e.g. "Safety information" • cross-references to an external source, e.g. a web address: For more information, go to "http://ts.fujitsu.com" • Names of CDs, DVDs and titles or designations of other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety" Manual
Key	indicates a key on the keyboard, e.g: F10
This font	indicates terms and texts that are emphasised or highlighted, e.g.: **Do not switch off the device**

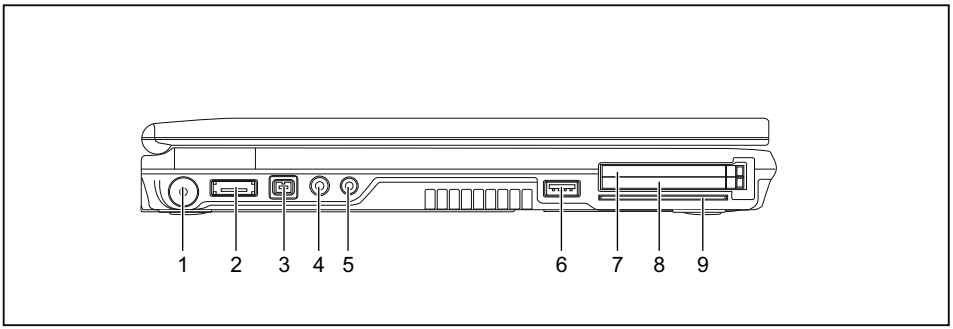
Ports and operating elements

This chapter presents the individual hardware components of your device. It gives an overview of the indicators and ports of the device. Please familiarise yourself with these components before you start to work with the device.



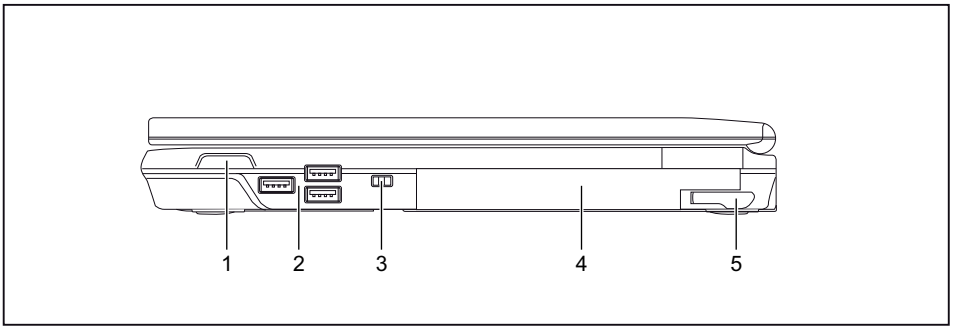
1 = WebCam (* device-dependent)
2 = TouchStick buttons
3 = TouchStick (* optional)
4 = Microphones
5 = Keyboard
6 = Application buttons
7 = ON/OFF switch
8 = Loudspeakers
9 = Fingerprint sensor
10 = Touchpad buttons
11 = Memory card slot
12 = Status indicators
13 = Touchpad

Left panel



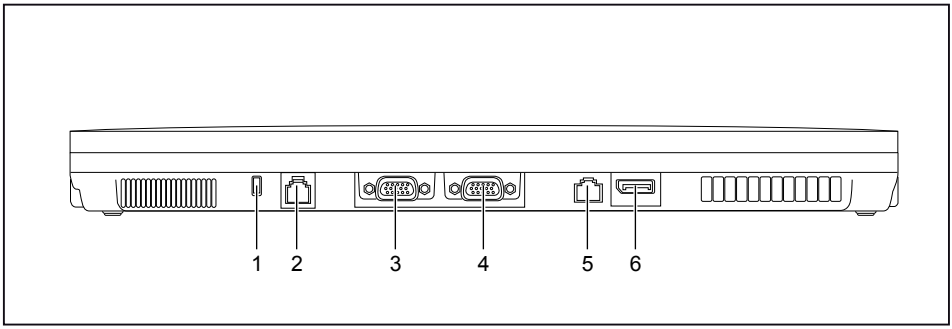
1 = DC input connector (DC IN)
2 = eSATA port
3 = FireWire port
4 = Microphone port
5 = Headphone port
6 = USB port
7 = ExpressCard slot
8 = PC card slots
9 = SmartCard reader

Right side



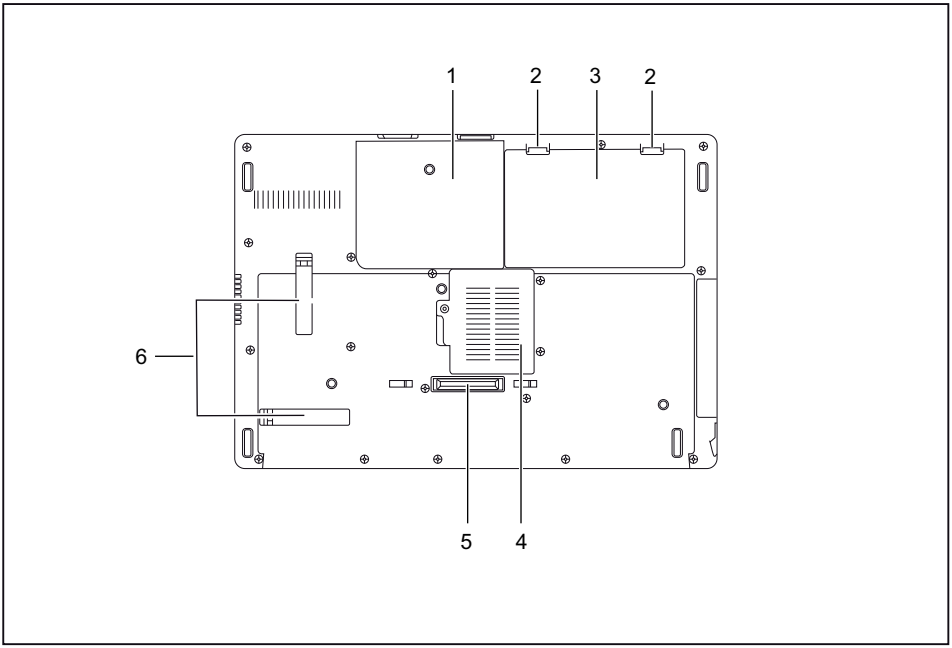
1 = ON/OFF switch for radio components
2 = USB ports
3 = Kensington Lock
4 = Module bay with optical drive
5 = Eject lever for module

Rear



1 = Kensington Lock
2 = Modem port
3 = VGA monitor port
4 = Serial port
5 = LAN port
6 = Display port

Underside



1 = Hard disk service compartment
2 = Battery lock
3 = Rechargeable battery
4 = Memory service compartment
5 = Port for port replicator
6 = Ventilation slot cover

Important notes

This chapter contains essential safety information which must be followed when working with your notebook. Other notes also provide useful information which will help you with your notebook.

Safety notes

Please note the information provided in the "Safety" manual and in the following safety notes.

Please pay special attention to the sections in the manual marked with the symbol on the left.

When connecting and disconnecting cables, observe the relevant notes in this operating manual.

Read the information on the ambient conditions in the "Technical data", Page 89 and "First-time setup of your device", Page 15 before preparing your notebook for use and switching it on for the first time.

When cleaning the device, please observe the relevant notes in the section "Cleaning the notebook", Page 14.

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

Please refer to the notes in the chapter "Removing and installing components during servicing", Page 72.

This notebook complies with the relevant safety regulations for data processing equipment. If you have questions about using your notebook in a particular area, please contact your sales outlet or our Hotline/Service Desk.

Additional safety notes for devices with radio components

If a radio component (Wireless LAN, Bluetooth, UMTS) is integrated in your notebook, you must be sure to observe the following safety notes when using your notebook:

- Switch off the radio components when you are in an aircraft or driving in a car.
- Switch off the radio components when you are in a hospital, an operating room or near a medical electronics system. The transmitted radio waves can impair the operation of medical devices.
- Switch off the radio components when you let the device get near flammable gases or into hazardous environments (e.g. petrol station, paintshops), as the transmitted radio waves can cause an explosion or a fire.

For information on how to switch radio components on and off, see chapter "Switching the wireless components on and off", Page 48.

Energy saving

Switch the notebook off when it is not in use. Switch off external, connected devices if you are not using them. If you use the energy saving functions, the notebook uses less energy. You will then be able to work for longer before having to recharge the battery.

Energy efficiency is increased and the environmental impact is reduced. You save money while protecting the environment.

Energy saving under Windows

► Make use of the power management features (see "Using the power-management features", Page 40").

Travelling with your notebook

Please observe the points listed below when travelling with your notebook.

Before you travel

► Back up important data stored on your hard disk.
► Switch off the radio component for data security reasons. With data traffic via a wireless connection, it is also possible for unauthorised third parties to receive data.

Information on activating data encryption is provided in the documentation for your radio component.

► If you wish to use your notebook during a flight, first check with the flight attendants if it is OK to do so.

When travelling in other countries

► If you are travelling abroad, check that the mains adapter can be operated with the local mains voltage. If this is not the case, obtain the appropriate mains adapter for your notebook. Do not use any other voltage converter!
► Check whether the local mains voltage and the power cable are compatible. If this is not the case, buy a power cable that matches the local conditions.
► Enquire with the corresponding government office of the country you will be travelling in as to whether you may operate the radio component integrated in your notebook there (see also "CE marking", Page 93).

Notebook: transporting

Protect the notebook from severe shocks and extreme temperatures (e.g. direct sunlight in a car).

- ► If your device has an optical drive, remove all data media (e.g. CD, DVD) from the drives.
- ► Switch the notebook off.
- ► Unplug the mains adapter and all external devices from the power socket.
- ► Disconnect the mains adapter cable and the data cables for all external devices.
- ► Close the LCD screen.
- ► To protect against damaging jolts and bumps, use a notebook carrying case to transport your notebook.

Cleaning the notebook

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

Only use cleaning products designed for computers. Normal household cleaners and polishes can damage the markings on the keyboard and the device, the paintwork or the notebook itself.

Ensure that no liquid enters the notebook.

The LCD screen very sensitive to scratches. Only clean the display surface with a very soft, slightly damp cloth.

- ► Switch the notebook off.
- ► In order to prevent accidentially switching the device on, remove the power cable from the mains adaptor and remove the battery (see "Removing and installing the battery", Page 32).

↳ The surface can be cleaned with a dry cloth. If particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

To clean the keyboard and the touchpad, if available, you can use disinfectant wipes.

Ensure that no liquid enters the device.

First-time setup of your device

Please read the chapter "Important notes", Page 12.

If your device is equipped with a Windows operating system, the necessary hardware drivers and supplied software are already pre-installed.

Before you switch on the device for the first time, connect it to the mains voltage using the mains adapter, see "Mains adapter connecting", Page 16. The mains adapter must be connected during the entire installation process.

A system test is performed when your device is first switched on. Various messages can appear. The display may remain dark for a short time or may flicker.

Please follow the instructions on the screen.

NEVER switch off your device during the first-time setup process.

On delivery, the battery can be found in the battery compartment or in the accessories kit. The battery must be charged if you want to operate your device using the battery.

When used on the move, the built-in battery provides the device with the necessary power. You can increase the operating time by using the available energy-saving functions.

For instructions on how to connect external devices (e.g. mouse, printer) to your device, please refer to the operating manual for your device.

Unpacking and checking the device

Should you discover any damage that occurred during transportation, notify your local sales outlet immediately!

- ► Unpack all the individual parts.
- ► Check your device for any visible damage which may have occurred during transportation.

You may need the packaging in the future, if you need to transport your device.

Selecting a location

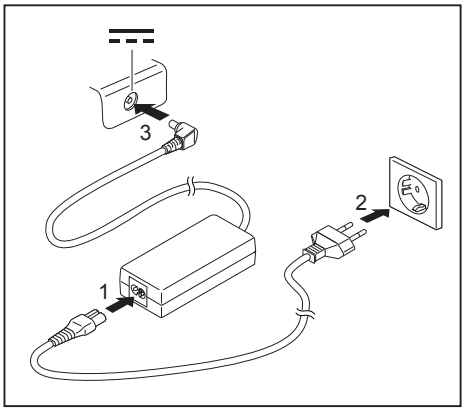
Select a suitable location for the device before setting it up. Follow the instructions below when doing so:

- Never place the device or the mains adapter on a heat-sensitive surface. The surface could be damaged as a result.
- Never place the device on a soft surface (e.g. carpeting, upholstered furniture, bed). This can block the air vents and cause overheating and damage.
- The underside of the device heats up during normal operation. Prolonged contact with the skin may become unpleasant or even result in burns.
- Place the device on a stable, flat, non-slippery surface. Please note that the rubber feet of the device may mark certain types of delicate surfaces.
- Keep other objects at least 100 mm away from the device and its mains adapter to ensure adequate ventilation.
- Never cover the ventilation slots of the device.
- Do not expose the device to extreme environmental conditions. Protect the device from dust, humidity, and heat.

Mains adapter connecting

Observe the safety precautions in the enclosed "Safety" manual.

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



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

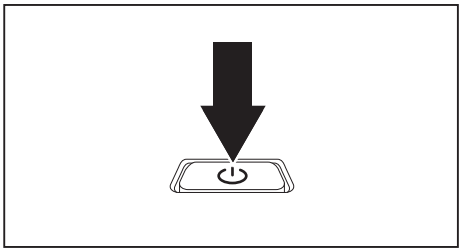
Switching on the device for the first time

On devices with ON/OFF switch for wireless components: Slide the ON/OFF switch for wireless components to the ON position before switching on the device.

When you switch on the device for the first time, the supplied software is installed and configured. Because this procedure must not be interrupted, you should set aside enough time for it to be fully completed and connect the device to the mains using the mains adapter.

During the installation process, DO NOT restart the device unless you are requested to do so!

To make it easier to use your device for the first time, the operating system is pre-installed on the hard disk.



► Switch on your device.

► During installation, follow the instructions on screen.

If a Windows operating system is installed on your device, you will find more information on the system and drivers, help programmes, updates, manuals etc. on the device or on the Internet at "http://ts.fujitsu.com/support".

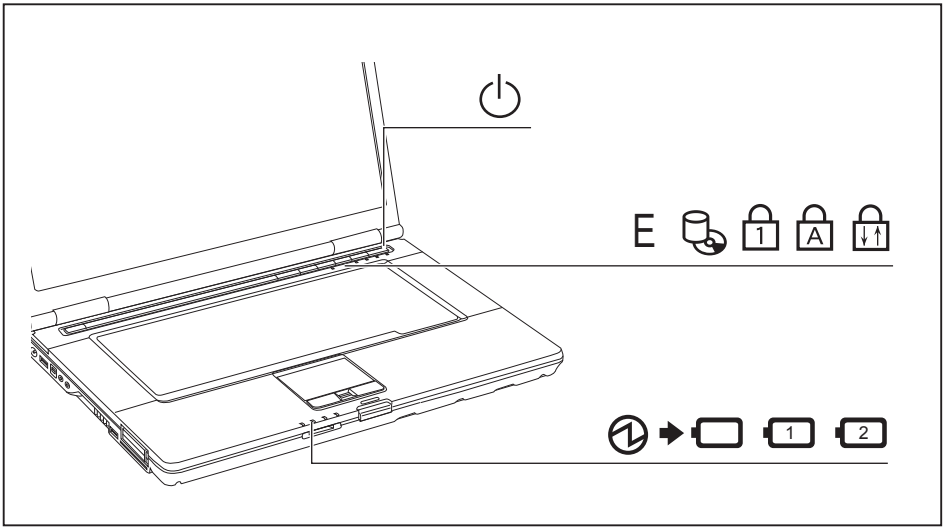
Working with the notebook

This chapter describes the basics for operating your notebook. Please read the chapter entitled "Connecting external devices", Page 65 for instructions on how to connect devices such as a mouse and a printer to the notebook.

Please refer to the notes in "Important notes", Page 12.

Status indicators

The status indicators provide information about the status of the power supply, the drives and the keyboard functions.

