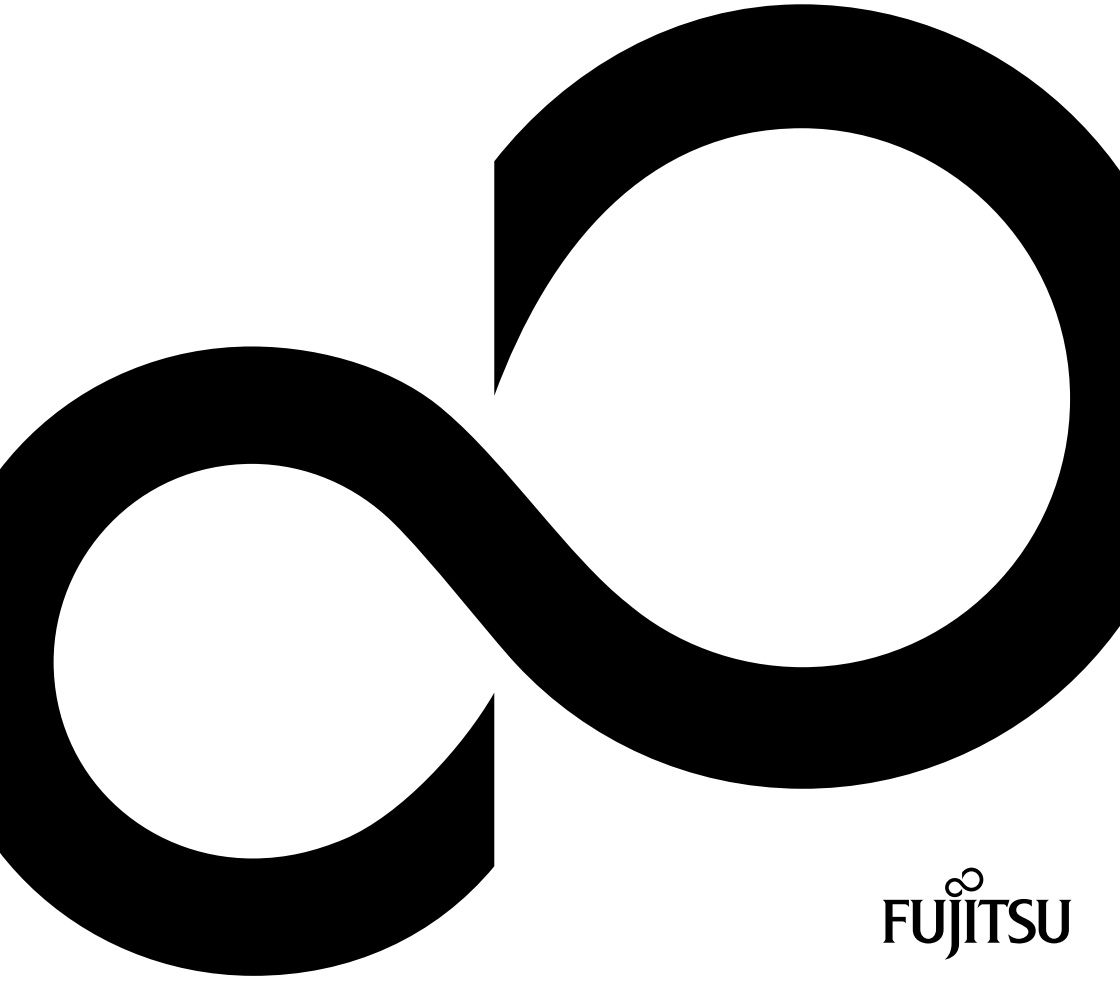
CELSIUS W530 / W530power



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CELSIUS W530 / W530power

Operating Manual

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Your CELSIUS...

... is available with various configuration levels which differ in terms of hardware and software equipment. You can install accessible drives (e.g. DVD drives) and other modules.

This manual tells you how to start using your device and how to operate it in daily use. This manual applies for all configuration levels. Depending on the chosen configuration level, some of the hardware components described may not be available on your PC. Please also read the notes about your operating system.

Depending on the configuration selected, the operating system is preinstalled on your hard disk (e.g. Windows 7).

Further information on this device is also provided:

- in the "Quick Start Guide" poster
- in the "Safety/regulations" manual
- in the "Warranty" manual
- in the operating manual for the monitor
- in the manual for the mainboard
- in the documentation for your operating system
- in the information files (e.g. **.PDF*, **.HTML*, **.DOC*, **.CHM*, **.TXT*, **.HLP*)

Some of the manuals listed can be found in electronic form on the "Drivers & Utilities" DVD.

You can access and view the required information using the *Acrobat Reader* program, which is also included on the DVD. If necessary, you can also print out the manuals.

Validity of the Reference Manual

This Reference Manual is valid for the following systems:

- CELSIUS W530
- CELSIUS W530power

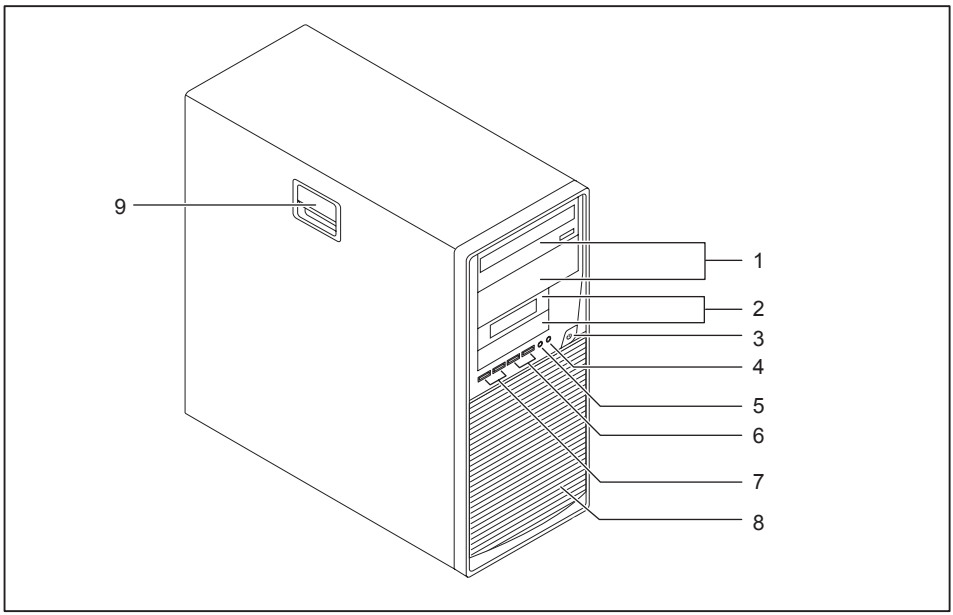
Notational conventions

	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://www.fujitsu.com/fts" • Names of CDs, DVDs and titles or designations for other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety/Regulations" 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

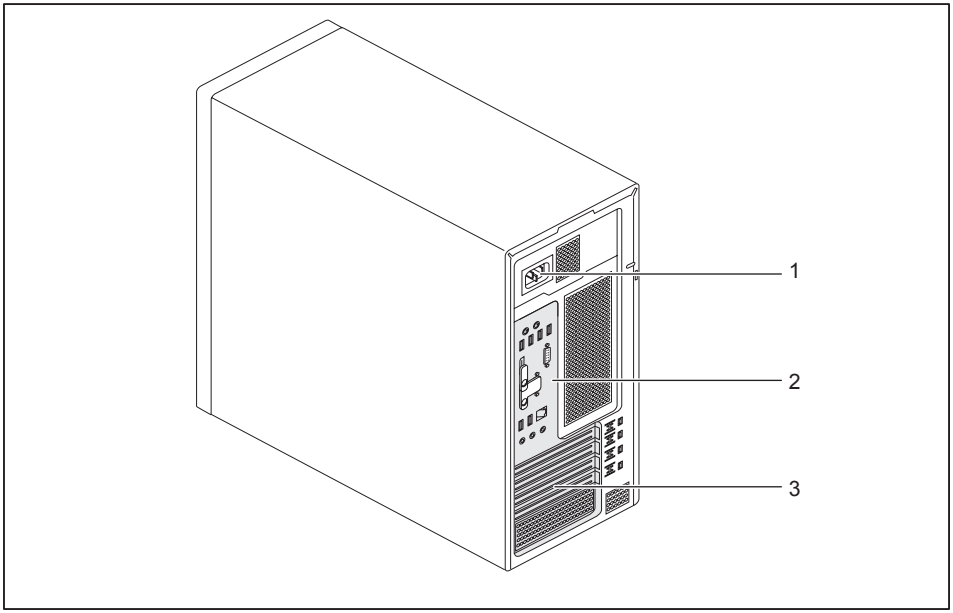
This chapter presents the individual hardware components of your device. This will provide you with an overview of the ports and operating elements on the device. Please familiarise yourself with these components before starting to work with your device.