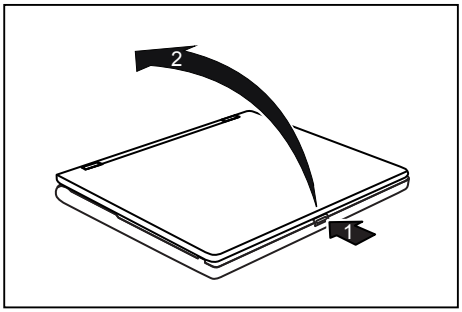


Indicator	Description
	Power-on indicator • The indicator is illuminated: The notebook is switched on. • The indicator flashes (1 second on/1 second off): The notebook is in power saving mode. • The indicator is not illuminated: The notebook is switched off or is in Save-to-Disk mode.

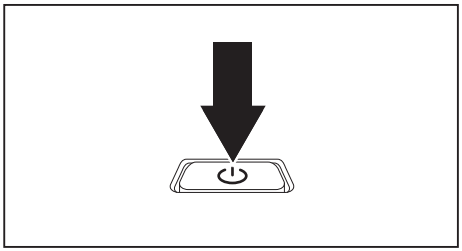
Indicator	Description
	First battery indicator • The indicator lights up green: The first battery is charged to between 51% and 100% of maximum capacity. • The indicator slowly flashes green (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the first battery. The first battery is charged to between 51% and 100% of maximum capacity. • The indicator lights up orange: The mains adapter is connected and the first battery is being charged. The first battery is charged to between 13% and 50% of maximum capacity. • The indicator slowly flashes orange (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the first battery. The first battery is charged to between 13% and 50% of maximum capacity. • The indicator flashes orange (for four seconds after installing the battery): The battery charge level is being checked. • The indicator lights up red: The mains adapter is connected and the first battery is being charged. The first battery is charged to between 0% and 12% of maximum capacity. • The indicator slowly flashes red (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the first battery. The first battery is charged to between 0% and 12% of maximum capacity. • The indicator flashes red (1 second on/1 second off). Malfunction. • The indicator is not illuminated: The first battery is not installed or is not charged.
	Second battery indicator • The indicator lights up green: The second battery is charged to between 51% and 100% of its capacity. • The indicator slowly flashes green (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the second battery. The second battery is charged to between 51% and 100% of its capacity. • The indicator lights up orange: The mains adapter is connected and the second battery is being charged. The second battery is charged to between 13% and 50% of its capacity. • The indicator slowly flashes orange (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the second battery. The second battery is charged to between 13% and 50% of its capacity. • The indicator flashes orange (for four seconds after installing the battery): The battery charge level is being checked. • The indicator lights up red: The mains adapter is connected and the second battery is being charged. The second battery is charged to between 0% and 12% of its capacity. • The indicator slowly flashes red (1 second on/5 seconds off): The notebook is in suspend mode and power is being supplied by the second battery. The second battery is charged to between 0% and 12% of its capacity. • The indicator flashes red (1 second on/1 second off). Malfunction. • The indicator is not illuminated: The second battery is not installed or is not charged.

Indicator	Description
E	**Energy saving functions indicator** • The indicator is illuminated: The energy saving functions are enabled (e.g. reduce screen brightness). • The indicator is not illuminated: The energy saving functions have been disabled.
	Drive indicator The indicator is illuminated: The hard disk drive or the CD/DVD in the optical drive of the notebook is being accessed.
	Num Lock indicator The indicator is illuminated: The Num key has been pressed. The virtual numerical keypad is activated. You can output the characters indicated on the upper right of the keys.
	Caps Lock indicator The indicator is illuminated: The Caps Lock key has been pressed. All the characters you type will appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear when that key is pressed.
	Scroll Lock indicator The indicator is illuminated: The key combination Fn + Scr has been pressed. The effect that this key has varies between applications.

Switching on the notebook



► Press on the unlocking lever (1).
↳ The monitor is unlocked.
► Lift up the LCD monitor (2).

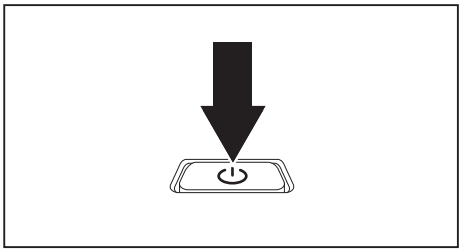


► Press the ON/OFF switch for about one second to switch the notebook on.

↳ The power-on indicator of the notebook lights up.

Notebook: switching off

Back up your data and close all applications before you switch off your device. Otherwise data might be lost.



► Shut down the operating system properly (e. g. from the Windows *Start* menu, by clicking on *Start – Shut Down – OK*).
► If the notebook is not switched off automatically, press the ON/OFF switch for approx. five seconds.
► Close the LCD screen.

Keyboard

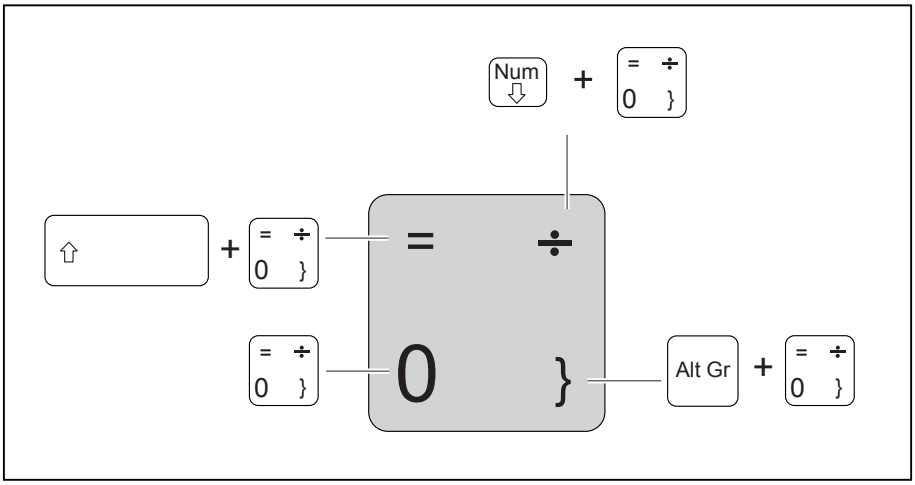
The keyboard of your notebook is subject to continuous wear through normal use. The key markings are especially prone to wear. The key markings are liable to wear away over the life of the notebook.

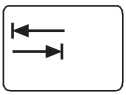
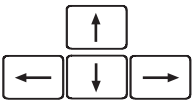
The keyboard has been designed to provide all the functions of an enhanced keyboard. Some enhanced keyboard functions are mapped with key combinations.

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

The figure below shows how to access the different characters on keys with overlaid functions. The example applies when the Caps Lock key has not been activated.

The illustrations shown below may differ from your actual device.

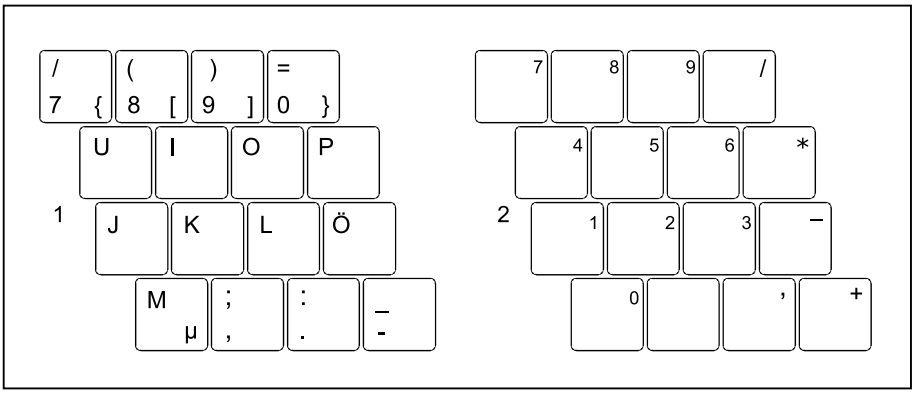


Key	Description
	Backspace key The Backspace key deletes the character to the left of the cursor.
	**Tab key** The Tab key moves the cursor to the next tab stop.
	Enter key (return) The Enter key terminates a command line. The command you have entered is executed when you press this key.
	Caps Lock key The Caps Lock key activates the Caps Lock mode, and the corresponding icon is displayed in the Windows information area. In Caps Lock mode, all of the characters you type appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear 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 printed on the upper left of the key appears when that key is pressed.
	Fn button The Fn key enables the special functions indicated on overlay keys (see "Key combinations", Page 24).
	**Cursor keys** The cursor keys move the cursor in the direction of the arrow, i.e. up, down, left, or right.
	Start key The Start key opens the Windows Start menu.
	Menu key The Menu key invokes the menu for the marked item.

Virtual numeric keypad

To provide the convenience of a numeric keypad, your keyboard is equipped with a virtual numeric keypad. The special keys of the virtual numeric keypad are recognisable by the numbers and symbols printed in the upper right corner of each key. If you have switched on the virtual numeric keypad, you can output the characters shown on the upper right of the keys.

The keyboard layout shown below may differ from your actual device.



1 = Valid characters when the Num key is not activated

2 = Valid characters when the Num is activated

Further information about the status indicators can be found in chapter "Status indicators", Page 18.

Key combinations

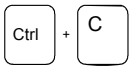
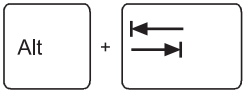
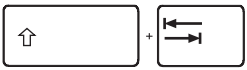
The following description of key combinations refers to functions when using Microsoft Windows. Some of the following key combinations may not function in other operating systems and with some device drivers.

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 not feature a Fn key.

Combination	Description
Fn + F1	**Sleep mode** This key combination is used to activate the suspend mode (S3).
Fn + F3	**Enable/disable loudspeakers** This key combination switches your notebook's loudspeakers off and on.
Fn + F4	**Switching the touchpad on/off** This key combination enables and disables the touchpad.
Fn + F5	**Enlarge display** This key combination enlarges the screen to the full-screen mode or switches it back to the normal mode.
Fn + F6	**Decrease screen brightness** This key combination decreases the brightness of the screen.
Fn + F7	**Increase screen brightness** This key combination increases the brightness of the screen.
Fn + F8	**Decrease volume** This key combination reduces the volume of the integrated loudspeakers.
Fn + F9	**Volume increase** This key combination raises the volume of the integrated loudspeakers.
Fn + F10	**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.
	Windows Security/Task Manager This key combination opens the Windows Security/Task Manager window.
	**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.

Country and keyboard settings

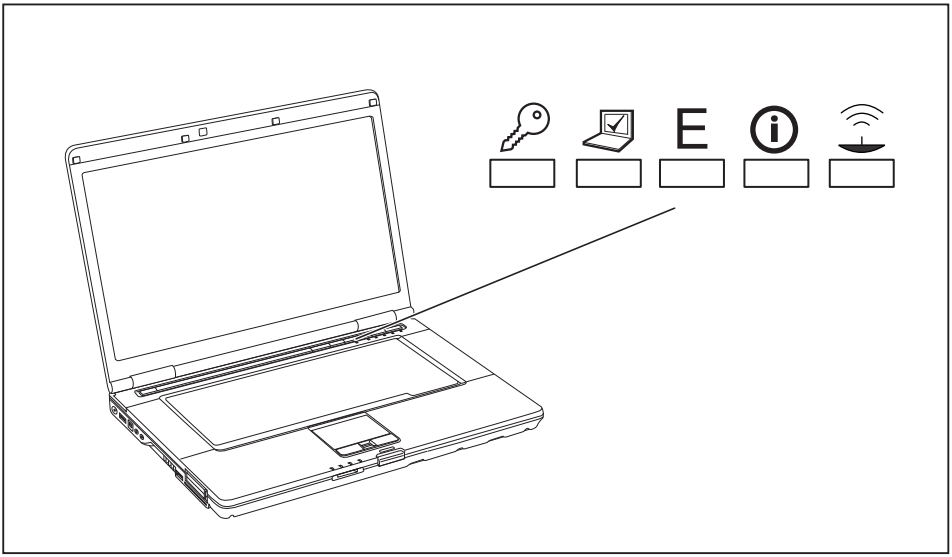
If you want to change the country and keyboard settings, proceed as follows:

► Enter the settings by clicking *Start – (Settings) – Control Panel – Time, Regional and Language Options*.

Application keys

Your notebook is equipped with five application keys.

All application buttons are freely programmable, see "Programming the application keys", Page 28.



Button	Description
	Lock Workstation key This key allows you to lock your workstation.
	Mobility Center key This button starts the Mobility Center.
E	**E key** The E key is a simple way of activating and deactivating power management functions (e.g. reduce screen brightness), see "Using the power-management features", Page 40.
	I key With the I key, you can obtain further information about your notebook.
	Wireless Components key This application key is used to start the *WirelessSelector* software. The wireless components that have been activated in the *BIOS Setup* can be switched on and off individually.

Programming the application keys

With the *Application Panel* you can assign various functions to the application keys.

Windows XP

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

Windows Vista and Windows 7:

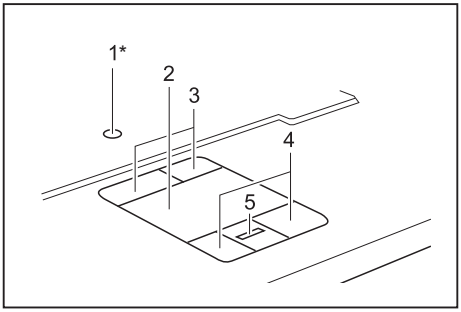
You will find the *Application Panel* under *Start symbol - Programs - Lifebook Application Panel*.

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 on the touchpad or the touchpad buttons.



1 = TouchStick (* optional)

2 = Touchpad

3 = TouchStick buttons

4 = Touchpad buttons

5 = Fingerprint sensor

The touchpad enables you to move the pointer on the screen.

The touchpad buttons allow you to select and execute commands. They correspond to the buttons on a conventional mouse.

You can also disable the touchpad via a key combination, to prevent you from moving the pointer on the screen unintentionally (see chapter "Key combinations", Page 24).

Moving the pointer

► Move your finger on the touchpad.

or

► Press down gently with your finger on the TouchStick. If you want to move the pointer to the left for example, press down gently on the left side of the TouchStick.

↳ The pointer will move.

Selecting an item

► Move the pointer to the item you wish to select.
► Tap the touchpad once or press the left-hand TouchStick/touchpad button once.
↳ The item is selected.

Executing commands

► Move the pointer to the field you wish to select.
► Tap the touchpad twice or press the left TouchStick/touchpad button twice.
↳ The command is executed.

Dragging items

► Move the pointer to the item you wish to select.
► Select the desired object and hold down the left TouchStick/touchpad button.
► Drag the object to the desired position.
► Lift your finger from the touchpad.

or

► Lift your finger from the TouchStick.
↳ The item will be moved.

LCD screen

High-quality TFT displays are installed in notebooks from Fujitsu Technology Solutions GmbH. For technical reasons, TFT monitors are manufactured for a specific resolution. An optimal, clear picture can only be ensured with the correct resolution intended for the relevant TFT monitor. A monitor resolution which differs from the specification can result in an unclear picture.

The screen resolution of the LCD monitor of your notebook is optimally set at the factory.

The standard of production techniques today cannot guarantee an absolutely fault-free screen display. A few isolated constant lit or unlit pixels (picture elements) may be present. The maximum permitted number of pixels faults is stipulated in the international standard ISO 9241-3 (Class II).

Example:

A monitor with a resolution of 1280 x 800 has 1280 x 800 = 1024000 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 3 million subpixels in total. According to ISO 9241-3 (class II), a maximum of 2 light and 2 dark pixels and an additional 5 light or 10 dark subpixels or a corresponding mix may be defective (1 light subpixel counts as 2 dark subpixels).

Pixel	A pixel consists of 3 subpixels, normally red, green and blue. A pixel is the smallest element that can be generated by complete functionality of the display.
Subpixel	A subpixel is a separately addressable internal structure within a pixel that enhances the pixel function.
Cluster	A cluster contains two or more defective pixels or subpixels in a 5 x 5 pixel block.

Background lighting

TFT monitors are operated with background lighting. The luminosity of the background lighting can decrease during the period of use of the notebook. However, you can set the brightness of your monitor individually.

Synchronising the display on the LCD screen and an external monitor

For more information, please refer to the chapter "Key combinations", Page 24 under "Display output, switch between".

Webcam

Depending on the device variant, a WebCam may be integrated in your notebook.

Depending on the software used, you can use your Webcam to take pictures, record video clips or take part in web chats.

- The picture quality depends on the lighting conditions and the software being used.
- You can only operate the webcam with a particular application (e.g. an Internet telephony program or a video conferencing program which supports a webcam).
- When using the webcam the notebook support must not wobble.
- The webcam automatically adjusts itself to the current light level. For this reason the LCD screen may flicker while the light level is adjusted.

Further information on use of the webcam and additional settings can be found in the help function of the program which uses the webcam.

If you wish to carry out a function test with your webcam, you can use the corresponding test software available at "http://ts.fujitsu.com/support/".

Rechargeable battery

When not plugged into a mains socket, the notebook runs on its built-in battery. You can increase the life of the battery by caring for the battery properly. The average battery life is around 500 charge/discharge cycles.

You can extend the battery life by taking advantage of the available energy saving functions.

Charging, caring for and maintaining the battery

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

You can charge the battery by connecting the notebook to the mains adapter (see "Mains adapter connecting", Page 16).

If the battery is running low you will hear a warning alarm. If you do not connect the mains adapter within five minutes of the warning alarm described above, your notebook will automatically switch off.

monitoring the battery charging level

Windows also has a "Battery status meter" in the taskbar for monitoring the battery capacity. When you place the mouse pointer on the battery symbol, the system displays the battery status.

Battery storage

Keep the battery pack between 0°C and +30°C. The lower the temperature at which the batteries are stored, the lower the rate of self-discharge.

If you will be storing batteries for a longer period (longer than two months), the battery charge level should be approx. 30 %. To prevent exhaustive discharge which would permanently damage the battery, check the level of charge of the battery at regular intervals.

To be able to make use of the optimal charging capacity of the batteries, the battery should be completely discharged and then fully recharged.

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

Removing and installing the battery

Only use rechargeable batteries approved by Fujitsu Technology Solutions for your notebook.

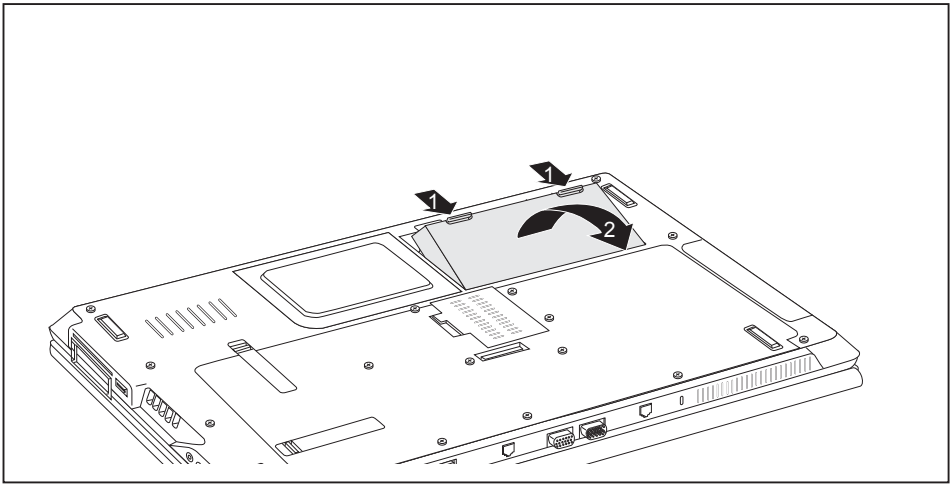
Never use force when fitting or removing a battery.

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

Never store a battery for longer periods in the discharged state. This can make it impossible to recharge.

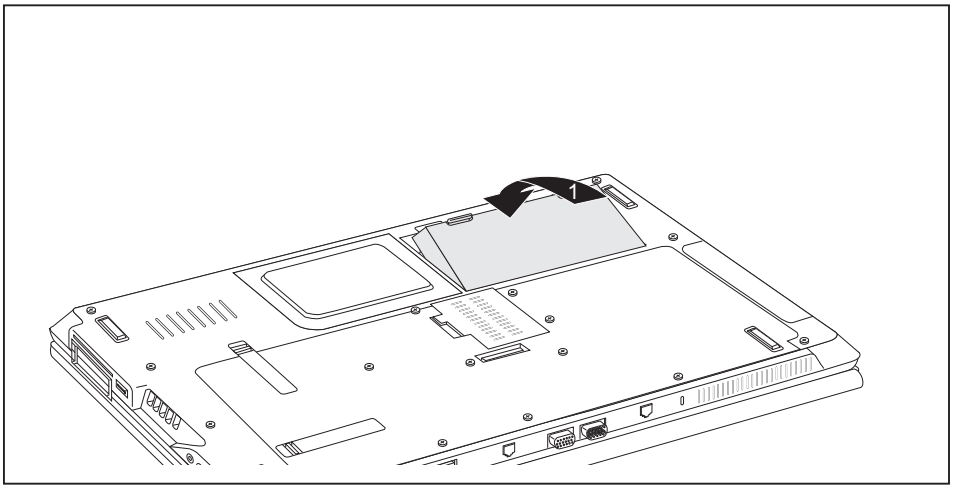
Removing a battery

► Prepare for removal, see chapter "Preparing to remove components", Page 73.



► Press the two unlocking levers (1).
► Remove the battery from the battery compartment (2).

Installing a battery



► Position the battery at the edge.
► Push the battery into the battery slot until you feel it lock into place (1).
► Complete the removal, see chapter "Finishing component removal", Page 78.

Module

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

- Second battery
- Second hard disk drive
- Optical drive
- Empty plug-in unit (save weight)

Only use modules designed for your notebook.

Do not use force when installing or removing the module.

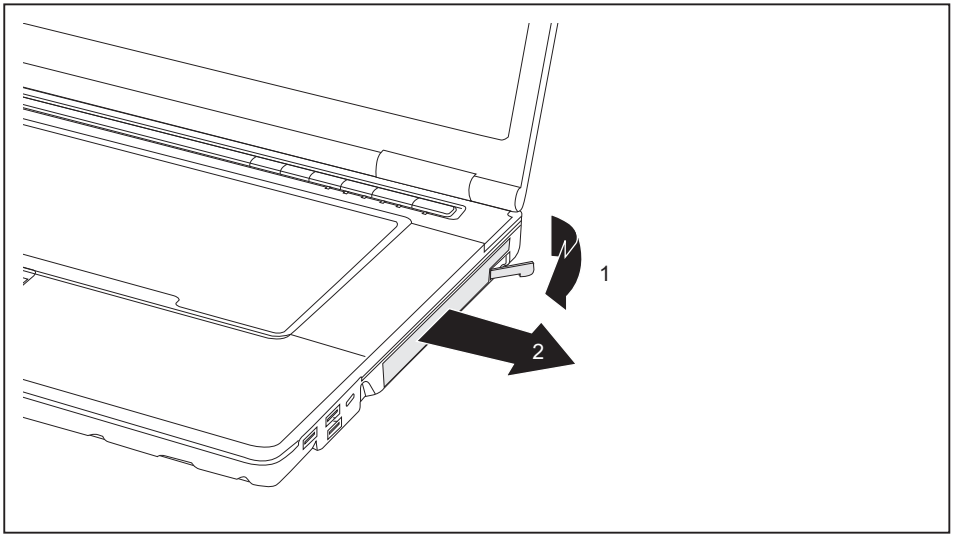
Make sure that no foreign objects enter the module bay.

You can swap 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 task bar and then on *Exit* or *Select - Exit*.

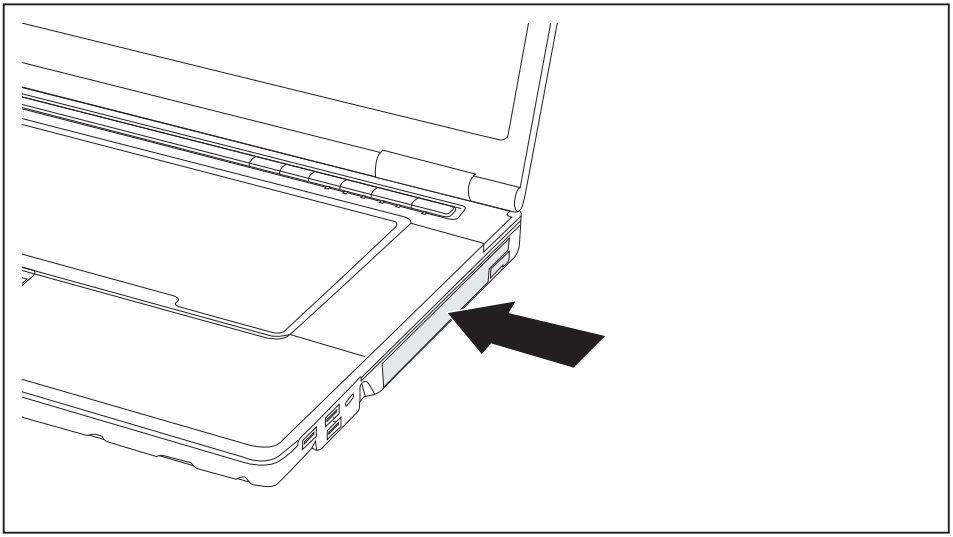
The module can now be removed without any further actions being necessary.

Removing a module



► Pull the unlocking lever in the direction of the arrow (1).
► Now pull the module out of the module bay (2).

Installing a 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

This product contains a light emitting diode, classified in accordance with IEC 8251:1993: LASER CLASS 1, and must therefore not be opened.

Handling data carriers

Observe the following guidelines when handling data carriers:

- Avoid touching the surface of a data carrier. Only handle data carriers by their edges.
- Always store data carriers in their cases. This will protect the data carrier against being covered in dust, scratched or damaged in any other way.
- Protect your data carriers against dust, mechanical vibrations and direct sunlight.
- Avoid storing a data carrier in areas subject to high temperatures or humidity.

You may use both 8-cm and 12-cm data carriers in the optical drive.

When using a data carrier of lesser quality, vibrations and reading errors may occur.

CD/DVD indicator

The CD/DVD indicator flashes when a data carrier is inserted. The indicator goes out when the drive is ready for reading. The indicator lights up when the drive is being accessed. You may only remove the data carrier when the indicator is unlit.

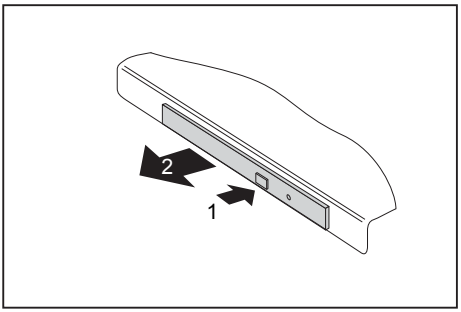
i

If the CD/DVD indicator does not go out after a data carrier has been inserted, but instead continues to flash, this means that the drive cannot access the data carrier.

Either the data carrier is damaged or dirty or you are using a data carrier that the drive cannot read.

Inserting or removing a data carrier

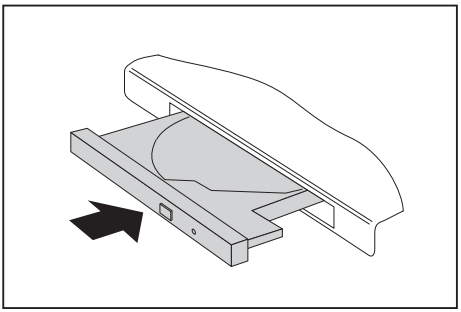
The notebook must be switched on.



► Push the insert/eject button (1).

↳ The drive tray will open.

► Gently pull the drive tray (2) completely out.



► Place the data carrier in the drive tray with the printed side facing upwards.

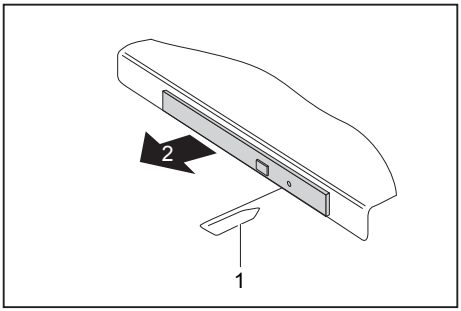
or

► Remove a data carrier that has been inserted.

► 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, you can remove the data carrier manually.



- ► Switch your notebook off.
- ► Push a pen or a piece of wire (such as a paperclip) firmly into the opening (1).
- ↳ The drive tray is ejected. You can now pull the drive tray (2) out of the drive.

Removing and fitting the dust removal cover (ventilation slot cover)

The description below applies to both vent covers.

In order to ensure optimum cooling of the components in your notebook, you should periodically clean the ventilation slot of the heatsink.

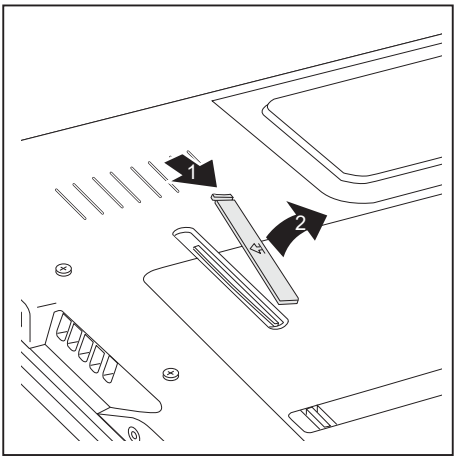
This ensures optimum fan performance. You can achieve the best cleaning results with a small hand-held vacuum cleaner.

If necessary, you can also use a dry brush to release dust from the ventilation slots.

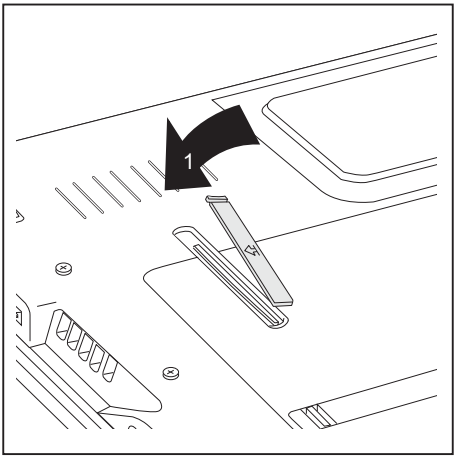
Do not use any cleaning liquids! Ensure that no liquid enters the device.

To avoid overheating of the device, do not remove the ventilation slot cover when the device is switched on.

► Prepare for removal, see chapter "Preparing to remove components", Page 73.



- ► Press and hold the lock of the ventilation slot cover (1) and remove it from its slot (2).
- ► Clean the dust chamber with a dry brush.



- ► Insert the ventilation slot cover into the slot (1) at an angle as shown, and ensure that you feel it click into place.
- ► Complete the removal, see chapter "Finishing component removal", Page 78.

Using the power-management features

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

Power efficiency is increased and environmental pollution reduced. By choosing the best power options, you can make significant savings and at the same time help protect the environment.

When you fold down and close the LCD screen, depending on the setting in Windows, the notebook automatically enters a power saving mode.

We recommend the following settings:

Function	On external power	On battery power
Turn off monitor	After 10 minutes	After 5 minutes
Turn off hard disk(s)	After 15 minutes	After 10 minutes
Energy saving (S3)	After 20 minutes	After 15 minutes
Hibernate mode (S4)	After 1 hour	After 30 minutes

- ► Select the power management functions in your Control Panel.
- ► Select the Screen Saver in your Control Panel.

or

- ► Right-click on the desktop. Switch on the screen saver by clicking *Personalization – Change screen saver*.

If you need further information about an option, you can get help with most settings by pressing F1 to open the Microsoft Help.

When the notebook is in power-saving mode, the following must be remembered:

During power saving mode, open files are held in the main memory or in a swap file on the hard disk.

Never turn off your notebook while it is in a power saving mode. If the built-in battery is nearly flat, close the open files and do not go into power saving mode.

If you do not intend to use your notebook for a long period of time:

- ► Exit power saving mode if necessary via the mouse or keyboard or by switching on the notebook.
- ► Close all opened programs and completely shut down the notebook.

Memory cards

Your notebook is equipped with an integrated memory card reader.