Front



1 = Module bays for 5¼" drives
2 = Module bays for 3½" drives
3 = ON/OFF switch
4 = Headphone port
5 = Microphone jack
6 = USB 2.0 ports
7 = USB 3.0 ports
8 = Hard disk front panel (removable)
9 = Casing lock (optional)

Rear



1 = Alternating voltage socket (AC IN)

2 = Ports for external devices (device-dependent)

3 = Slot covers

Important notes

In this chapter you will find information regarding safety which it is essential to take note of when working with your device.

Safety information

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

When installing and operating the device, please observe the notes on environmental conditions in Chapter "Technical data", Page 57 as well as the instructions in Chapter "Getting started", Page 13.

When setting up the device, make sure there is clearance all around it so that the casing receives enough ventilation. In order to avoid overheating, do not cover the ventilation areas of the monitor or the device.

You must only operate the device if the rated voltage used by the device is set to the local mains voltage.

You must remove the power plug from the power socket so that the mains voltage is completely disconnected.

Operate the device only with the casing closed.

Replace the lithium battery on the mainboard in accordance with the instructions in "Replacing the lithium battery", Page 56.

Caution, components in the system can get very hot.

The activities described in these instructions must always be performed with the greatest care.

Repairs to the device must only be performed by qualified technicians. Incorrect repairs could put the user at great risk or cause serious damage to the equipment (electric shock, risk of fire).

Transporting the device

Transport all parts separately in their original packaging or in a packaging which protects them from knocks and jolts, to the new site.

Do not unpack them until all transportation manoeuvres are completed.

If the device is brought from a cold environment into the room where it will be used, condensation may occur. To avoid damaging the device, wait until it has reached room temperature and is absolutely dry before initial startup.

Cleaning the device

Turn off all power and equipment switches and disconnect the power plug from the mains outlet.

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

Do not use any cleaning agents that contain abrasives or may corrode plastic (alcohol, thinner or acetone).

Never clean the device with water! Water entering into the device could present a serious risk to users (e.g. electric shock).

Ensure that no liquid enters the system.

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

Use disinfectant wipes to clean the keyboard and the mouse.

Energy saving, disposal and recycling

You can find information on these subjects on the "Drivers & Utilities" DVD or on our website ("http://www.fujitsu.com/fts/about/fts/environment-care/").

CE marking

The shipped version of this device complies with the requirements of European Union directives 2004/108/EC "Electromagnetic compatibility", 2006/95/EC "Low voltage directive" and 2009/125/EC "Ecodesign".

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.

The CE marking valid for your device can be found on the device label.

Explanation: CE nnnn (!) ; nnnn defines the type of CE marking and the exclamation mark indicates a device with radio components.

You can find more information and declarations of conformity on the Internet at: "http://globalsp.ts.fujitsu.com/sites/certificates".

This equipment can be used in the following countries:

Belgium	Bulgaria	Denmark	Germany
Estonia	Finland	France	Greece
UK	Ireland	Iceland	Italy
Croatia	Latvia	Liechtenstein	Lithuania
Luxembourg	Malta	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.

FCC Compliance Statement

If the device complies with the FCC regulations, the FCC sign can be found on the type rating plate.

FCC Class B Compliance Statement

DOC (INDUSTRY CANADA) NOTICES
Notice to Users of Radios and Television:

This class B digital apparatus complies with Canadian ICES-003.

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

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 and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. 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 strict 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 equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.

Getting started

Please observe the safety information in the "Important notes", Page 9 chapter.

Unpacking and checking the delivery

It is recommended not to throw away the original packaging material! It may be required for reshipment at some later date.

- ► Unpack all the individual parts.
- ► Check the contents of the package for any visible damage caused during transport.
- ► Check whether the delivery conforms to the details in the delivery note.
- ► Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

Steps for initial setup

Only a few steps are necessary to put your new device into operation for the first time:

- Select a location for device and set up device
- Connect external devices such as mouse, keyboard and monitor
- Check the voltage at the mains outlet and connect the device to an electrical outlet
- Switch the device on

You will learn more about the individual steps in the following sections.

External devices

If you have received other external devices in addition to your own device (e.g. a printer), do not connect these until after the initial installation. The following sections describe how to connect these external devices.

Drives and boards

If you have received drives or boards with your device, please do not install them until after first-time setup. How to install drives and boards is described in the "System expansions", Page 34 chapter.

Setting up the device

When installing your device, please read the recommendations and safety notes in the "Safety/regulations" manual.

We recommend that you place your device on a surface which is not slippery. In view of the many different finishes and varnishes used on furniture, it is possible that the rubber feet will mark the surface they stand on.

Depending on the location of your device, bothersome vibrations and noises may occur. To prevent this, a distance of at least 10 mm / 0.39" should be maintained from other devices on casing sides without ventilation surfaces.

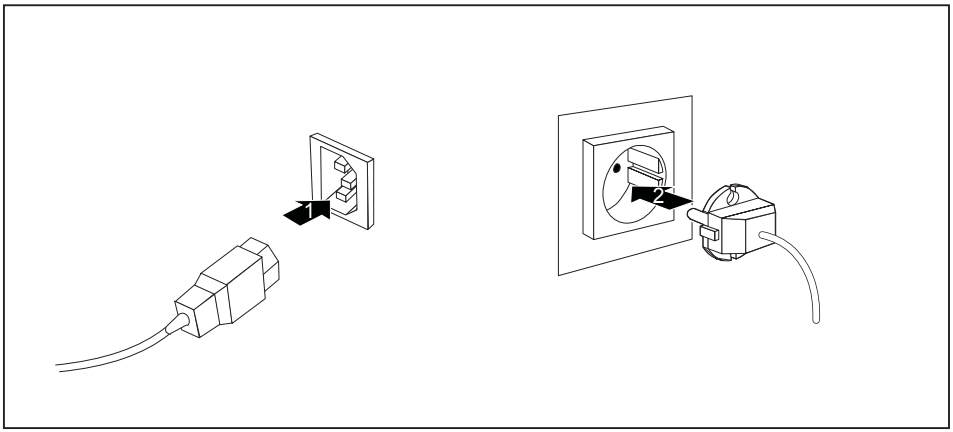
In order to avoid overheating, do not cover the ventilation areas of the monitor or the device.

A minimum distance of 200 mm / 7.87" from the device must be observed for ventilation areas.

Do not stack several devices on top of each other.

Do not expose the device to extreme ambient conditions (see "Technical data", Page 57, section "Ambient conditions"). Protect the device against dust, humidity and heat.

Connecting the machine to the mains



► Connect the mains cable to the machine (1).
► Plug the mains plug into a three-pin socket (2).

After the mains power cable has been attached, the device automatically switches itself on for a few seconds to run a system test, then switches off again.

Connecting external devices

Read the documentation on the external device before connecting it.

With the exception of USB devices, always remove all power plugs before connecting external devices!

Do not connect or disconnect cables during a thunderstorm.

Always take hold of the actual plug when disconnecting a cable. Never pull the cable!

Connect and disconnect the cables in the order described below.

Cable connecting

- ► Switch off all affected devices.
- ► Remove power plugs from the mains outlets for all devices.
- ► Plug all cables into the device and peripherals. Please make sure that you always observe the safety notes provided in "Important notes", Page 9.
- ► Plug all data communication cables into the sockets provided for the data / telecommunication networks.
- ► Plug all power cables into the grounded mains outlets.

USB devices are hot-pluggable. This means you can connect and disconnect USB cables while your device is switched on.

Additional information can be found in "Connecting external devices to the USB ports", Page 20 and in the documentation for the USB devices.

Disconnecting cables

- ► Switch off all affected devices.
- ► Remove power plugs from the mains outlets for all devices.
- ► Unplug all data communication cables from the utility sockets.
- ► Unplug all cables from the device and peripherals.

Ports on the device

The ports are located on the front and back of the device. Not all ports are necessarily present on your device. The standard ports are marked with the symbols shown below (or similar). Detailed information on the location of the ports is provided in the manual for the mainboard.

PS/2 keyboard port

Parallel port/printer (optional)

Serial port 1

Serial port 2

VGA monitor port

Microphone port

Headphones

Audio input (Line in)

Audio output (Line out)

PS/2 mouse port

USB 2.0 - Universal Serial Bus

LAN port

USB 3.0 - Universal Serial Bus

SCSI connection

DVI-I monitor port

DP DisplayPort

Some of the connected devices require special software (e.g. drivers) (refer to the documentation for the connected device and operating system).

Connecting a monitor

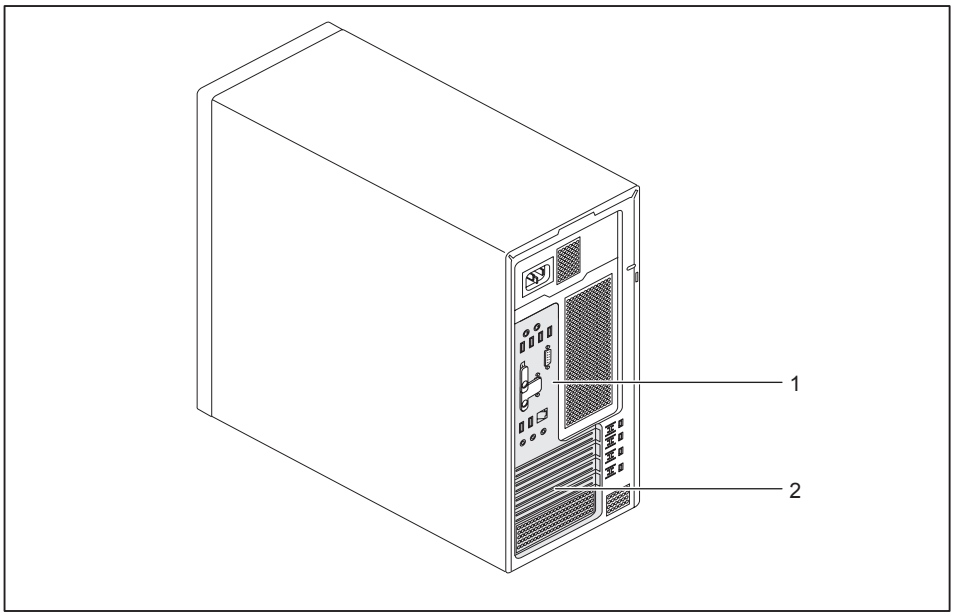
In the factory settings, the system is configured so that an available PCI display adapter is provided for screen output during initial setup.

This is also the case if there is an internal display adapter.

As soon as a PCI display adapter is plugged in or if the CPU has no graphics core, all onboard display adapter ports are covered ex works.

Depending on the configuration, you can use the monitor ports on the mainboard (1) or the monitor ports for an optional display adapter in one of the board slots (2) to connect a monitor to your device.

If you equip a device with an integrated display adapter and an optional display adapter, the integrated display adapter is initially deactivated on attaching the optional display adapter. If both display adapters are to be operated, you must first activate this function in the *BIOS setup*.



1 = Monitor ports of the mainboard (only processors with graphics core)

2 = Monitor ports of the optional display adapter

Only attach the monitor to your device when it is switched off.

- ► Follow the instructions contained in the monitor manual to prepare the monitor for operation (e.g. connecting cables).
- ► Connect the data cable to a suitable monitor port on the device (DVI-I, DisplayPort).

If an additional display adapter other than the CPU display adapter is plugged into the system, only one additional monitor is provided for display on the onboard display adapter. The two others act as ServicePorts and are not intended for simultaneous image playback.

The DisplayPort is the preferred port. Therefore, the cover here can be broken off with the help of a predetermined breaking point, in order to make the port accessible. If a DVI or VGA port is required, the display adapter cover must be removed.

Connecting the mouse

You can connect a USB mouse or a PS/2 mouse to your device.

Connecting a USB mouse

► Connect the USB mouse to one of the USB ports on the device.

Connecting a PS/2 mouse

The PS/2 mouse is only detected by the device if you connect the mouse when the device is switched off and then switch the device on again.

► Switch your device off.

If you do not attach a mouse to the PS/2 mouse port, you can disable the mouse controller in the *BIOS Setup* in order to free the IRQ12 for a different application.

► Connect the PS/2 mouse to the PS/2 mouse port of the device.
► Switch your device on again.

Connecting the keyboard

You can connect a USB keyboard or a PS/2 keyboard to your device.

Connecting a USB keyboard

Use the supplied keyboard cable only.

- ► Plug the rectangular connector of the keyboard cable into the rectangular socket on the underside or on the rear of the keyboard.
- ► Insert the flat rectangular USB plug of the keyboard cable into one of the device's USB ports.

Connecting a PS/2 keyboard

Use the supplied keyboard cable only.

The PS/2 keyboard is only detected by the device if you connect the keyboard when the device is switched off and then switch the device on again.

- ► Switch your device off.
- ► Plug the rectangular connector of the keyboard cable into the rectangular socket on the underside or on the rear of the keyboard.
- ► Plug the round plug of the keyboard cable into the keyboard port on the device.
- ► Switch your device on again.

Connecting external devices to the parallel (optional) or serial port

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 refer to the documentation of the external device.

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 carrier.

Connecting external devices to the USB ports

You can connect a wide range of external devices to the USB ports (e.g. printer, scanner, modem or keyboard).

USB devices are hot-pluggable. This means you can connect and disconnect USB cables while your device is switched on.

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 one of the USB ports on your device.

Device drivers

The external USB devices you connect to the USB ports usually require no driver of their own, as the required software is already included in the operating system. If the device requires separate software, please note the information in the manufacturer's manual.

To ensure the transmission capacity of USB 2.0, the cable from the external USB device to the USB port of your device must not be longer than 3 m / 118.11 inches.

Switching on for the first time: installing the software

Once the installation has been started the device must not be switched off, unless the installation has been completed.

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

The installation will otherwise not be carried out correctly and the contents of the hard disk must be completely restored.

If the device is integrated into a network, the user and server details as well as the network protocol are required during the software installation.

Contact your network administrator if you have any questions about these settings.

When you switch on the device for the first time, the supplied software is installed and configured. Plan a reasonable amount of time for this, as this process must not be interrupted.

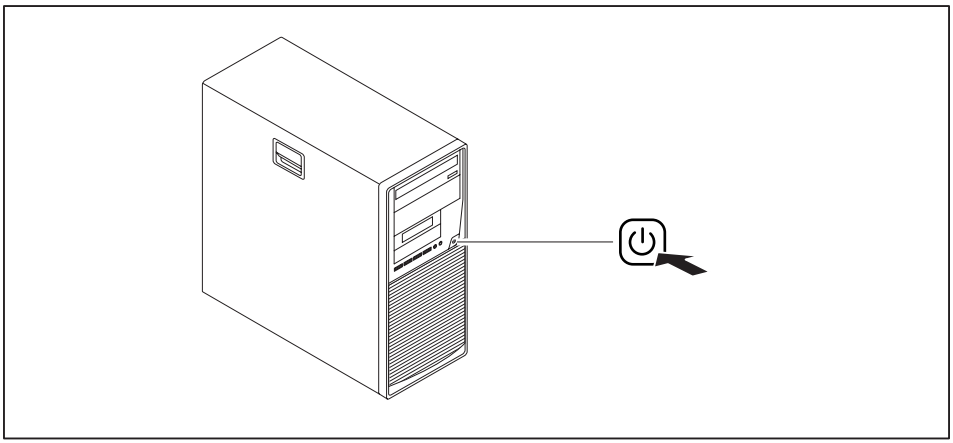
You may need the licence number for Windows during the installation. The licence number is located on a label on your device.

Switching on monitor and device

In order to avoid overheating, do not cover the ventilation areas of the monitor or the device.

- ► Switch the monitor on (see the operating manual for the monitor).
- ► Switch the device on. To do this, follow the instructions below.

Switching on the device



- ► Press the ON/OFF switch on the front of the device.
- ↳ The power indicator lights up and the device starts.

Installing the software

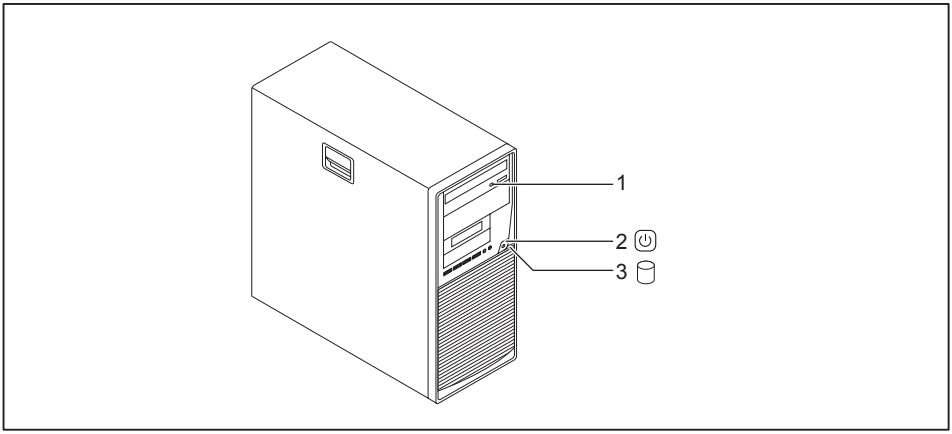
- ► During installation, follow the on-screen instructions.
- ► If anything is unclear regarding the data you are asked to input, read the online Help in your operating system.