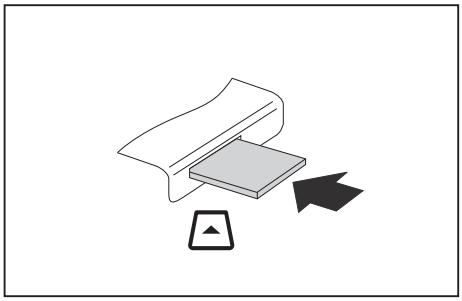
Observe the manufacturer's instructions when handling the memory cards.

Supported formats

Your notebook supports the following formats:

- Secure Digital (SD™ card)
- Memory Stick (MS)
- Memory Stick Pro

Inserting the memory card



► Carefully slide the memory card into the slot. The label should be facing upward. Do not apply excessive force, as otherwise the delicate contact surfaces could be damaged.

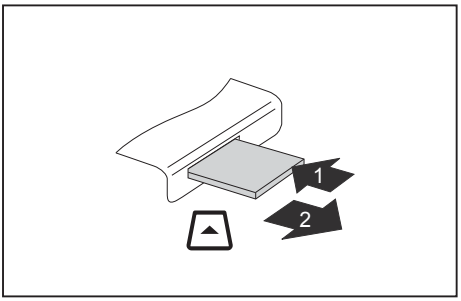
↳ Depending on the particular type used, the memory card may protrude slightly from the slot.

Removing the memory card

In order to protect your data, always follow the correct procedure for removing the card outlined below.

You can stop the memory card via the corresponding icon in the task bar:

- ► Left-click on the icon.
- ► Select the card you want to stop and remove.
- ► Press the Enter key.
- ↳ Wait for the dialogue box which tells you that it is now safe to remove the memory card.



- ► On devices with card locking: Press on the storage card (1).
- ↳ The storage card is released and can now be removed.
- ► Pull the storage card out of the slot (2).

PC cards and ExpressCards

An ExpressCard slot enables operation of an ExpressCard/34 or ExpressCard/54.

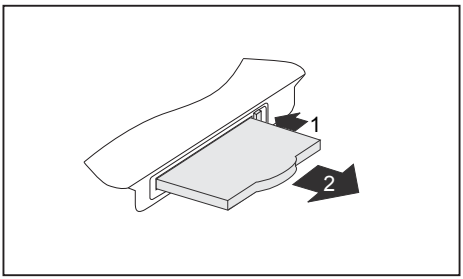
A PC card slot enables the notebook to operate one type I or type II PC card.

Please read the documentation on the PC card and/or on the ExpressCard and follow the manufacturer's instructions.

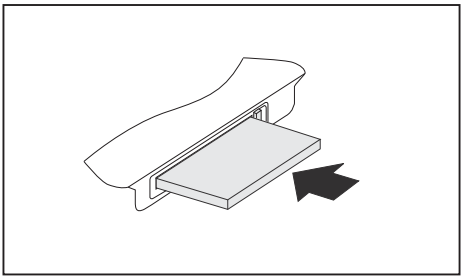
Never use force when installing or removing a PC card or an ExpressCard.

Inserting the card

Keep the placeholder for the slot in a safe place. When you remove the card again you must reinstall the placeholder. This prevents foreign bodies from getting into the slot.



- ► If the eject button (1) is recessed, press it once so that it disengages. Now press the eject button again so that the placeholder protrudes slightly from the notebook.
- ► Pull the card placeholder out of the slot (2).



- ► Insert the card into the slot guide with the connection contacts first.
- ► Gently push the card into the slot either until it will go no further or you feel it engage. Do not use excessive force.

  Depending on the type, the card may protrude slightly from the slot.

Please see the documentation relating to the card for driver installation instructions.

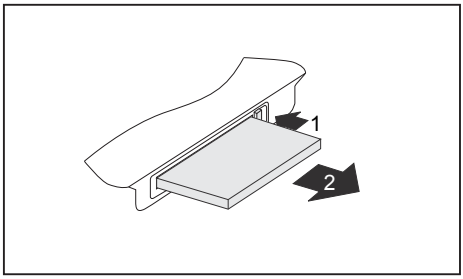
Removing the card

Always remove the card according to the rules described below, to ensure that none of your data is lost.

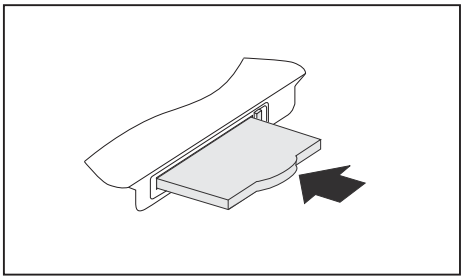
You can stop the card using the corresponding icon in the task bar:

- ► Left click on the icon to safely remove hardware, located in the taskbar.
- ► Select the card you want to stop and remove.
- ► Press the "Enter" key.

↳ Wait for the dialog box which tells you that it is now safe to remove the card.



- ► If the eject button is lowered, you must first cause the eject button to release from the notebook casing. To do this, press the eject button until it pops out. Press the eject button (1) so that the card protrudes a little from the notebook.
- ► Pull the card out of the slot (2).



- ► Insert the card placeholder into the slot guide.
- ► Carefully slide the placeholder for the card as far as it will go into the slot. Do not use excessive force.

Loudspeakers and microphones

Information on the exact position of the speakers and microphone can be found in "Ports and operating elements", Page 9.

Please refer to chapter "Key combinations", Page 24 for information on setting the volume and also enabling/disabling the loudspeakers using key combinations.

If you attach an external microphone, the built-in microphone is disabled.

When you connect headphones or external speakers, the built-in speakers are disabled.

Information on connecting headphones and a microphone can be found in "Connecting external devices", Page 65.

Integrated 56k modem

Whether or not your device has a 56k modem depends on the device configuration you have ordered.

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

- Modem operation: High-speed downloads at up to 56,000 bit/s (V.9x). Downward-compatible to V.34 modems.
- Fax operation: Transmitting and receiving at up to 14,400 bit/s
- Simple software-based country adaptations

The modem complies with the EU Directive 91/263/EEC (Telecommunications terminal equipment directive) and has been checked in agreement with the guideline TBR-21.

The modem can be operated in the following countries:

Multifrequency (MFC) dialling: Belgium, Denmark, Germany, Finland, France, Greece, Great Britain, Holland, Ireland, Iceland, Italy, Luxembourg, Norway, Austria, Portugal, Sweden, Switzerland and Spain.

Pulse dialling: Belgium, France, Holland and Italy.

Also in: Poland, Slovenia, South Africa and Hungary.

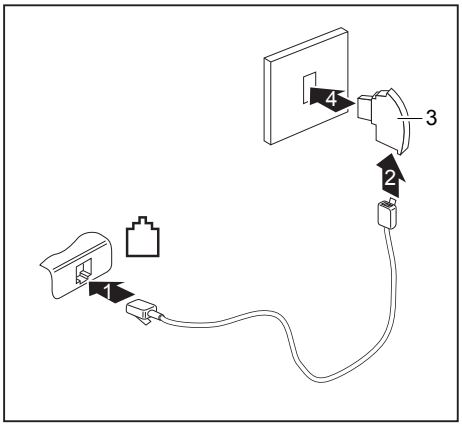
Connecting notebook modem to telephone wall socket

If you use a modem, incompatibilities with the local telephone system may result. This may result in poor performance, or the modem may not work at all.

Check whether you need a country-specific telephone adapter (available as an optional accessory).

The modem cable and the country-specific telephone adapter are not included in delivery. You can order these as an option.

Please note that the telephone line is busy and that you cannot use your telephone if the modem cable is plugged into the telephone wall socket. Pull the modem cable out of the telephone socket after you have finished your internet session or the fax mode and reconnect the telephone cable.



- ► Connect the modem cable to the modem port of the notebook (1).
- ► Plug the modem cable (2) into the country-specific telephone adapter (3).
- ► Connect the modem cable to your telephone wall socket (4).

SIM card

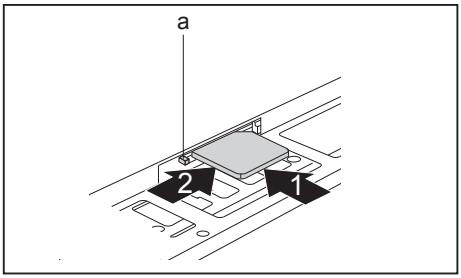
A SIM Card (Subscriber Identity Module) is a chip card which is inserted in a mobile telephone or notebook to enable access to a mobile radio network in conjunction with an installed UMTS module.

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

The SIM card slot is located in the battery compartment and can only be accessed when the battery is removed.

Inserting the SIM card

► Prepare for insertion of the SIM card, see chapter "Preparing to remove components", Page 73.



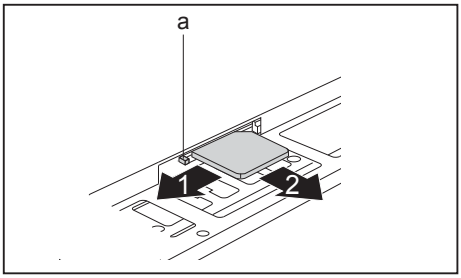
► Slide the SIM card into the slot (1) until it is felt to engage, as shown in the battery compartment.

► Slide the SIM card lock (a) in the direction of the arrow (2).

► Complete the installation, see chapter "Finishing component removal", Page 78.

Removing a SIM card

► Prepare for removal of the SIM card, see chapter "Preparing to remove components", Page 73.



► Slide the SIM card lock (a) in the direction of the arrow (1).

► Press on the edge of the SIM card so that it jumps up slightly out of the slot.

► Pull the SIM card out of the slot in the direction of the arrow (2).

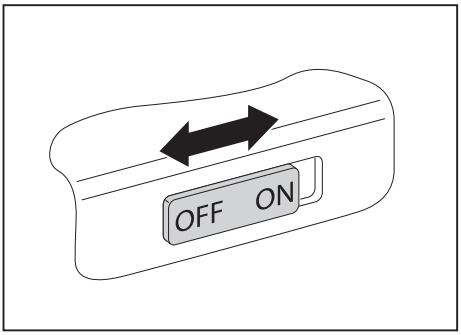
► Complete the removal, see chapter "Finishing component removal", Page 78.

Wireless LAN/ Bluetooth (device-dependent) / UMTS (device-dependent)

The installation of a radio components not approved by Fujitsu Technology Solutions will invalidate the certifications issued for this device.

Switching the wireless components on and off

Before switching on your device for the first time, the on/off switch for radio components must be in the "ON" position.



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

or

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

If you switch off the radio components, the wireless LAN transmission unit (antenna) and, if present, the Bluetooth and UMTS module will also be switched off.

You can enable and disable the installed radio components individually using the *WirelessSelector* programme

You can also deactivate the wireless components individually in the *BIOS Setup*. For this to occur, you must either not have assigned a supervisor password or if a supervisor password has been assigned, you must know this password.

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

Details on using Wireless LAN can be found in the online help system included in the Wireless LAN software.

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.

Setting up WLAN access

- Requirement: A WLAN must be available and you must have the corresponding access information.

Information on configuring the WLAN access can be found in the documentation for your operating system.

Access via UMTS

If you have ordered an integrated UMTS module with your system, you can enjoy the best reception and maximum energy efficiency, without any disruptive cables or aerials. The optional UMTS module is ready for use immediately.

If you have not ordered a UMTS module, you can purchase the accessories for UMTS reception from specialised dealers or from your Fujitsu Technology Solutions dealer.

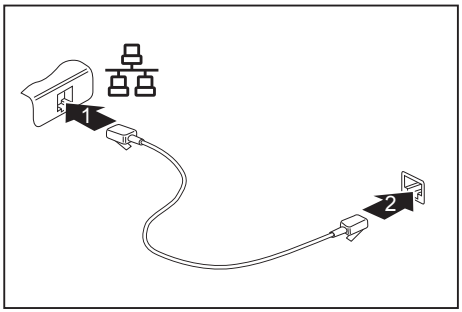
You will find information on establishing the connection with the UMTS network in the documentation for the hardware used.

Your device can connect with the Internet via UMTS. To do this, use one of the following types of connection:

- an integrated UMTS module (depending on your model variant)
- a USB dongle (a USB stick with your mobile phone provider's SIM card)
- a UMTS ExpressCard (to be inserted in the ExpressCard slot of your device)
- a mobile end-device (e.g. mobile phone with Bluetooth or cable connection)

Ethernet and LAN

The internal network module of your notebook supports Ethernet LAN. You can use it to establish a connection to a local network (LAN = Local Area Network).



- ► Connect the network cable to the LAN port of the notebook (1).
- ► Connect the network cable to your network connection (2).

Your network administrator can help you to configure and use the LAN connections.

The network cable is not included in the delivery scope. This type of cable can be obtained from a specialist dealer.

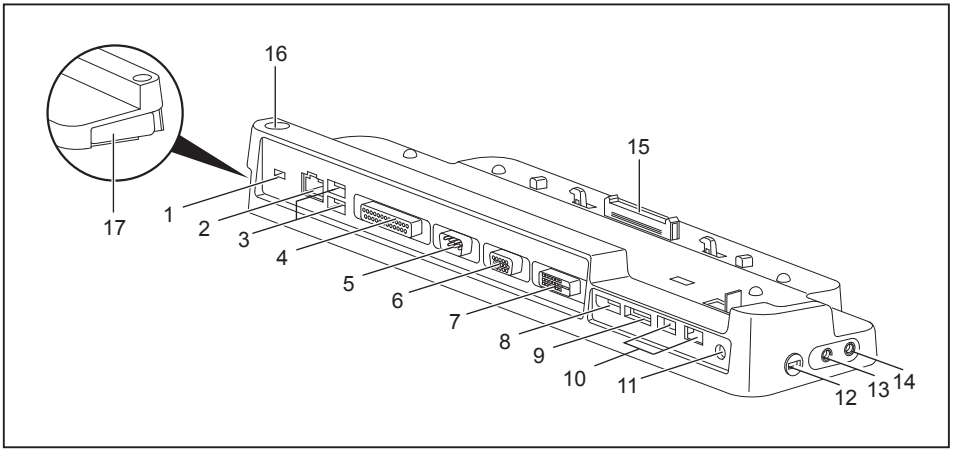
Your Port Replicator (optional)

Your Port Replicator is a device that enables you to quickly connect your notebook to your peripherals, such as a monitor, printer etc.

The features offered by the Port Replicator include standard ports for monitor, audio, mouse and keyboard.

You need only dock the notebook in order to use your peripheral devices.

Ports on the Port Replicator



1 = Kensington Lock
2 = LAN port
3 = USB ports
4 = Parallel port
5 = Serial port
6 = VGA monitor port
7 = DVI monitor port
8 = DisplayPort
9 = e-SATA port
10 = USB ports
11 = DC input connector (DC IN)
12 = Kensington Lock
13 = Headphones port
14 = Microphone port/Line In
15 = Connector on the Port Replicator for the docking port on the underside of the notebook
16 = ON/OFF switch
17 = Unlocking lever

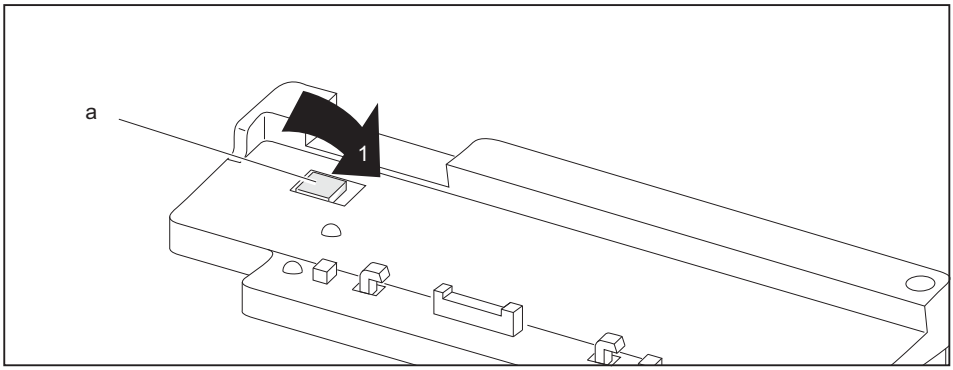
Connecting the notebook to the Port Replicator

If you connect the notebook to the Port Replicator during operation, problems can occur. We recommend that you switch off the notebook beforehand.