You will find more information on the system, as well as drivers, utilities and updates on the "Drivers & Utilities" DVD and on the Internet at "http://www.fujitsu.com/fts/support".

You can find information and help on the Windows operating system functions on the Internet at "http://windows.microsoft.com".

Operation

Indicators on the device



No.	**indicator**	**Description**
1	Drive indicators	The indicator lights up when the CD-ROM or DVD drive of the device is accessed. You must never under any circumstances remove the CD/DVD while the indicator is lit.
2	Power-on indicator	• The indicator is illuminated: The device is switched on. • The indicator is flashing: The device is in energy-saving mode. After being switched on with the ON/OFF switch, the device powers up or returns to the state it was in before it entered energy-saving mode. • The indicator is not illuminated: The device is disconnected from the mains or is ready. If the device is ready it can be switched on with the ON/OFF switch.
3	Hard disk indicator	The indicator lights up when the hard disk drive in the device is being accessed.

In energy-saving mode the device must not be disconnected from the mains supply, as data loss may occur.

Switch the device on

► If necessary, switch the monitor on (see the operating manual for the monitor).
► Press the ON/OFF switch on the front of the device.
↳ The power indicator lights up and the device starts.

Switching off the device

► Shut down the operating system in a defined manner. In Windows: via the *Start* menu and the *Turn Off Computer* function.

or

► Briefly press the ON/OFF switch.

► If the operating system does not automatically switch the device into energy-saving mode or switch it off, press the ON/OFF switch until the device switches off. Warning, this could lead to a loss of data!

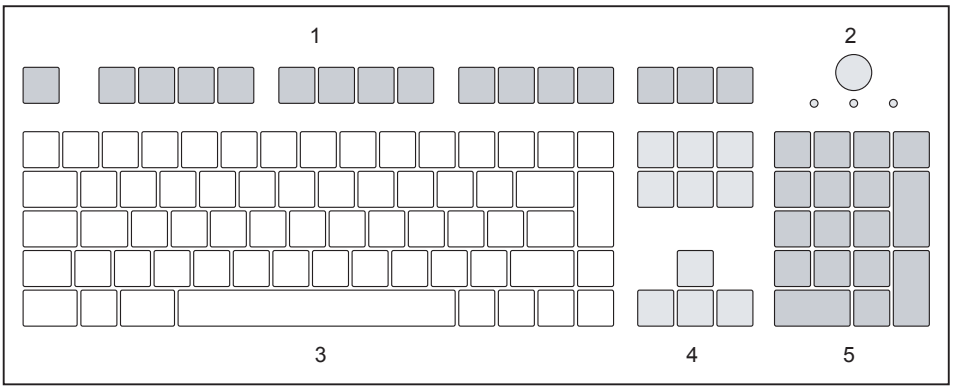
↳ If the device is switched off, the device consumes a minimum of energy.

The ON/OFF switch does not disconnect the device from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the power socket.

► If necessary, switch the monitor off (see the operating manual for the monitor).

Keyboard

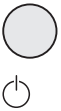
The illustrated keyboard is an example and may differ from the model you use.



1 = Function keys
2 = On/off switch (optional)
3 = Alphanumeric keypad
4 = Cursor keys
5 = Numeric keypad (calculator keypad)

Important keys and keyboard shortcuts

The description of the following keys and keyboard shortcuts applies to Microsoft operating systems. Details of other keys and keyboard shortcuts can be found in the documentation for the relevant application program.

Key / key combination	Description
	**On/off switch (optional)** Depending on the setting in the *BIOS Setup*, the device can be switched on or off with this switch. Some operating systems allow you to configure additional functions of the ON/OFF switch in the Control Panel. With some keyboards the ON/OFF switch can only be used with an ACPI (Advanced Configuration and Power Management Interface). Otherwise the key is inoperative. The mainboard must support this function.
	Enter key confirms the highlighted selection. The Enter key is also referred to as the "Return" key.
	Windows key (device-dependent: variant 1) calls up the Windows *Start* menu.
	Menu key (device-dependent: variant 1) calls up the menu for the marked item (Windows).
	Windows key (device-dependent: variant 2) Switches between the start screen and the last used application.
	Menu key (device-dependent: variant 2) Opens the menu for the active application.
	Shift key enables upper-case letters and the upper key symbols to be displayed.
	Alt Gr key (country-dependent) produces a character shown on the bottom right of a key (e.g. the @ sign on the Q key).

Key / key combination	Description
Num ⇩	**Num Lock key** By pressing the Num Lock key you switch between the upper- and lower-case levels of the calculator keypad. When the Num Lock indicator is lit the numeric keypad and arithmetic keys are active. When the Num Lock indicator is not lit the cursor control functions on the Numeric keypad are active.
Ctrl	**Ctrl key** performs a special operation when pressed in conjunction with another key. The Ctrl key is also called the "Control" or "Control key".
Ctrl + Alt + Del	**Windows Security/Task Manager** This key combination opens the Windows Security/Task Manager window.

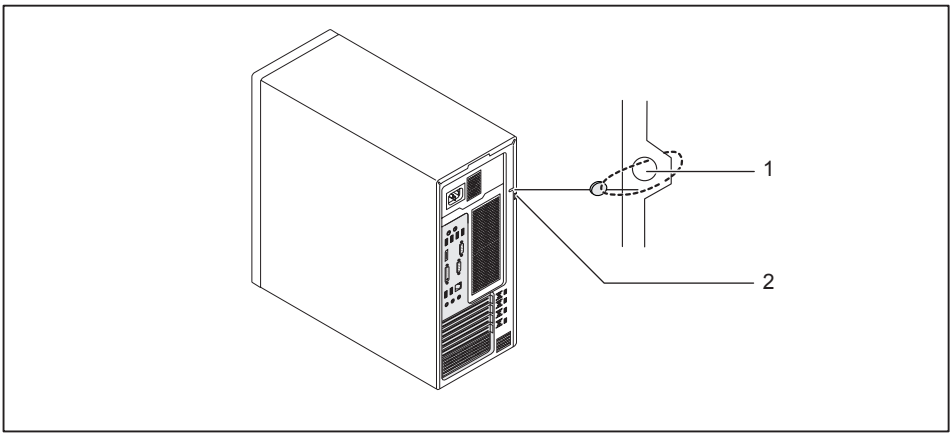
Settings in BIOS Setup

In *BIOS Setup*, you can set the system functions and the hardware configuration of the device. When the PC is delivered, the default entries are valid (see "BIOS Setup" manual or manual for the mainboard). You can customise these settings to your requirements in the *BIOS Setup*.

Property and data protection

Software functions and mechanical locking offer a broad range of functions for protecting your device and your personal data from unauthorised access. You can also combine these functions.

Anti-theft protection and lead-sealing



1 = Holes for padlock

2 = Device for Security Lock

Anti-theft protection

You can protect your device from theft

- with the Security Lock device (1) and with a Kensington MicroSaver. Consult the manual for your Security Lock.
- with the holes (2) and a padlock and chain which you have connected to a fixed object beforehand.

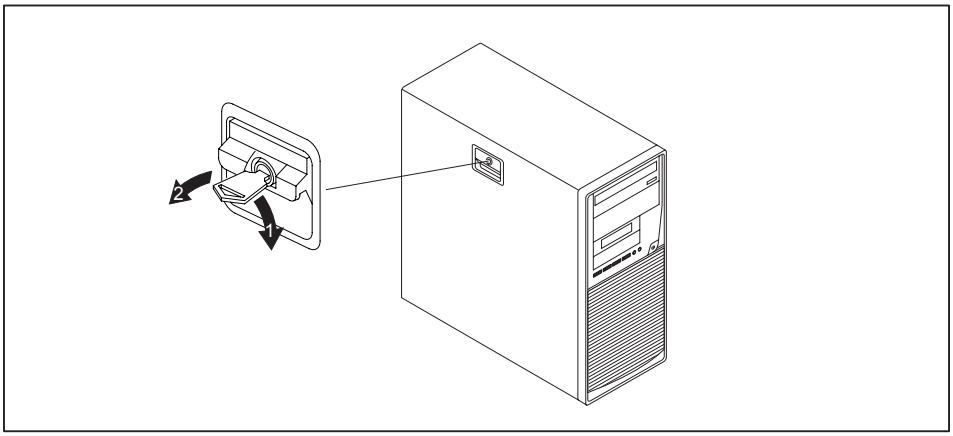
Lead-sealing

To prevent unauthorised persons from opening the casing, the casing can be lead-sealed. To do this, feed the sealing chain through the holes (2) and seal the chain with the lead seal.

Mechanical casing lock (optional)

With the casing lock you can mechanically lock the casing to prohibit unauthorised persons from opening it. The keys can be found on the rear panel of your device.

If you use a casing with a casing lock, the safety guard in front of the drives is also secured against unauthorised opening.



Locking the casing

► Turn the key in the direction of the arrow (1).

Unlocking the casing

► Turn the key in the direction of the arrow (2).

BIOS setup security functions

The *Security* menu in *BIOS Setup* offers you various options for protecting your personal data against unauthorized access, e.g.:

- Prevent unauthorized access to *BIOS Setup*
- Prevent unauthorised system access
- Prevent unauthorised access to the settings of boards with their own BIOS
- Activate virus warnings
- Protect BIOS from overwriting
- Protect the device from being switched on by an external device

You can also combine these functions.

You will find a detailed description of the *Security* menus and how to assign passwords in the manual for the mainboard or in the "BIOS Setup" manual.

Access authorisation via SmartCard

In systems equipped with a SmartCard reader, access can be restricted to those users who have a corresponding SmartCard.

Operating the SmartCard reader (optional)

Operation of this module is not permitted in Taiwan.

► Connect the external SmartCard reader to your system as described in the instructions for the SmartCard reader.

↳ After the device is switched on, you will be prompted to insert your SmartCard.

Troubleshooting and tips

Refer to the safety notes in the "Safety/regulations" manual and in the "Getting started", Page 13 chapter when connecting or disconnecting cables.

If a fault occurs, try to correct it as described in the following documentation:

- in this chapter
- in the documentation for the connected devices
- in the help systems of the software used
- in the documentation for your operating system

Help if problems occur

Should you encounter a problem with your computer that you cannot resolve yourself:

► Note the ID number of your device. The ID number is found on the type rating plate on the back, the underside or the top 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://support.ts.fujitsu.com/contact/servicedesk"). When you do this, please have ready the identity number and serial number of your system.

Troubleshooting

Power-on indicator remains unlit after you have switched on your device

Cause	Troubleshooting
The mains voltage supply is faulty.	► Check whether the power cable is plugged properly into the device and a grounded mains outlet.
Internal power supply overloaded.	► Pull the power plug of the device out of the mains outlet. ► Wait approx. 3 min. ► Plug the power plug into a properly grounded mains outlet again. ► Switch the device on.

The device cannot be switched off with the ON/OFF switch

Cause	Remedy
System crash	► Keep the on/off switch pressed for at least 4 seconds until the machine switches off. Caution: This can lead to a loss of data! This procedure does not allow the operating system to shut down in an orderly way. The next time the system is started there may well be error messages.

Monitor remains blank

Cause	Remedy
Monitor is switched off.	► Switch your monitor on.
Power saving has been activated (screen is blank)	► Press any key on the keyboard. **or** ► Deactivate the screen saver. If necessary, enter the appropriate password.
Brightness control is set to dark	► Adjust the brightness control. For detailed information, please refer to the operating manual supplied with your monitor.
Power cable not connected	► Switch off the monitor and the device. ► Check that the monitor power cable is properly connected to the monitor and to a grounded mains outlet or to the monitor socket of the device. ► Check that the device power cable is properly plugged into the device and a grounded mains outlet. ► Switch on the monitor and the device.
Monitor cable not connected	► Switch off the monitor and the device. ► Check that the monitor cable is properly connected to the device and monitor. ► Switch on the monitor and the device.
Incorrect setting for the monitor	► Restart the system. ► Press F8 while the system is booting. ► Start the system in Safe Mode. ► Set up the monitor as described in the documentation for your operating system and monitor.

No mouse pointer displayed on the screen

Cause	Remedy
The mouse is not correctly connected.	► Shut down the operating system properly. ► Switch the device off. ► Check that the mouse cable is properly connected to the system unit. If you use an adapter or extension lead with the mouse cable, check the connections. ► Switch the device on.
The mouse controller is not enabled.	► Check in the *BIOS-Setup* whether the mouse controller is *enabled*. ► Check that the mouse driver is properly installed and is present when the application programme is started. Detailed information can be found in the user guide for the mouse and application programme.

Time and/or date is not correct

Cause	Remedy
Time and date are incorrect.	► Set the correct time and date within the operating system you are using. **or** ► Set the correct time and/or date in the *BIOS Setup*.
The lithium battery is discharged.	► If the time and date are repeatedly wrong when you switch on your device, replace the lithium battery (see "Replacing the lithium battery", Page 56).

Error messages on the screen

Error messages and their explanations are provided:

- in the technical manual for the mainboard
- in the documentation for the programs used

Installing new software

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

Restoring the hard disk contents

You will find the instructions for restoring the contents of the hard disk in the "Recovery Guide" manual.

Tips

Topic	Tip
Lack of system resources	► Close unnecessary applications. **or** ► Run the applications in a different order.
Other manuals	Further manuals are provided as PDF files on the "Drivers & Utilities" DVD.

System expansions

Repairs to the device must only be performed by qualified technicians. Incorrect repairs may greatly endanger the user (electric shock, fire risk) and will invalidate your warranty.

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

As the device has to be shut down in order to install/deinstall system hardware components, it is a good idea to print out the relevant sections of this chapter beforehand.

The following illustrations may differ slightly from your device, depending on its configuration level.

If further documentation was delivered with your device, please also read this through carefully.

In addition, before removing or installing system components, please pay attention to the following:

The device must be switched off when installing/removing the system expansions and may not be in energy-saving mode.

Remove the power plug before opening the device.

Be careful that no wires become trapped when removing or installing components.

When installing components that become very hot, make sure that the maximum permissible temperature of the components in operation is not exceeded.

An update of the BIOS may be required for a system expansion or hardware upgrade. Further information can be found in the BIOS help section or if necessary in the Technical Manual for the mainboard.

Information about boards

Take care with the locking mechanisms (catches and centring pins) when you are replacing boards or components on boards.

Note that some components on the mainboard may be very hot if the device was in use shortly before the casing was removed.

To prevent damage to the board or the components and conductors on it, please take care when you insert or remove boards. Make sure expansion boards are inserted straightly.

Never use sharp objects (screwdrivers) for leverage.

Boards with electrostatic sensitive devices (ESD) are identifiable by 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.
- Only touch or hold the boards by the edge or, if present, at the areas marked green (Touch Points).
- Never touch pins or conductors on boards fitted with ESDs.

Opening the casing

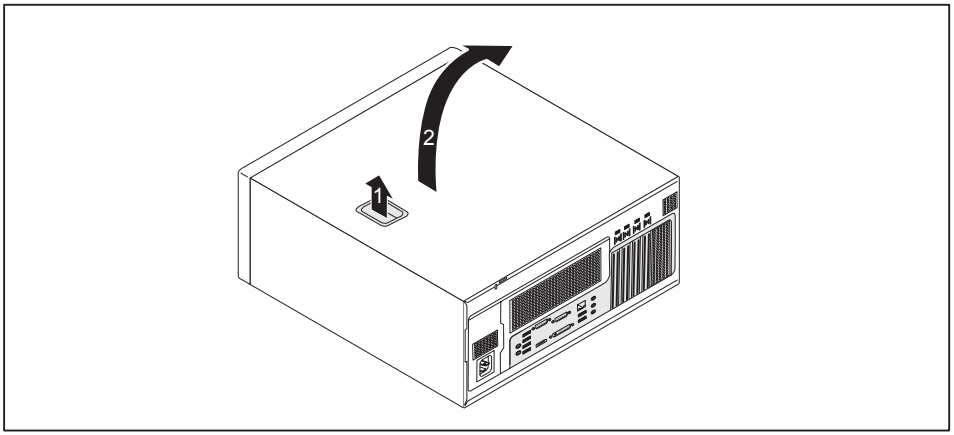
► Switch the device off. The device must not be in power-saving mode.

Please observe the safety information in "Important notes", Page 9.

Disconnect the mains plug from the mains outlet.

Only insert the power plug after you have closed the casing.

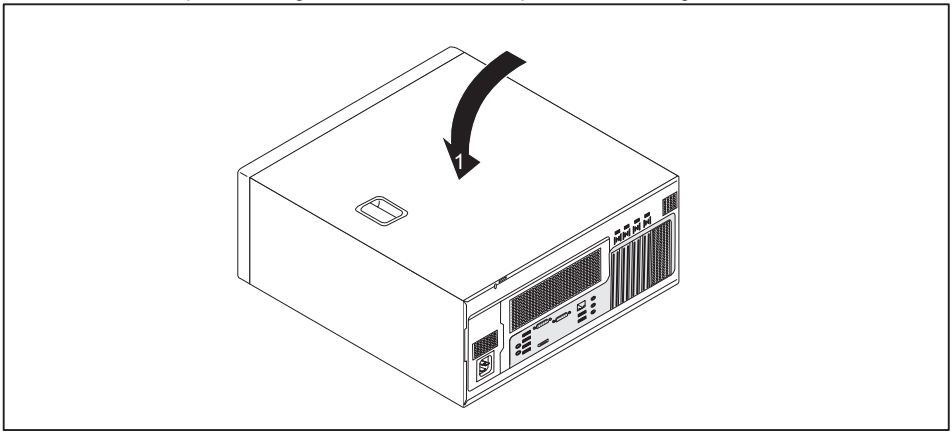
► Remove any connected wires which are in the way.
► On devices with a casing lock: Unlock the casing.
► Lay the device on its side in the manner shown.