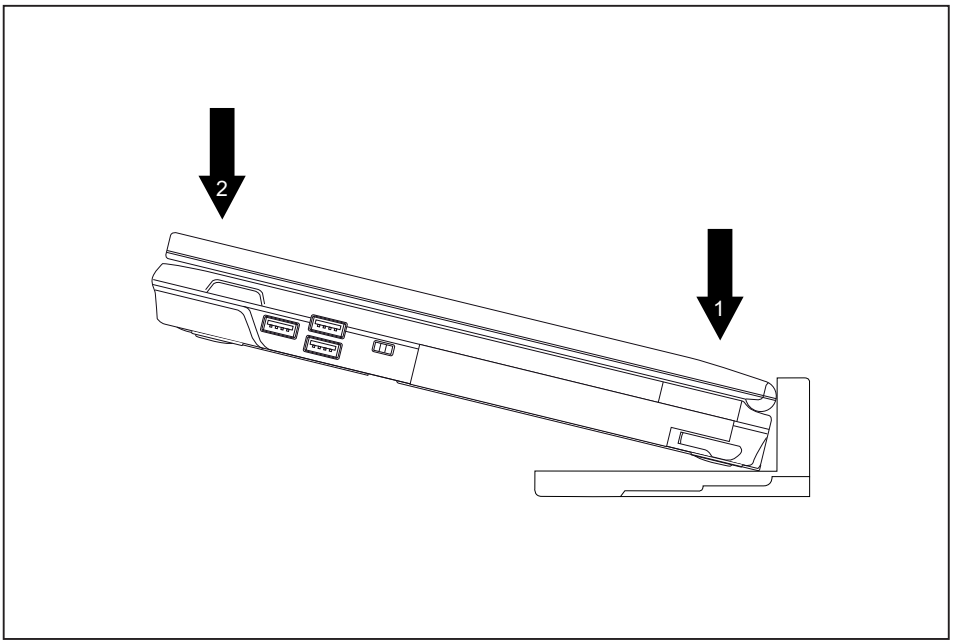
The mains adapter must be connected to the Port Replicator when the notebook is connected to the Port Replicator.

We recommend that the notebook is not operated with the LCD monitor closed when the notebook is connected to the Port Replicator. The resulting overheating can cause reduced performance and increased activity of the integrated fan.

- ► Switch the notebook off.
- ► Remove the power plug of the mains adapter from the mains socket.
- ► Disconnect the mains adapter cable from the DC socket (DC IN) of the notebook.

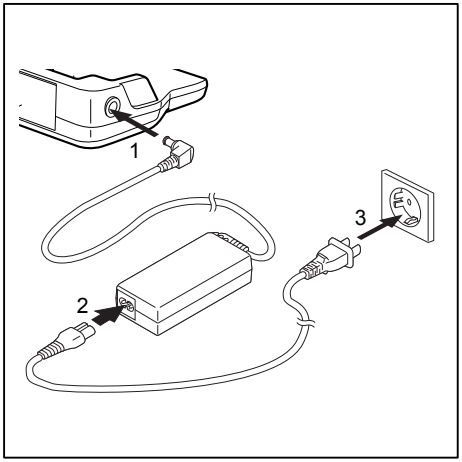


- ► Ensure that the positioning aid (a) of the Port Replicator is folded in (1).



- ► Position the notebook so that it is in line with the back edge and positioning aid of the Port Replicator (1).
- ► Push the notebook onto the Port Replicator in the direction of the arrow (2) until it engages.

Connecting the mains adapter to the Port Replicator

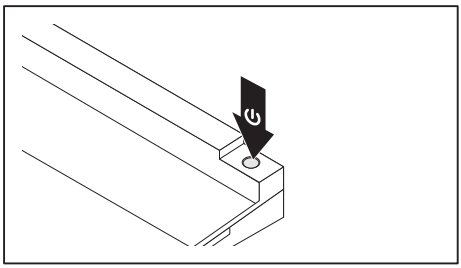


- ► Connect the mains adapter cable to the DC jack (DC IN) of the Port Replicator (1).
- ► Connect the power cable to the mains adapter (2).
- ► Plug the power cable into the mains socket (3).

i

When the notebook is connected to a Port Replicator, the operating system creates a hardware profile for the "Docked" mode. In this profile, for example, the setting is saved as to which monitor was last used for output. This profile will be loaded, as soon as the notebook is connected to a Port Replicator of the same type.

Switching on the notebook via the port replicator



- ► Press the ON/OFF switch on the port replicator to switch the notebook on.
- ↳ The power-on indicator of the Port Replicator lights up.

Switching off notebook via Port Replicator

- ► Close all applications and shut down your operating system (please refer to the manual for the operating system).

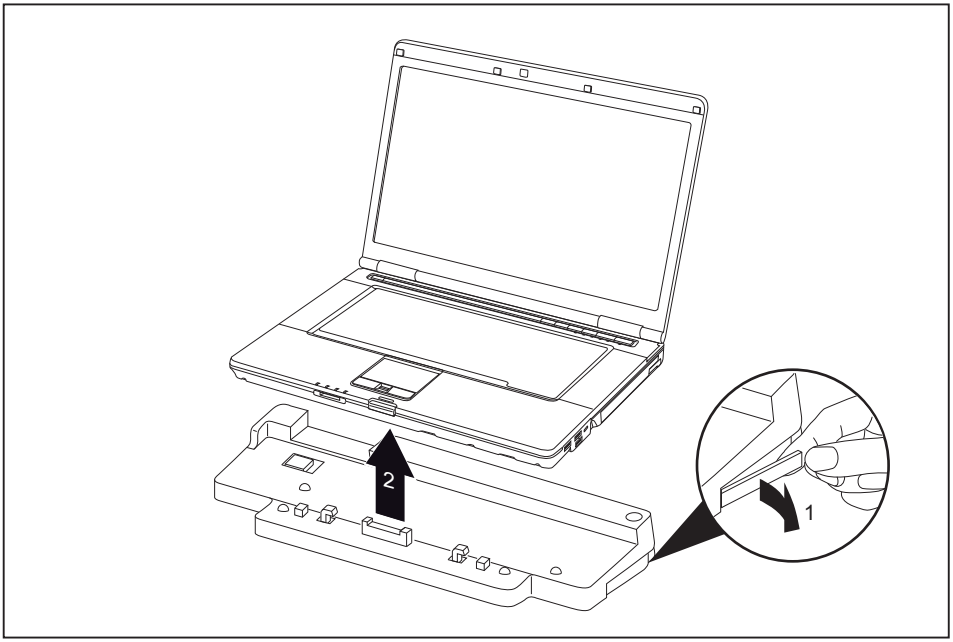
i

If the notebook cannot be shut down properly, press the ON/OFF button on the Port Replicator for approx. four seconds. The notebook will switch off. Any unsaved data may however be lost.

Disconnecting the notebook from the Port Replicator

Problems may occur if the notebook is removed from the Port Replicator during operation. We recommend that the notebook is switched off or that the appropriate undocking function provided by the operating system is executed.

► Switch the notebook off.



► Pull the unlocking lever in the direction of the arrow (1), until you hear the notebook unlatch.
► Lift off the notebook (2).

Security functions

Your notebook has several security features that you can use to secure your system from unauthorised access.

This chapter explains how to use each function, and what the benefits are.

Please remember that in some cases, for example, forgetting your password, you may be locked out and unable to access your data. Therefore, please note the following information:

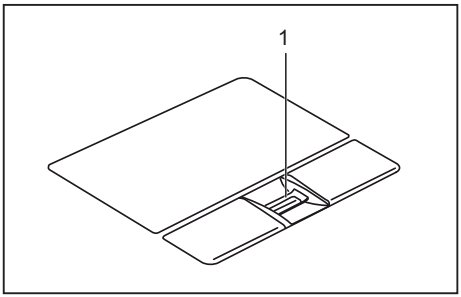
- Make regular backups to external storage devices such as external hard drives, CD or DVD disks.
- Some security functions need you to choose passwords. Make a note of the passwords and keep them in a safe place.

If you forget your passwords you will need to contact the our Service Desk. Deletion or resetting of passwords is not covered by your warranty and a charge will be made for assistance.

Configuring the fingerprint sensor

Whether or not your device has a fingerprint sensor depends on the device configuration you have ordered.

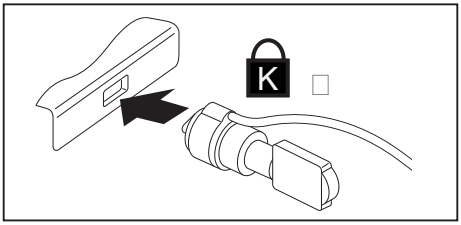
The fingerprint sensor can record an image of a fingerprint. With additional fingerprint software, this image can be processed and used instead of a password.



► You must install the fingerprint software in order to be able to use the fingerprint sensor (1).

Use Kensington Lock

Your device comes with a Kensington Lock device for the Kensington MicroSaver. With the Kensington MicroSaver, a sturdy steel cable, you can help protect your notebook from theft. The Kensington MicroSaver is available as an accessory.



► Fit the Kensington MicroSaver on the device on your notebook.

Connect another Kensington MicroSaver to your port replicator in order to secure your port replicator against theft.

Configuring password protection in BIOS Setup Utility

Before using the various options for password protection in the *BIOS Setup utility* to increase data security, please observe the following:

Make a note of the passwords and keep them in a safe place. If you forget your supervisor password you will not be able to access your notebook. Passwords are not covered by your warranty and a charge will be made for assistance.

Your password can be up to eight characters long and contain letters and numbers. No distinction is made between uppercase and lowercase.

Protecting BIOS Setup Utility (supervisor and user password)

If you have opened these operating instructions on the screen, we recommend that you print out the following instructions. Because you cannot call the instructions onto the screen while you are setting up the password.

You prevent unauthorised use of the *BIOS Setup Utility* with both the supervisor and the user password. The supervisor password gives you access to all functions of the *BIOS Setup Utility*, while the user password only provides some of the functions. You can only set a user password if a supervisor password has already been assigned.

Please refer to the "Settings in BIOS Setup Utility", Page 79 section for a description of how to call up and operate the *BIOS Setup Utility*.

Setting supervisor and user password

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Select the *Set Supervisor Password* field and press the Enter key.
↳ With *Enter new Password*: you are asked to enter a password.
► Enter the password and press the Enter key.
↳ *Confirm new Password* requires you to confirm the password.
► Enter the password again and press the Enter key.
↳ *Changes have been saved* is a confirmation that the new password has been saved.
► To set the user password, select *Set User Password* and proceed exactly as when configuring the supervisor password.
↳ If you do not want to change any other settings, you can exit *BIOS Setup Utility*.
► In the *Exit* menu, select the option *Save Changes & Exit*.
► Select *Yes* and press the Enter key.
↳ The notebook will be rebooted and the new password will come into effect. It will now be necessary to first enter your supervisor or user password in order to open the *BIOS Setup Utility*. Please note that the user password only provides access to a few of the BIOS settings.

Changing the supervisor or user password

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

► Call the *BIOS Setup Utility* and go to the *Security* menu.
► When changing the password, proceed exactly as for password assignment.

Removing passwords

To remove a password (without setting a new password) perform the following steps:

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Highlight the *Set Supervisor Password* or *Set User Password* field and press the Enter key.
↳ You will be requested to enter the current password by the *Enter Current Password* prompt.
You will be requested to enter a new password by the *Enter New Password* prompt.
► Press the Enter key twice.
► In the *Exit* menu, select the option *Save Changes & Exit*.
► Select *Yes* and press the Enter key.
↳ The notebook will now reboot with the password removed.
Removing the supervisor password simultaneously deactivates the user password.

Password protection for booting of the operating system

With the supervisor password you have set in the *BIOS Setup Utility* (see section "Setting supervisor and user password", Page 57), you can also prevent booting of the operating system.

Activating system protection

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Select the *Password on Boot* option and press the Enter key.
► Select the desired option (*Disabled*, *First Boot* or *Every Boot*) and press the Enter key
► Select the *Save Changes & Exit* option under *Exit*.
↳ The notebook will reboot. You will be prompted to enter your password (the supervisor password).

Deactivating system protection

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Select the *Password on Boot* option and press the Enter key.
► Select the *Disabled* option and press the Enter key.
↳ If you do not want to change any other settings, you can exit *BIOS Setup Utility*.
► Select the *Save Changes & Exit* option under *Exit*.
↳ The notebook will reboot. The system is no longer password-protected.

Password protection for the 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 up the *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 "Security functions", Page 55).
► Mark the *Hard Disk Security* field and press the Enter key.
► In the *Drive0* area mark the *Set Master Password* field and press the Enter key.
↳ *Enter new Password* then appears and you are asked to enter a password.
► Enter the password and press the Enter key.
↳ *Confirm new Password* requires you to confirm the password.
► Enter the password again and press the Enter key.
↳ *Setup Notice: Changes have been saved* is displayed to confirm that the new password has been saved.
► To assign the password for the second hard disk (*Drive1*), go to the *Drive1* area and select the field *Set Master Password*, then proceed in exactly the same way as for setting up the password for the first hard disk (*Drive0*).
↳ The field *Password Entry on Boot* is set to *Enabled* by default. You can exit the *BIOS Setup* once you have finished changing the settings.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook reboots and your hard disk is now protected with a password. The system will ask you to enter the password when the notebook is restarted again.

Deactivating hard disk protection

To cancel a password without setting a new one, proceed as follows:

► Call up the *BIOS Setup* and select the *Security* menu.
► Mark the *Hard Disk Security* field and press the Enter key.
► In the *Drive0* area mark the *Set Master Password* field and press the Enter key.
↳ You will be initially requested to enter the old password by the *Enter current Password* prompt.
You will then be requested to enter a new password by the *Enter new Password* prompt.
► After entering the password, press the Enter key three times.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook reboots, and password protection for the hard disk is cancelled.
► To cancel the password for the second hard disk (*Drive1*), go to the *Drive1* area and select the field *Set Master Password*, then proceed in exactly the same way as for cancelling the password for the first hard disk (*Drive0*).

Boot from Removable Media

With this BIOS feature, you can manage/control unauthorised booting of an operating system from external media (e.g. USB stick, USB CD-ROM drive etc.) We recommend that you configure the hard disk as the first boot medium in order to prevent access to your system by boot CDs and bootable media.

The condition for this BIOS feature is that you have assigned at least the supervisor password.

► Call up the BIOS Setup and select the *Security* menu.
► Highlight the *Boot from Removable Media* field and press the Enter key.
► Select the entry *All* (if you want everyone to be allowed to boot) or *Supervisor Only* (if you only want the supervisor to be authorised to do this) and press the Enter key.
↳ If you do not want to change any other settings you can exit the BIOS Setup.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook will restart and the settings will be adopted.

Owner Information (device-dependent)

The BIOS feature *Owner Information* enables you to enter up to 80 characters of text which is displayed in the bottom left corner of the screen before the operating system boots up. You could use this feature for example to put your name and telephone number on the notebook in case it is lost or stolen.

Requirements:

- You have been assigned at least the supervisor password.
- In the *BOOT* menu, the *Boot time diagnostic screen* option is set to *enabled*.

► Call up the BIOS Setup and select the *Security* menu.
► Highlight the *Owner Information* field and press the Enter key.
► Add the text you would like to enter under *Set Owner Information*.
↳ *Setup Notice: Changes have been saved* is displayed to confirm that the text has been saved.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook will restart and the Owner Information will be adopted.

Virus Warning (device-dependent)

This field checks the boot sectors of the hard disk drive to see if any changes have been made since the previous system start-up. If the boot sector has been changed since the previous system start-up (e.g. new operating system or virus attack), a warning is displayed on the screen. The warning will stay on the screen until you acknowledge the changes by clicking on *Confirm* or until you set the *Virus Warning* function to *Disabled*.

If the boot sectors have been changed and the reason for this is unknown, a programme for finding computer viruses should be loaded.

Such a change is not only caused by viruses, but also by the boot manager.

This function does not replace proper anti-virus software.

No supervisor password is required to set it up.

► Call up the BIOS Setup and select the *Security* menu.
► Highlight the *Virus Warning* field and press the Enter key.
► Select *Enabled* to activate the *Virus Warning* function.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook will restart and the settings will be adopted.

SmartCard reader

Depending on the device configuration level, your notebook is equipped with a SmartCard reader.