► Pull the locking device (1) and swivel the side part in the direction of the arrow (2).

Closing the casing

► Insert the side part in the guide rail on the lower part of the casing.



► Swivel the side cover in the direction of the arrow (1) until it engages.
► On devices with a casing lock: Lock the casing.
► Reconnect the cables that you disconnected before.

Overview of drive bays and drives in your device

The casing can accommodate multiple accessible and non-accessible drives:

- two drive bays for accessible $5^1/_4$" drives
- two drive bays for accessible $3^1/_2$" drives
- Drive bays for multiple non-accessible $2^1/_2$" and $3^1/_2$" drives (hard disks):
  - two $3^1/_2$ inch drives (HDD)
  - one $2^1/_2$ inch drive (HDD)

In addition, the power version offers drive bays for two non-accessible $3^1/_2$ inch drives (HDD).

"Accessible drives" are e.g. DVD or CD ROM drives, into which a data medium can be inserted from outside. "Non-accessible drives" are for example hard disk drives.

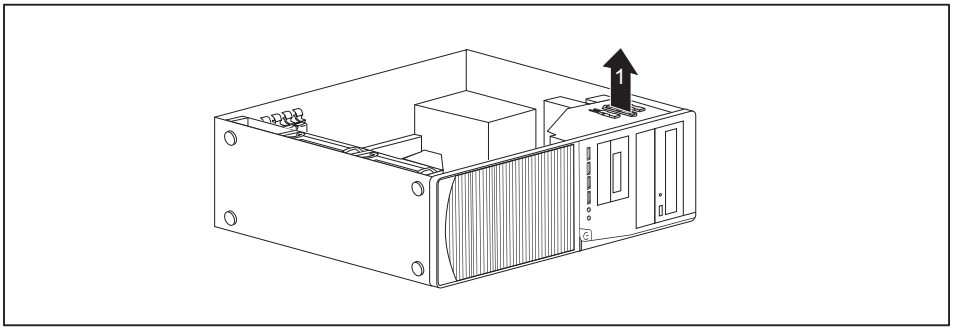
Installing and removing the accessible 5 1/4 inch drive

The following chapter illustrates the standard version and not the power version. However, the procedure in the following chapters is the same for both versions.

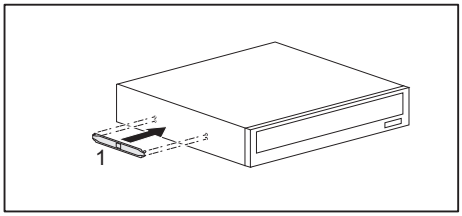
Fitting the drive cover for the 5 1/4 inch drive

To use the latch function of the accessible 5 1/4 inch drive, you must fit the corresponding drive cover before installing the drive in the casing. Proceed as follows:

► Open the casing (see "Opening the casing", Page 36).



► Remove the drive cover from the bracket in the direction of the arrow (1).



► Connect the drive cover to the drive (1).

Installing an accessible drive

► Open the casing (see "Opening the casing", Page 36).

► If you are installing the drive in the upper bay and a cover (optional) is already in place, please remove it.

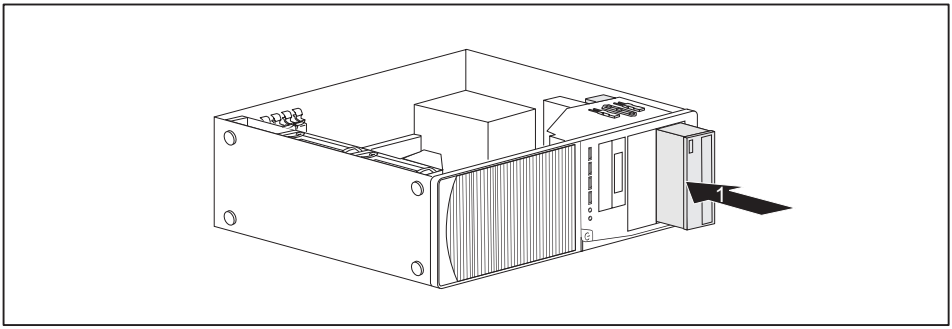
or

► If you are installing the drive in the lower bay and a cover (optional) is already in place, please remove it.

► Break out the pre-stamped metal cover on the drive bay.

► Fit the drive cover for the 5 1/4 inch drive (see "Fitting the drive cover for the 5 1/4 inch drive", Page 38).

Do not throw away the cover. For cooling and protection against fire you must refit the cover if you remove the drive again later (see "Removing an accessible drive", Page 40).



► Slide the accessible drive into the casing until it snaps in place (1).

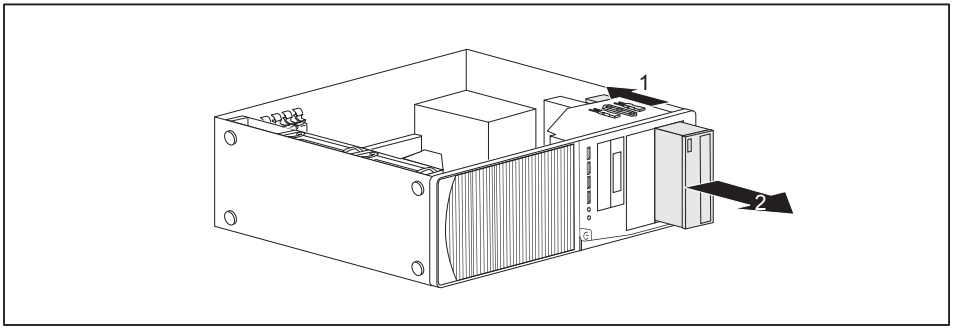
► Connect the cables to the drive. Make sure the polarity is correct.

► Close the casing (see "Closing the casing", Page 37).

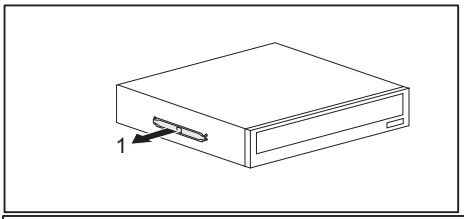
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Removing an accessible drive

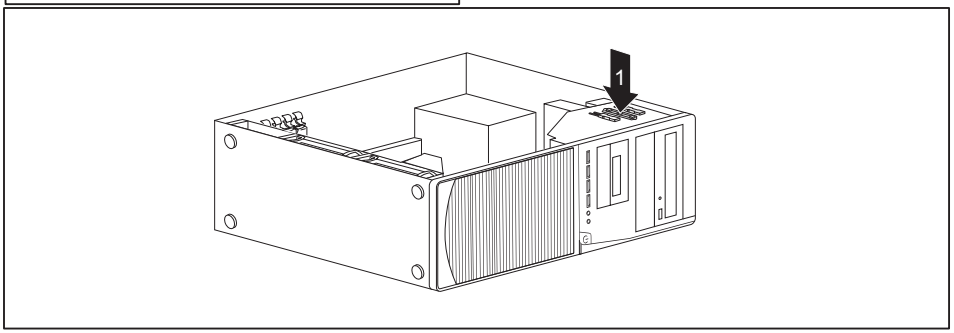
► Open the casing (see "Opening the casing", Page 36).



► Disconnect the cables connected to the drive.
► Slide the clip in the direction of the arrow (1).
► Pull the drive out of the casing in the direction of the arrow (2).



► Remove the drive cover from the drive (1).



► Place the drive cover on the holder in the direction of the arrow (1).
► If necessary, make the required settings on the remaining hard disk drives.
► If you are not installing a new drive, reinstall the previously removed cover (optional) for the purposes of cooling, fire protection and to prevent foreign objects from getting into the casing.
► Close the casing (see "Closing the casing", Page 37).

It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Installing/removing the SmartCard reader and/or WLAN module (optional, 3½-Zoll)

You can also install a SmartCard reader and/or a WLAN module for wireless LAN (Local Area Network) or a memory card reader in the drive bays for 3½ inch drives (see "Removing and installing the memory card reader (optional, 3½ inch, MultiCard)", Page 46).

The SmartCard reader and WLAN module can be installed together in one module holder (optional). If you have ordered a device with a WLAN module and SmartCard reader, the module holder, SmartCard reader and WLAN module will already be installed at the time of delivery.

However, you can only install one of the two boards. The WLAN module is installed in the lower slot of the carrier and the SmartCard reader in the upper slot of the carrier. If you want to install the SmartCard reader and the WLAN module together, first install the WLAN module. Removal is performed in the reverse order.

If you have ordered a device without a WLAN module or SmartCard reader, a blind cover is installed instead of the module holder.

Installing/removing a 3½" reader in a 3½" bay (optional, SmartCard or MultiCard)

The following chapter illustrates the standard version and not the power version. However, the procedure in the following chapters is the same for both versions.

Operation of the module is not permitted in Taiwan.

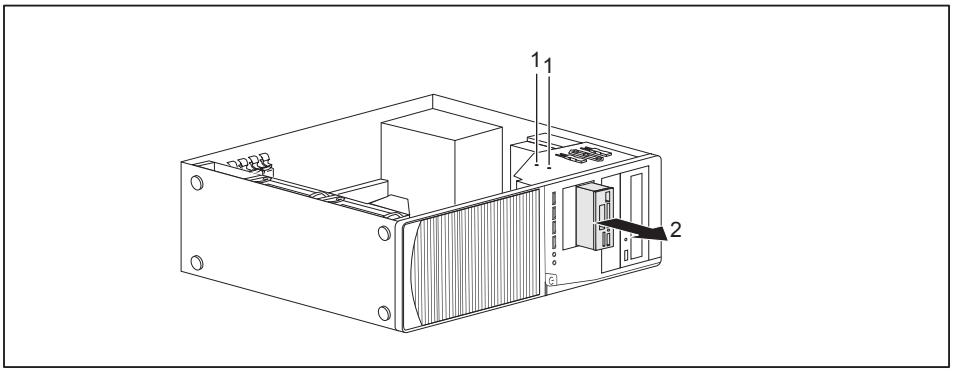
You can for instance install a SmartCard or MultiCard reader in the 3½" drive bay. The reader is mounted onto a module holder when installed in the casing.

SmartCard or MultiCard readers can be mounted on a module holder (optional). If you have ordered a device with a SmartCard or MultiCard reader, the module holder, SmartCard or MultiCard reader are already built in on delivery.

If you have ordered a device without a SmartCard or MultiCard reader, a blind cover is installed instead of the module holder.

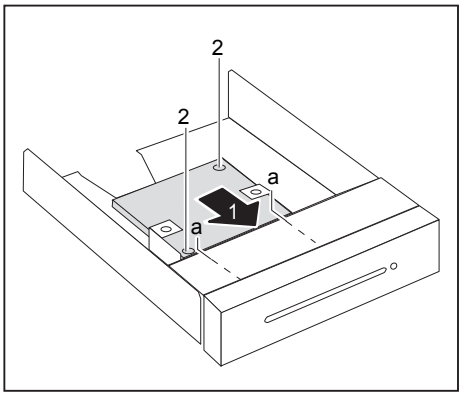
Removing the module holder

► Open the casing (see "Opening the casing", Page 36).
► Disconnect the cables connected to the module holder.



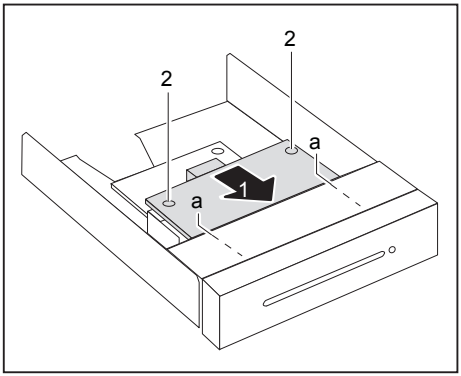
► Remove the screws (1) on the module holder.
► Push the module holder out of the casing in the direction of the arrow (2).

Screwing the WLAN module onto the module holder



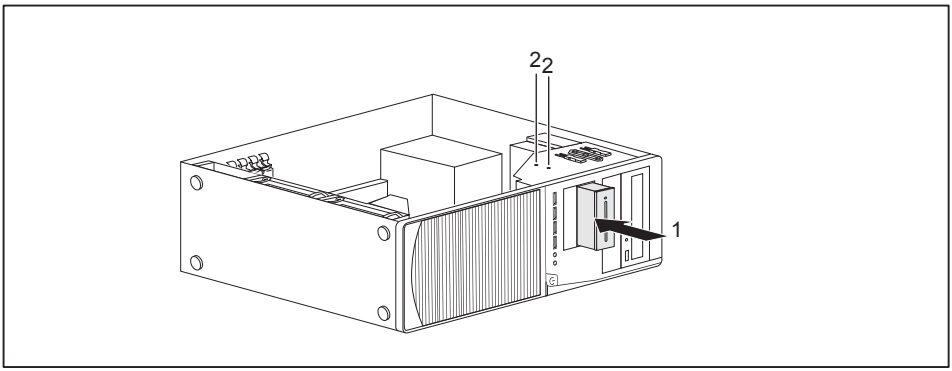
► Push the WLAN module - with the component side facing downwards - in the direction of the arrow (1) into the guide on the module holder (a).
► Fasten the WLAN module with the screws (2).

Screwing the SmartCard reader onto the module holder



- ► Push the SmartCard reader - with the component side facing downwards - into the guide on the module holder (a) in the direction of the arrow (1).
- ► Secure the SmartCard reader with the screws (2).

Installing the module holder with SmartCard reader and/or WLAN module

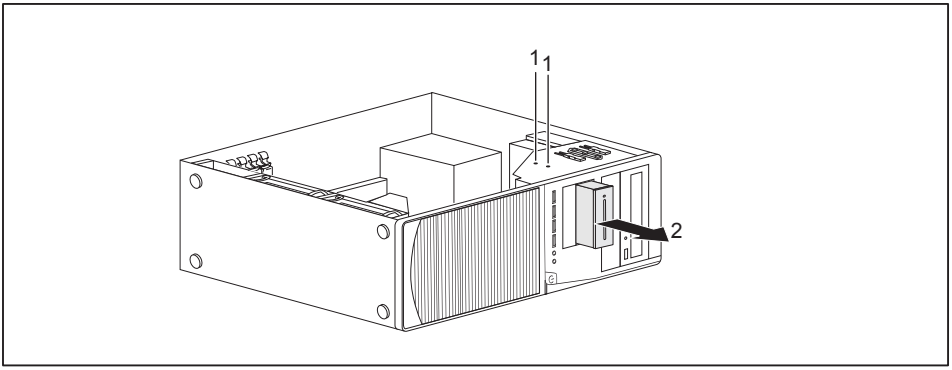


- ► Push the module holder into the casing in the direction of the arrow (1).
- ► Fasten the module holder with the screws (2).
- ► Connect the cables to the boards and the mainboard. Make sure the polarity is correct.
- ► Close the casing (see "Closing the casing", Page 37).

Removing the module holder with SmartCard reader and/or WLAN module

► Open the casing (see "Opening the casing", Page 36).

► Disconnect the cables connected to the module holder.



► Remove the screws (1).

► Push the module holder out of the casing in the direction of the arrow (2).

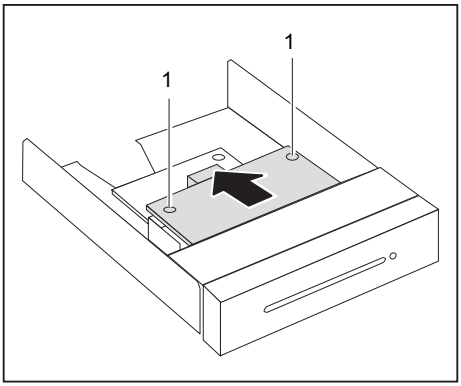
► Remove the SmartCard reader and WLAN module from the module holder (see "Removing the SmartCard reader from the module holder", Page 45 and "Removing the WLAN module from the module holder", Page 45) and install the module holder again (corresponds to "Installing the module holder with SmartCard reader and/or WLAN module", Page 43).

or

► Remove the SmartCard reader and WLAN module from the module holder (see "Removing the SmartCard reader from the module holder", Page 45 and "Removing the WLAN module from the module holder", Page 45) and install a blind cover in the drive bay.

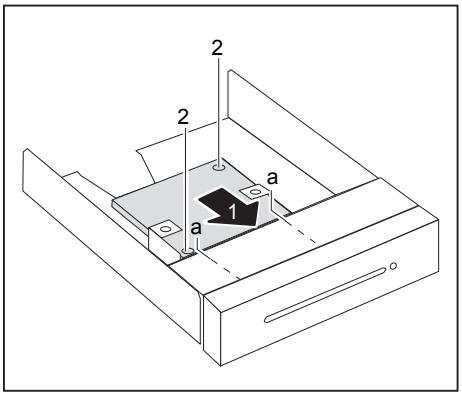
► Close the casing (see "Closing the casing", Page 37).