SmartCards are not supplied as standard equipment. You can use all SmartCards that comply with the ISO standard 7816-1, -2 or -3. These SmartCards are available from various manufacturers.

With the appropriate software you can use your SmartCard as an alternative to password protection, but also as a digital signature, for encrypting your e-mails or for home banking.

We recommend that you always use two SmartCards. Always keep one of the SmartCards in a safe place if you are carrying the other SmartCard with you.

In order to be able to take advantage of all the security features of your notebook, you will need a CardOS SmartCard from Fujitsu Technology Solutions.

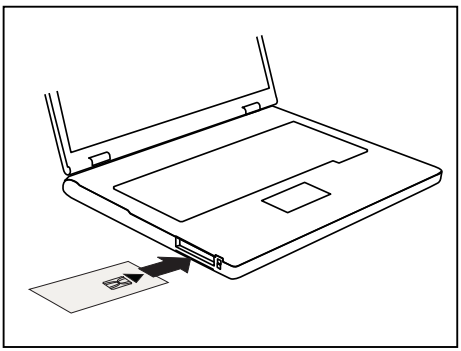
The SmartCard can only be used with a PIN, offering maximum protection even if you lose the SmartCard. In order to maximise your security, the CardOS SmartCard is disabled if three incorrect attempts are made to enter the PIN.

When you use the CardOS SmartCard for the first time, you will either need to enter the preset PIN "12345678" or the PIN given to you by your systems administrator.

Inserting the SmartCard

Do not use force when inserting and removing the SmartCard.

Make sure that foreign objects do not fall into the SmartCard reader.



► Slide the SmartCard into the SmartCard reader with the chip facing upwards (on some variants it faces down) and to the front.

SmartCard as software protection (SmartCase™ Logon+)

Together with a CardOS SmartCard, software like SmartCase™ Logon+ gives you the option of logging on with the SmartCard and entering your PIN. If the PIN is entered correctly, SmartCard is checked and the operating system is booted. The SmartCard must remain in the SmartCard reader during the entire work session.

In addition, the software allows you to block your computer during breaks. This allows you to leave your notebook unattended, without the risk of unauthorised persons being able to access your opened documents and data.

The settings for blocking access to the computer during a session are set up in SmartCase™ Logon+ under *OS Logon (Smarty)*. Among other things, Smarty allows you to specify how users should log on to the operating system, e.g.:

- Fingerprint (without a SmartCard)
- TPM with PIN (without a SmartCard)
- Windows password
- SmartCard with PIN, with fingerprint or with PIN and fingerprint

To install, configure and use SmartCase™ Logon+, please refer to the documentation and online help on the CD with the SmartCase™ Logon+ software.

Proceed as follows to block your computer when you want to take a break:

► Pull the SmartCard out of the notebook during your work session.
↳ A window appears stating that the system is locked.
► When you want to continue with your work, insert the SmartCard and enter your PIN.
↳ You will automatically return to your opened documents.

Trusted Platform Module (TPM) (device-dependent)

To use the TPM, you **must** activate the TPM in the *BIOS Setup* before the software is installed. The condition for this is that you have assigned at least the supervisor password (see "Security functions", Page 55).

Options for using the TPM

You can use the TPM in different ways:

SmartCase™ Logon+	SmartCase™ Logon+ offers additional help with managing and using the numerous passwords required to work with the computer. To install, configure and use SmartCase™ Logon+, please refer to the documentation and online help on the CD with the SmartCase™ Logon+ software.
Security API	Smart Security API 4.1 is middleware which supports the entire range of mobile and stationary clients from Fujitsu Technology Solutions. Independent of the TPM hardware, it is needed by everyone who uses a PKI Smart Security environment for identification purposes.
Microsoft® BitLocker	BitLocker Drive Encryption (BDE) is a feature of Microsoft® Vista Enterprise and Ultimate Editions for encryption of the hard disk drive. Here, BitLocker uses the TPM for the storage of the recovery data which are used for decryption of the partition. It is also possible to use BitLocker without TPM and only to use the USB dongle for storing the crypto key. This option is mainly of interest if Vista is installed on a computer on which TPM is not installed or an older version (before Version 1.2) is installed. For BitLocker to work, you must have set up at least two partitions on your hard drive. The first partition contains the boot information. The second, larger partition is encrypted and contains the operating system as well as the user data. **Important:** The partitions must be set up before Windows Vista is installed.

Enabling TPM

- Requirement: You have assigned a supervisor password, see "Security functions", Page 55.

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

► Mark the *TPM Security Chip Setting* field and press the Enter key.

► Select *Enabled* to activate the TPM.

↳ Once you have activated the TPM the *Clear Security Chip* option appears.

Select *Clear Security Chip* to delete the holder in the TPM. By clicking on *Enabled*, all secret keys (e.g. SRK - Storage Root Keys, AIK - Attestation Identity Keys etc.) generated by applications are deleted.

Please note that you will then no longer be able to access the data you have encrypted with the keys based on that holder.

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

► Press the Enter key and select *Yes*.

↳ The notebook will restart, and TPM will be enabled after the reboot.

Disabling TPM

- Requirement: You have assigned a supervisor password, see "Security functions", Page 55.

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

► Mark the *TPM Security Chip Setting* field and press the Enter key.

► Select *Disabled* to deactivate the TPM.

► From the *Exit* menu, choose the option *Exit Saving Changes*.

► Press the Enter key and select *Yes*.

↳ Your notebook will now restart and TPM will be disabled.

Connecting external devices

Always refer to the safety information provided in "Important notes", Page 12 before connecting or disconnecting any devices to or from your notebook.

Always read the documentation supplied with the device you wish to connect.

Never connect or disconnect cables during a thunderstorm.

Never pull at a cable when disconnecting it. Always grasp the plug.

Follow the steps below in order, when connecting or disconnecting devices to your notebook:

With some devices such as USB devices, it is not necessary to switch off the notebook and the device before connecting/disconnecting. For more information about whether or not devices need to be switched off, please refer to the documentation supplied with the external device.

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

Connecting devices to the notebook

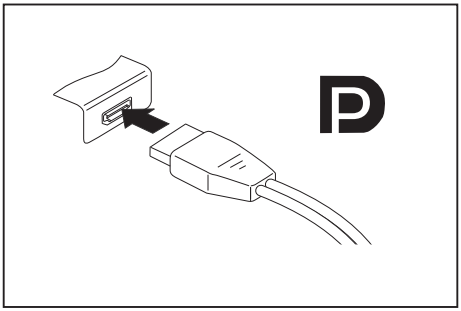
1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the mains sockets.
3. Connect the cables for your external devices following the instructions.
4. Plug all power cables into the mains sockets.

Disconnecting devices from the notebook

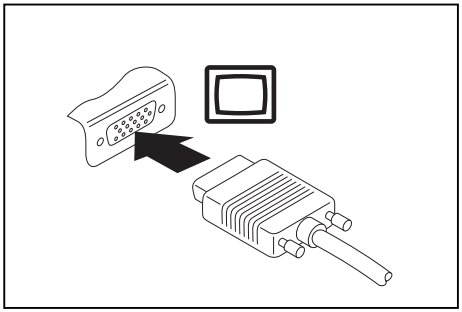
1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the mains sockets.
3. Disconnect the cables for your external devices following the instructions.

Connecting an external monitor

An analogue monitor is connected to the analogue VGA monitor port, a digital monitor to the DisplayPort. Screen output is limited to a maximum of two monitors at any one time (see "Key combinations", Page 24, section "Toggle output screen").



Digital DisplayPort



Analogue VGA monitor port

- ► Switch off the notebook and the external monitor.
- ► Plug the data cable of the external monitor into the monitor port.
- ► First switch on the external monitor and then the notebook.

i

You can also switch between the external monitor and the LCD monitor of the notebook, see chapter "Key combinations", Page 24.

You can display the same picture on the external monitor and the notebook LCD monitor simultaneously.

If you wish to operate the monitor via a DVI port, use the optional Port Replicator available for your notebook.

Connecting external devices to the parallel or serial port

The notebook has one serial port. If you wish to operate devices at a parallel port, use the optional Port Replicator available for your notebook.

External devices can be connected to the parallel or serial port (e.g. a printer or a modem).

- ► Connect the data cable to the external device.
- ► Depending on the device, connect the data cable to the parallel port or the serial port.
- ↳ For an exact description of how to connect external devices to the corresponding port, please see the external device documentation.

Port settings

You can change the port settings (e.g. address, interrupt) in the *BIOS Setup*.

Device drivers

The devices connected to the parallel or serial port require drivers. Your operating system already includes many drivers. If the required drive is missing, install it. Current drivers are usually available on the Internet or will be supplied on a data medium.

Connecting USB devices

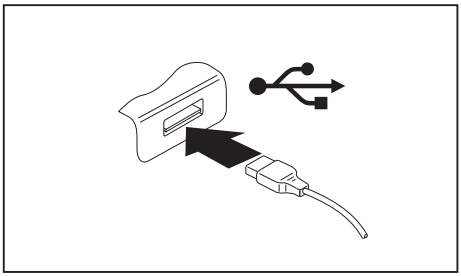
On the USB ports, you can connect external devices that also have a USB port (e.g. a DVD drive, a printer, a scanner or a modem).

USB devices are hot-pluggable. This means you can connect and disconnect devices while your operating system is running.

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 of the notebook.

Device drivers

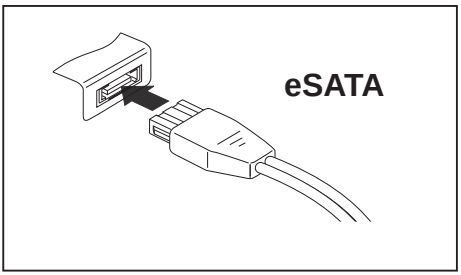
USB devices will be automatically recognised and installed by your operating system.

Connecting an external SATA hard disk (eSATA)

An external SATA hard disk can be connected at the eSATA port. This allows you to expand the internal hard disk capacity as you wish.

The length of the eSATA cable must not exceed 2 metres. Consult a specialist dealer for advice on which eSATA data cable is suitable for your external eSATA hard disk. Make sure that the hard disk has its own external power supply.

The data transfer rate is up to 2,400 Mbit/s.



- ► Connect the data cable to the external device.
- ► Connect the data cable to the eSATA port.

Device drivers

The eSATA hard disk is automatically recognised by your operating system and installed.

You will find more information in the documentation for the external SATA hard disk and the operating system.

Safe removal of eSATA and USB devices

Always correctly remove the device according to the rules described below, to ensure that none of your data is lost.

- ► Left-click on the symbol to remove hardware safely.
- ► Select the device you wish to shut down and remove.
- ► Press the "Enter" key.
- ↳ Wait for the dialogue box which tells you that it is now safe to remove the device.

Connecting FireWire devices

External devices such as digital audio/video devices or other high-speed devices can be connected to the FireWire port. The FireWire port operates at a speed of up to 400 Mbit per second.

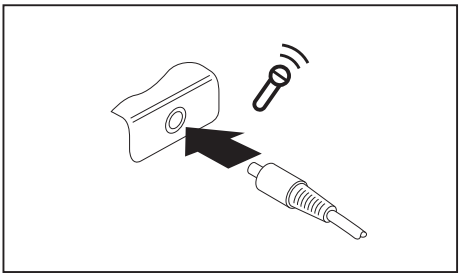
FireWire devices are hot-pluggable. Therefore, the cables of FireWire devices can be connected and disconnected with the system switched on. Additional information is provided in the documentation for the FireWire devices.

- ► Connect the data cable of the external devices to the FireWire port of the notebook.
- ► Plug the power cable of the external device into the mains socket.

Connecting external audio devices

Microphone port / Line In

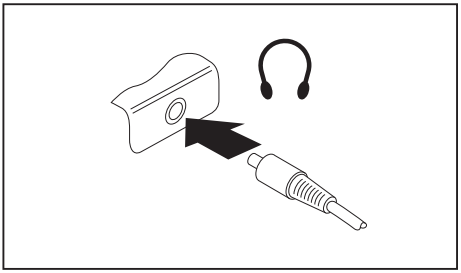
The microphone port/Line In allows you to connect an external microphone, a MiniDisc player, MP3 player, CD player or a tape deck to your notebook.



- ► Connect the audio cable to the external device.
- ► Connect the audio cable to the microphone port/Line In of the notebook.

Headphone port

You can connect headphones or external loudspeakers to your notebook via the headphone port.



- ► Connect the audio cable to the external device.
- ► Connect the audio cable to the headphone port of the notebook.
- ↳ The internal loudspeakers are disabled.

i

If you purchase a cable from a retailer, please note the following information:

The headphone port on your notebook is a "3.5 mm jack socket".

If you want to connect headphones or a speaker you will need a "3.5 mm jack plug".

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.

After consulting the Hotline/Service Desk, you may remove and install the components described in this chapter yourself.

If you remove and install components without consulting the Hotline/Service 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.
- Always 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.

Preparing to remove components

If you are going to remove or change system components, prepare for the removal as follows:

Please observe the safety information in chapter "Important notes", Page 12.

Remove the power plug from the mains outlet !

► Switch the device off.

The device must not be in energy-saving mode !

► Close the LCD screen.
► Remove all the cables from the device.
► Turn the device over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the device from being scratched.
► Remove the battery (see "Removing a battery", Page 33).

Installing and removing memory expansion

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

Please observe the safety information in chapter "Important notes", Page 12.

When installing/removing memory modules, the battery must be removed from the notebook and the notebook must not be connected to the power supply, see "Preparing to remove components", Page 73.

Only use memory expansion modules that have been approved for your notebook (see "Technical data", Page 89).

Never use force when installing or removing a memory extension.

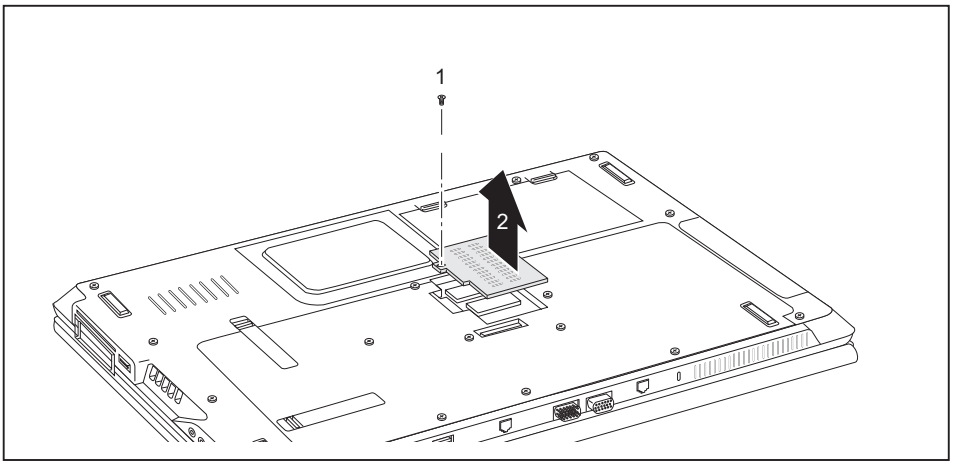
Make sure that foreign objects do not fall into the memory extension compartment.

You must open the service compartment to remove or install a memory module. On some devices, opening the compartment may expose other components. These components should be removed and replaced only by authorised specialists. Therefore, be sure to observe the following:

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

As some components are exposed that are sensitive to static electricity, please take note of chapter "Notes on installing and removing boards and components", Page 72.

Removing a cover

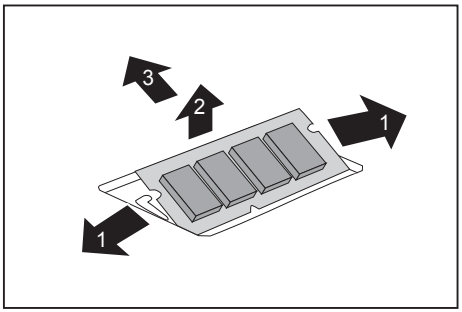


► Remove the screw (1).

Keep the screws in a safe place. If you are removing more than one component at the same time, store the screws for the individual components separate from each other. If you install the wrong screws, components may be damaged.

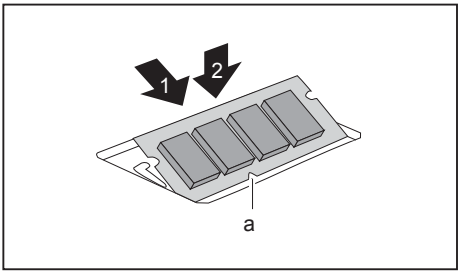
► Lift the cover off the notebook (2).

Removing memory modules



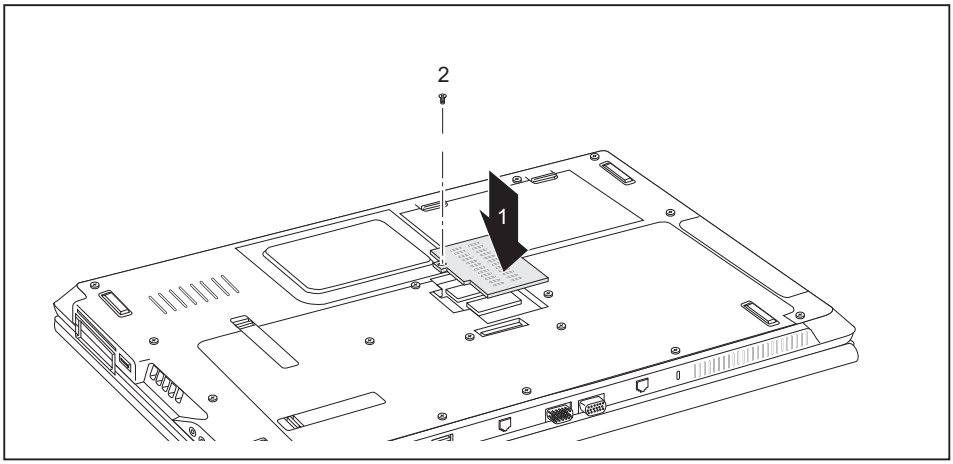
► Carefully push the two mounting clips outwards (1).
↳ The memory module snaps upwards (2).
► Pull the memory module out of its slot in the direction of the arrow (3).

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).

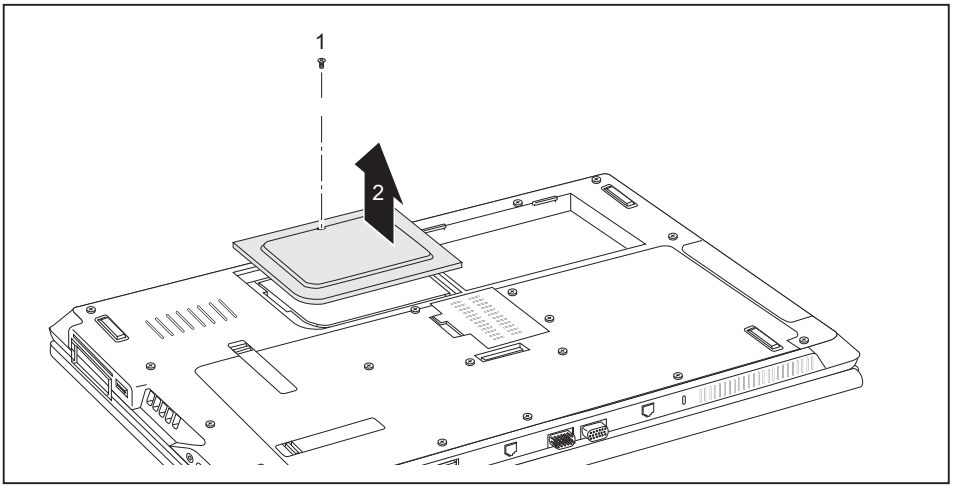
If you remove more than one component at the same time, keep the screws for the individual components separate from each other and make sure that you use the correct screws. If you install the wrong screws, components may be damaged.

► Tighten the screw (2).

Removing and installing the hard disk

Removing a cover

► Remove the battery (see Chapter "Removing a battery", Page 33).

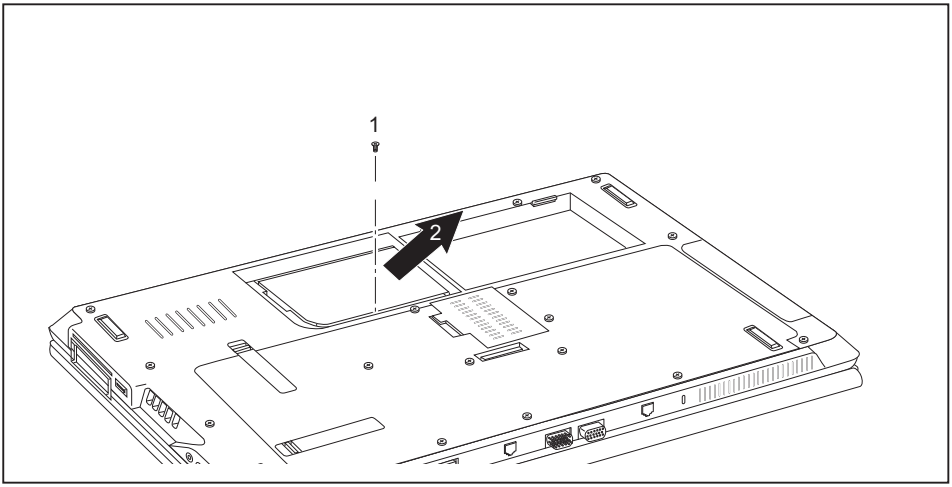


► Remove the screw (1).

Keep the screws in a safe place. If you are removing more than one component at the same time, store the screws for the individual components separately from each other. If you install the wrong screws, components may be damaged.

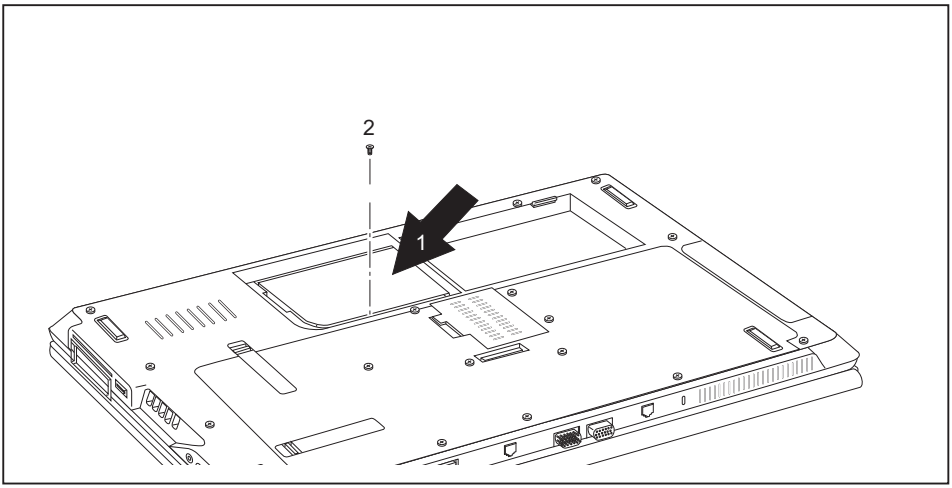
► Lift the cover off the notebook (2).

Removing a hard disk



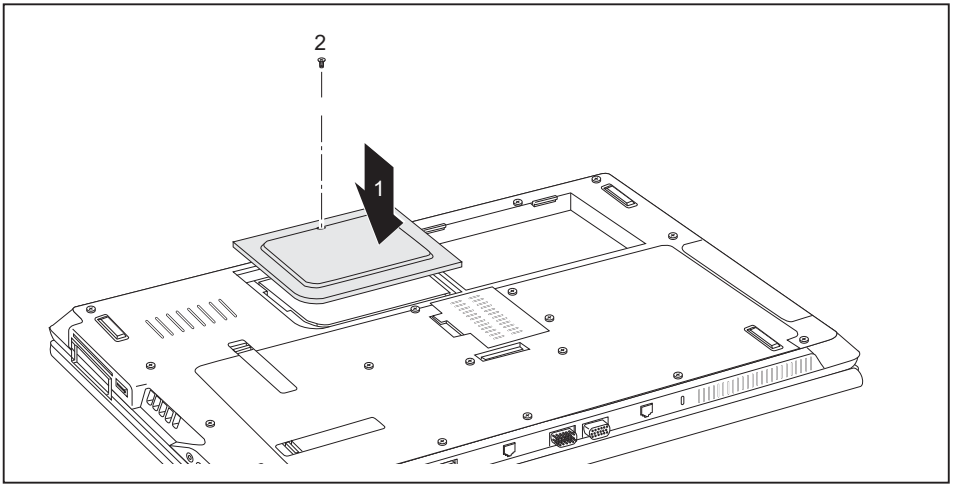
► Remove the screw (1).
► Lift the hard disk out of the hard disk compartment (2).

Installing a hard disk



► Place the hard disk into the hard disk compartment (1).
► Tighten the screw (2).

Attaching the cover



► Place the cover in the correct mounting position (1).

If you remove more than one component at the same time, keep the screws for the individual components separately from each other and make sure that you use the correct screws. If you install the wrong screws, components may be damaged.

► Tighten the screw (2).
► Insert the battery (see Chapter "Installing a battery", Page 34).

Finishing component removal

After you have removed or changed the system components as you required, please prepare your device for operation again as follows:

► Install the battery again (see "Installing a battery", Page 34).
► Turn the notebook the right way up again and place it on a flat surface.
► Reconnect the cables that you disconnected before.

Settings in BIOS Setup Utility

The *BIOS Setup Utility* allows you to set the system functions and the hardware configuration for the notebook.

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

The *BIOS Setup Utility* program contains the following menus:

About	Displays information relating to the BIOS, processor and notebook
System	Advanced system settings
Advanced	Configuration of various hardware components, such as mouse, keyboard, processor
Security	Password settings and security functions
Boot	Configuration of the start-up sequence
Exit	Exits the *BIOS Setup Utility*

Starting the BIOS Setup Utility

► Reboot the notebook (switch off/on or reboot the operating system).

↳ The following or a similar display appears on the screen at start-up:

```
<F2> BIOS Setup <F12> Boot Menu
```

► Press the function 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 customer service centre.

The *BIOS Setup Utility* starts.

Operating BIOS Setup Utility

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

With the F9 key you can load the default settings of the *BIOS Setup Utility*.

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

↳ The menu is displayed on the screen.

► Select the option you want to change with the cursor keys ↑ or ↓.

► Press the Enter key.

► 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 Utility

You need to select the desired option in the *Exit* menu and activate it by pressing the Enter key:

Exit Saving Changes - save changes and exit BIOS Setup Utility

► To save the current menu settings and exit the *BIOS Setup Utility*, select *Exit Saving Changes* and *Yes*.

↳ The notebook is rebooted and the new settings come into effect.

Exit Discarding Changes – Discard changes and exit BIOS Setup Utility

► To discard the changes, select *Exit Discarding Changes* and *Yes*.

↳ The settings in place when *BIOS Setup Utility* was called remain effective. *BIOS Setup Utility* is terminated and the notebook is rebooted.

Load Setup Defaults – Copy Standard Entries

► To copy the standard entries for all menus of the *BIOS Setup Utility*, choose *Load Setup Defaults* and *Yes*.

Discard Changes – Discard changes without exiting the BIOS Setup Utility

► To discard the changes you have made, select *Discard Changes* and *Yes*.

↳ The settings in place when *BIOS Setup Utility* was called remain effective. You can now make additional settings in the *BIOS Setup Utility*.

► If you want to exit*BIOS Setup Utility*with these settings, select *Exit Saving Changes* and *Yes*.

Save Changes - save changes without exiting the BIOS Setup Utility

► To save the changes, select *Save Changes* and *Yes*.

↳ The changes are saved. You can now make additional settings in the BIOS Setup Utility.

► If you want to exit BIOS Setup Utility with these settings, choose *Exit Saving Changes* and *Yes*.

Save Changes and Power Off

► To save the changes and switch off your device, select *Save Changes and Power Off* and *Yes*.

↳ The changes are saved. Your device is shut down.

Troubleshooting and tips

Refer to the safety information in the "Safety" manual when connecting or disconnecting cables.

If a fault occurs, try to correct it as described. 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.
- ► Please contact the Hotline/Service Desk.

You can find the telephone numbers in the service desk list. Please have the following information ready when you call:

- The model name and serial number of the notebook. The serial number is located on a sticker on the underside of the notebook.
- Notes of any messages that appear on the screen and information on acoustic signals.
- Any changes you have made to the hardware or software since receiving the notebook.
- Any changes you have made to the *BIOS Setup* settings since receiving the notebook.
- Your system configuration and all peripheral devices connected to your system.
- Your sales contract.

Our notebooks have been designed primarily with mobile applications in mind. This means that considerable effort has been made to optimise components and equipment in terms of weight, space and energy requirements. Depending on the particular configuration you have purchased, it is possible that functionality may be slightly reduced compared to a desktop PC if you are running processor-intensive gaming software, e.g. games with intensive 3D graphics. Updating your hardware with drivers which have not been approved by Fujitsu Technology Solutions may result in performance losses, data losses or malfunction of the equipment. A list of approved drivers and current BIOS versions can be downloaded from: "http://ts.fujitsu.com/support/downloads.html"

Help if problems occur

Should you at any time have a problem with your computer that you can't solve yourself, in many cases you can quickly solve it by using the *SystemDiagnostics* program which is pre-installed on your computer.

The *SystemDiagnostics* program is already installed on devices which were delivered with a Windows operating system.

- ► To start the *SystemDiagnostics* program, click on *Startsymbol - Program - Fujitsu - SystemDiagnostics*.
- ► If a problem is found during a test run, the *SystemDiagnostics* program outputs a code (e.g. DIFS-Code YXXX123456789123).
- ► Make a note of the output DIFS code and the identity number of your device. The identity number can be found on the type rating plate on the back of the casing.
- ► For further clarification of the problem, contact the Service Desk for your country (see the Service Desk list or visit the Internet at "http://ts.fujitsu.com/support/servicedesk.html"). When you do this, please have ready the identity number and serial number of your system and the DIFS code.

Restoring the hard disk contents under Windows

You can use the "Windows Recovery CD" (optionally available) and the "Drivers & Utilities CD/DVD" to reinstall the operating system.

The instructions are provided on the case of the Recovery CD.

During the reinstall process your personal files and any installed programs will be deleted. We advise you to backup your files to an external hard drive, or CD / DVD disk before you start.

- ► Switch the notebook on.
- ↳ 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 function key F12.
- ► Insert the "Windows Recovery CD" into the optical drive.
- ► Select *CD-ROM* and press the Enter key.
- ► Follow the instructions on the screen.
  After the installation you must install all the drivers again. Some installed hardware components will not be correctly supported until this has been done.
- ► Insert the "Drivers & Utilities" CD/DVD into the optical drive. The CD starts automatically.
- ► Click on the *Desk Update* button.
- ► Select *Automatic driver installation (Express)* and click on *Start installation*.
- ► Follow the instructions on the screen.
- ► Restart your notebook when the driver installation is completed.

The notebook’s date or time is incorrect

Cause	Troubleshooting
Time and date are incorrect.	► With the *BIOS-Setup-Utility*, you can set the date and time in the *main* menu.

If the date and time are repeatedly incorrect when you switch on the notebook, the built-in battery that supplies the internal clock has failed.

► Please contact your sales outlet or our Hotline/Service Desk.

When certain characters are entered on the keyboard, only numerals are written

Cause	Troubleshooting
The virtual numeric keypad of your device is activated, see "Virtual numeric keypad", Page 24	► Press the Num key.

The notebook’s LCD screen remains blank

Cause	Troubleshooting
Monitor is switched off.	► Press a key or touch the touchpad.
External monitor or television set connected.	► Press the key combination to switch the screen output, see "Key combinations", Page 24.

The LCD screen is difficult to read

Cause	Troubleshooting
Reflected glare	► Turn the notebook or alter the tilt of the LCD screen. ► Increase the brightness of the screen.

The external monitor remains blank

Cause	Troubleshooting
Monitor is switched off.	► Switch the external monitor on.
Power saving has been activated (monitor is blank).	► Press any key to continue.
Brightness is set to dark.	► Adjust the brightness of the monitor.
Screen output is set to the notebook's LCD screen	► Press the key combination to switch the screen output, see "Key combinations", Page 24.
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

Cause	Troubleshooting
The wrong external monitor has been selected or the wrong screen resolution has been set for the application program.	► Terminate the application program in Windows by pressing Alt + F4. If the fault persists after closing the program, use the key combination for switching the screen output (see "Key combinations", Page 24) to switch over to the notebook's LCD screen. Change the following setting: ► Set the screen resolution: Set the screen resolution as described in the documentation for your operating system. ► Select monitor: Select monitor 1 or 2 as described in the documentation for your operating system.

The notebook cannot be started

Cause	Troubleshooting
The battery is not installed correctly.	► Check whether the battery is installed correctly in its compartment. ► Switch the notebook on.
The battery is dead.	► Charge the battery. **or** ► Insert a charged battery. **or** ► Connect the mains adapter to the notebook.
The power adapter is not connected correctly.	► Check whether the mains adapter is connected correctly to the notebook. ► Switch the notebook on.

The notebook stops working

Cause	Troubleshooting
Notebook is in energy saving mode.	► Leave energy saving mode.
An application programme has caused the malfunction.	► Close the application program or restart the notebook (by restarting the operating system or switching the device off and back on again).
The battery is dead.	► Charge the battery. **or** ► Insert a charged battery. **or** ► Connect the mains adapter to the notebook.

The printer does not print

Cause	Troubleshooting
The printer is not switched on.	► Make sure that the printer is switched on and ready for operation (refer to the documentation supplied with the printer).
The printer is not connected correctly.	► Check that the data cable connecting the notebook to the printer is properly connected.
The printer driver is faulty or not correctly installed, or it is the wrong printer driver.	► Check that the data cable connecting the notebook to the printer is properly connected. ► Check whether the correct printer driver is loaded (refer to the printer documentation).

The radio connection to a network does not work

Cause	Troubleshooting
The wireless component is disabled.	► Switch the radio component on (see "Switching the wireless components on and off", Page 48).
The wireless component is enabled. Despite this, the wireless connection to a network does not work.	► Check whether the radio connection is switched on via the software. ► Further information on using the radio component can be found in the help files.

Acoustic warnings

Cause	Troubleshooting
A beep sounds every few seconds The battery is almost flat.	► Charge the battery.

Error messages on the screen

This section describes the error messages generated by the BIOS Setup. Error messages displayed by the operating system or programmes are described in the relevant documentation.

If the error message appears repeatedly, despite troubleshooting measures, please contact the place of purchase or our customer service centre.

Error message/cause	Resolution
CMOS battery bad If the error message occurs repeatedly, the buffer battery in the notebook is flat.	► Contact your sales outlet or our customer service centre.
System CMOS checksum bad - default configuration used The system configuration information is incorrect.	► Switch the notebook off. ► Switch the notebook on. ► Press the function key F2 to access the *BIOS Setup*. ► In the *BIOS Setup*, select the *Exit* menu. ► Select the entry *Load Setup Defaults*. ► Select *OK* and press the Enter key.
Extended memory failed at offset: xxxx Failing Bits: zzzz zzzz When testing the extended memory an error has resulted at the address xxxx.	► Check whether the additional memory module has been inserted correctly.
Failure Fixed Disk n The settings of the hard disk drive are incorrect.	► Start the *BIOS Setup* (*Primary Master* submenu) and select the correct settings.
Keyboard controller error	► Switch the notebook off with the ON/OFF switch. ► Wait 3 - 5 seconds and switch on the notebook again.
Keyboard error	If you are using an external keyboard: ► Check the connection and reboot the notebook.
nn Stuck key	► Make sure that no key is pressed.
Operating system not found	► Check in the *BIOS Setup* whether your hard disk has been set correctly. ► Make sure that the operating system is installed on the corresponding drive.
Press <F1> to resume, <F2> to SETUP This error message appears if an error occurs during the self-test before starting the operating system.	► Press the F1 function key to start the operating system. ► Press the function key F2 to access the *BIOS Setup*.
Previous boot incomplete - Default configuration used Due to an error during the previous system boot, default values were used for certain settings. Check the settings in the BIOS Setup.	► Press the F1 function key when prompted to do so.
Real time clock error	► Contact your sales outlet or our customer service centre.
nnnnK Shadow RAM failed at offset: xxxx Failing Bits: zzzz	► Contact your sales outlet or our customer service centre.
System battery is dead - Replace and run SETUP	► Contact your sales outlet or our customer service centre.

Error message/cause	Resolution
System cache error - Cache disabled	► Contact your sales outlet or our customer service centre.
System timer error	► Contact your sales outlet or our customer service centre.

Technical data

Notebook

Device	CELSIUS H700
Processor	Intel Core i5, i7
Main memory	Maximum 8 Gbyte DDR3 SDRAM 2 slots for 2 GByte or 4 GByte modules
Possible modules	• Second battery • Second hard disk drive • Optical drive (Blu-Ray RE, Super Multi) • Weight Saver
Electrical data	
Safety regulations complied with	CE, CE!, EN55022, EN55024, EN301489, EN300328, EN301893, UL NoA, CB, EN50371
Protection class	II
Maximum power draw (with the notebook switched on and the battery charging)	100 W
LCD monitor	
Display diagonal	15.6 inch / 39.62 cm TFT HD (1366 x 768), 15.6 inch / 39.62 cm TFT HD+ (1600 x 900), 16 million colours
Display adapter	
Chip	NVIDIA Quadro FX 880M
Video memory (VRAM)	1 Gbyte GDDR3 1600MHz
Audio	
Sound chip	Realtek ALC 269
Dimensions	
Width x depth x height (front/back)	372 mm x 256.5 mm x 35/37 mm
Weight with Weight Saver	approx. 2.7 kg with 6-cell battery approx. 2.8 kg with 8-cell battery
Input devices	
Keyboard	86 keys
Touchpad	1 touchpad, 2 touchpad buttons
TouchStick	1 touchstick, 2 touchstick buttons
Slots	
ExpressCard slot	1 x ExpressCard/34 or ExpressCard/54
PC card slot	PCMCIA 1 x type I or II
Memory card slot	SD Card, Memory Stick, Memory Stick Pro
SIM card slot	1 x

Ports	
VGA monitor port	15-pin socket
Display port	20-pin socket
Modem port (device-dependent)	RJ11 socket
LAN port	RJ45 socket
Serial port	9-pin connector
Microphone port/Line In	3.5 mm mono mini-jack
Headphones port/Line Out	3.5 mm stereo mini jack
FireWire port	4-pin S400
USB port	4 x USB 2.0
eSATA port	1 x
Docking port	1 x
Ambient conditions	
Environment class 3K2	DIN IEC 721
Mechanical class 7M2	DIN IEC 721
Temperature	
Operation	5 °C ... 35 °C
Transportation	-15 °C ... 60 °C

Rechargeable battery

You can find information on the batteries used in your device at "http://ts.fujitsu.com/support".

	6-cell rechargeable battery	8-cell rechargeable battery
Rated voltage	10.8 V	14.4 V
Rated capacity	56 Wh	83 Wh

Mains adapter 100 W

Rated voltage	100 V to 240 V (automatic)
Max. rated current	6.32 A

An additional mains adapter or power cable can be ordered at any time.

Port Replicator (optional)

Electrical data	
Safety regulations complied with	CE, CB
Protection class	II
Dimensions/weight	
Width x depth x height (front/back)	184 mm x 118 mm x 14/40 mm
Weight	approx. 550 g
Ports	
LAN port	RJ45 socket
VGA port	15-pin socket
DisplayPort	20-pin socket
Parallel port	25-pin socket
Serial port	9-pin connector
Microphone port	3.5 mm mono mini-jack
Headphones port	3.5 mm mono mini-jack
FireWire port	4-pin S400
USB port	4 x USB 2.0
eSATA port	1 x
Docking port	100-pin
Ambient conditions	
Environment class DIN IEC 721	3K2
Mechanical class DIN IEC 721	7M2
Temperature:	
Operation	5 °C ... 35 °C
Transportation	-15 °C ... 60 °C

Manufacturer’s notes

Energy Star

Devices which are certified according to the Energy Star environmental mark help to save money and reduce the emission of greenhouse gases.

Power Management settings on delivery:

- Monitor switched off after < 15 minutes of inactivity
- Automatic activation of energy saving mode (ACPI S3): < 30 minutes of inactivity

Detailed information about the requirements of the "Energy Star" environmental mark and the products which satisfy these requirements can be found on the Internet at "https://www.energystar.gov/".

Disposal and recycling

Information about this subject can be found on your notebook or on our Internet pages.

Declarations of Conformity

The "Declarations of Conformity" for the device can be found at our Internet address under: "http://ts.fujitsu.com/ce".

Fujitsu Technology Solutions hereby declares that your device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

CE marking

CE marking for devices with radio component

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 equipment can be used in the following countries:

Belgium	Bulgaria	Denmark	Germany
Estonia	Finland	France	Greece
UK	Ireland	Iceland	Italy
Latvia	Liechtenstein	Lithuania	Luxembourg
Malta	The Netherlands	Norway	Austria
Poland	Portugal	Rumania	Sweden
Switzerland	Slovakia	Slovenia	Spain
Czech Republic	Hungary	Cyprus	

Contact the corresponding government office in 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

If there is no FCC logo and also no FCC ID on the device then this device is not approved by the Federal Communications Commission (FCC) of the USA. Although it is not explicitly forbidden to travel in the US trading area carrying this device, to avoid trouble at customs clearance, Fujitsu Technology Solutions GmbH recommends not to bring this device into the US trading area.

Regulatory information for notebooks without radio device

NOTICE:

Changes or modifications not expressly approved by Fujitsu Technology Solutions 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 and receiver.
- Connect the equipment into an outlet that is on a different circuit than the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

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 semi-public 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 authorised 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 effectuées 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. Only use a UL Listed Class 2 adapter. The correct output rating is indicated on the AC adapter label. Refer to the illustration below for the correct AC Adapter output polarity:

CAUTION:

To reduce the risk of fire, use only 26AWG 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 instructions.

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 to 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 authorisation for use

Radio-frequency electromagnetic energy is emitted from the wireless 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 authorised by Fujitsu Technology Solutions may invalidate the user's right to operate this equipment.

Index

56k modem 45

A
A beep sounds every second 83
Acoustic error messages 86
Alt + Tab 26
Anti-theft protection 56
Application keys 27
Audio devices, connecting 71
Audio ports 71

B
Back tab 26
Backspace 23
Bass loudspeaker (subwoofer) 44
Battery
  battery life 32
  caring for and maintaining 32
  charge level 32, 40
  charging 32
  self-discharge 32
  storage 32
Battery status meter 32
BIOS Setup Utility
  calling 79
  exiting 80
  operating 79
  protecting with password 56
  settings 79
Bluetooth
  Switching off module 48
  Switching on module 48
Bluetooth, safety notes 12
Board 72
Buffer battery, load 83
Buttons 22

C
Caps Lock 23
  indicator 20
CardBus, see PC card 43
CD/DVD indicator 20, 37
CD/DVD:
  manual emergency removal 38
CE marking 93
Charging capacity, battery 32
Cleaning 14
Components
  installing / removing 72
Configuration, BIOS Setup Utility 79
Connecting audio devices 70–71
Connecting headphones 71
Crystal View display
  cleaning 14
Ctrl+Alt+Del 26
Ctrl+C 26
Cursor control keys 23
Cursor keys 23

D
Date is incorrect 83
Declaration of conformity 92
Device
  setting up 16
Device drivers
  Parallel port 67
Device drivers,
  Serial port 67
Devices
  connecting 65
  Connecting 67
  disconnecting 65
Display
  enlarge 25
DOC (INDUSTRY CANADA) NOTICES 95
Drive
  Removing 35

E
Emergency removal of data carrier 38
Energy
  energy saving 13
Energy saving 13
Energy saving mode
  leaving 85
Enter 23
Enter key 23
Error message:
  on the screen 86
Error messages on the screen 86
Errors
  Acoustic warnings 86
ESD 72
Ethernet LAN 49
ExpressCard 43
External devices
  Connecting 67

F
Fault
correction 81
Fingerprint sensor 55
configure 55
FireWire
connecting devices 70
FireWire:
port 70
First-time setup 15
Fn + F1 25
Fn + F10 25
Fn + F3 25
Fn + F4 25
Fn + F5 25
Fn + F6 25
Fn + F7 25
Fn + F8 25
Fn + F9 25
Fn key 23
Full-screen mode 25

G
Getting started 15

H
Handling
data carriers 36
Hard disk:
restoring the contents 82
Hardware configuration 79

I
Important notes 12
Incorrect date/time 83
Indicator
Caps Lock 20
CD/DVD 20
Num Lock 20
Power-on indicator 18
Scroll Lock 20
Inserting
a data carrier 37

K
Kensington MicroSaver 56
Keyboard 22
cleaning 14

L
LCD screen
cleaning 14
difficult to read 83
notes 30
reflected glare 83
remains blank 83
LCD screen is too dark 83
Life, battery 32
Line feed 23
Loudspeakers 44
disable 25
enable 25

M
Main memory
see Adding memory 73
Mains adapter
connecting 16
setting up 16
Manual removal of data carrier 38
Mechanical backup 56
Memory card
handling 41
inserting 41
removing 42
Memory expansion
installing 75
removing 74
Memory module
important notes 73
installing 75
removing 74
Microphone 44
Microphone, connecting 71
Mobile operation 13
Modem 45
connecting 46
Module
Removing 35
Module bay 34
Modules 34
Monitor
connecting 66
drifting display 84
remains blank 84
Monitor port
see VGA connection socket 66

N
Notebook
before you travel 13
cannot be started 85
cleaning 14
stops working 85
switching off 21
switching on 21
transporting 13–14
using 18
Notebook, operation 18
Notes 12
boards 72
cleaning 14
disposal / recycling 92
energy saving 13
LCD screen 30
Safety 12
transport 13
Num Lock
indicator 20, 24
Numeric keypad 22
see Virtual numeric keypad 24

O
Operating system
activating system protection 58
cancel system protection 58
protecting with password 57
Operating system, restoring 82
Optical drive 36

P
Packaging 15
Parallel port 67
Connecting devices 67
Settings 67
Password
changing 57
entering 57
removing 57
Password protection 56
Password protection:
hard disk 58
PC card 43
PC-card, see PC card 43
PCMCIA, see PC card 43
Peripheral devices
connecting 65
disconnecting 65
Port Replicator
Connecting a notebook 51
Power
power consumption 40
power-management features 40
Power-on indicator 18
Preparing for operation 16
Printer does not print 86

R
Radio component:
safety notes 12
Rechargeable battery 32
see Battery 32
Regulatory information
notebooks with radio device 97
Notebooks without radio device 94
Removing
a data carrier 37
Removing memory
see Adding memory 73
Return 23

S
Safety notes 12
Screen
no screen display 84
Screen brightness
decrease 25
increase 25
Scroll Lock
indicator 20
Security functions 55
SystemLock 61
Security functions,
SmartCard 61
Selecting a location 16
Self-discharge, battery 32
Serial port 67
Connecting devices 67
Serial port,
Settings 67
Servicing 72
Setup
see BIOS Setup Utility 79
Shift 23
Shift + Tab 26
Shift key 23
Sleep mode
activating 25
Slot
Memory cards 41
Start key 23
Status indicator panel 18

Summer time 83
Supervisor password
changing 57
entering 57
removing 57
Switching on for the first time 17
System configuration 79
System expansion 73
see Adding memory 73
System settings, BIOS Setup Utility 79

T
Tab key 23
Technical data
Mains adapter 90
notebook 89
The radio connection to a network does not work 86
Time not correct 83
Time, daylight savings 83
Tips 81
Toggle output screen 25
Touchpad 28
buttons 28
cleaning 14
disable 25
executing commands 29
moving the pointer 28
selecting an item 29
TPM 63
Transport
Transport damage 15
Transportation 13–14
Travel, notebook 13
Troubleshooting 81
Trusted Platform Module 63

U
USB ports 68
User password
changing 57
entering 57
removing 57
Using a Kensington Lock 56

V
VGA connection socket 66
Video devices, connecting 70
Virtual numeric keypad 24
Volume
decrease 25
increase 25
Volume control 44

W
Webcam 31
Weight Saver
Removing 35
Wireless LAN
Switching off module 48
Switching on module 48
Wireless LAN:
safety notes 12