Removing the SmartCard reader from the module holder



- ► Undo the screws (1).
- ► Pull the SmartCard reader out of the module holder in the direction of the arrow (2).

Removing the WLAN module from the module holder



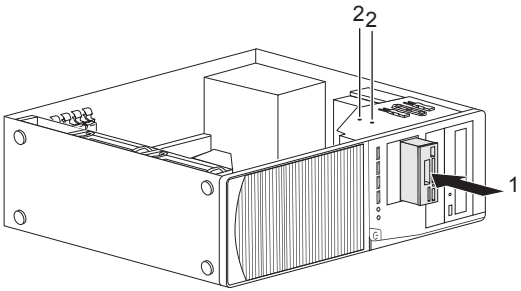
- ► Undo the screws (1).
- ► Pull the WLAN module out of the module holder in the direction of the arrow.

Removing and installing the memory card reader (optional, 3½ inch, MultiCard)

You can also install a memory card reader or a SmartCard reader and/or a WLAN module for wireless LAN (Local Area Network) in the drive bay for 3½ inch drives (see "Installing/removing the SmartCard reader and/or WLAN module (optional, 3½-Zoll)", Page 41).

The memory card reader can, unlike the SmartCard reader and WLAN module, be installed directly in the device without a module holder.

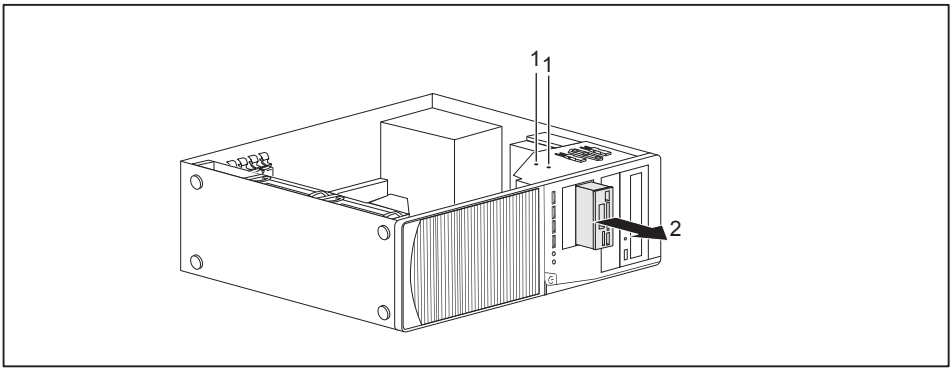
Installing the memory card reader



- ► Push the memory card reader into the casing in the direction of the arrow (1).
- ► Fasten the memory card reader with the screws (2).
- ► Connect the cables to the memory card reader and to the mainboard. Make sure the polarity is correct.
- ► Close the casing (see "Closing the casing", Page 37).

Removing the memory card reader

► Open the casing (see "Opening the casing", Page 36).
► Disconnect the cables connected to the memory card reader.

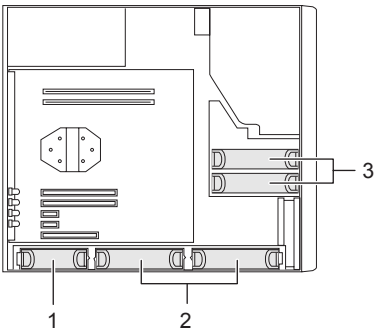


► Remove the screws (1).
► Slide the memory card reader out of the casing in the direction of the arrow (2).
► Install a blind cover in the drive bay.
► Close the casing (see "Closing the casing", Page 37).

Installing and removing the hard disk drive

The following description applies both to $3^1/_2$ inch drives and to $2^1/_2$ inch drives. The installation and removal procedure is the same for both types.

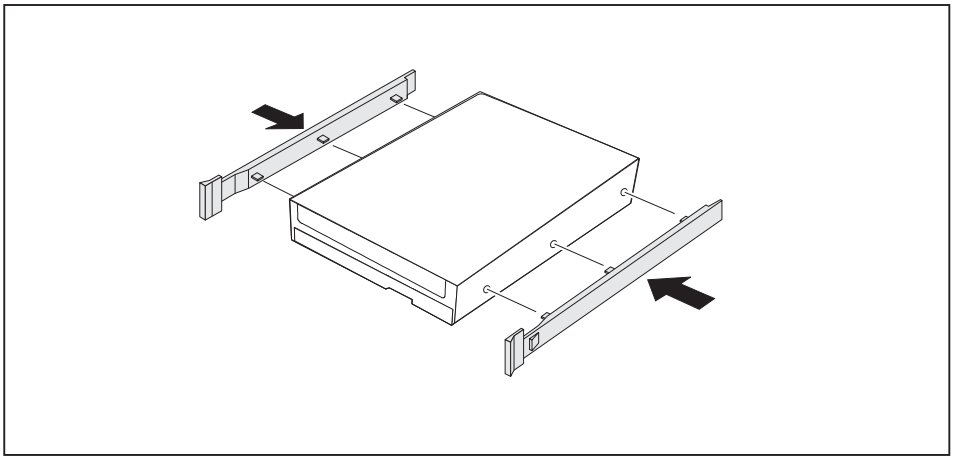
You can find EasyChange rails for a second $3^1/_2$ inch hard disk drive on the drive cage. EasyChange rails for a second $2^1/_2$ inch hard disk drive are provided together with the drive.



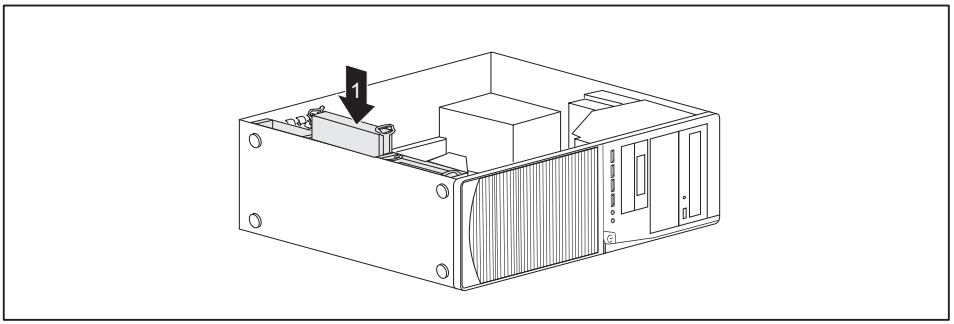
1 = $2^1/_2$ inch hard disk
2 = $3^1/_2$ inch hard disks
3 = $3^1/_2$ inch hard disks (only in power version))

Installing a hard disk drive

► Open the casing (see "Opening the casing", Page 36).



► Secure the EasyChange rails to the side of the hard disk drive by inserting the upper pins of the EasyChange rail in the corresponding holes of the hard disk.



► Slide the hard disk drive with the EasyChange rails into the drive cage in the direction of the arrow (1). Check that the component side of the hard disk drive faces inwards towards the casing floor.

► Connect the cables to the hard disk drive.

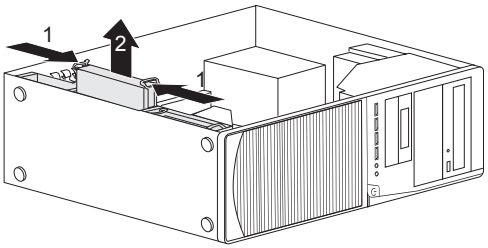
► Close the casing (see "Closing the casing", Page 37).

i

It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Removing the hard disk drive

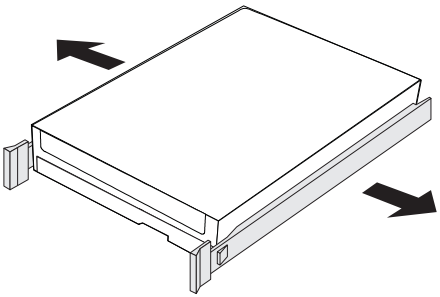
► Open the casing (see "Opening the casing", Page 36).



► Slightly press together the EasyChange rails mounted on the hard disk drive (1) and carefully pull the hard disk drive slightly out of the drive cage in the direction of the arrow (2).

► Disconnect the cables connected to the hard disk drive.

► Slightly press together the EasyChange rails mounted on the hard disk drive (1) and pull the hard disk drive completely out of the drive cage in the direction of the arrow (2).



► Pull the EasyChange rails off the hard disk drive.

► If you no longer need the EasyChange rails, secure them again at their location in the drive cage.

It may be necessary to modify the entry for the drive in the *BIOS Setup*.

Installing and removing a board

You can install additional modules in order to increase the performance of your machine.

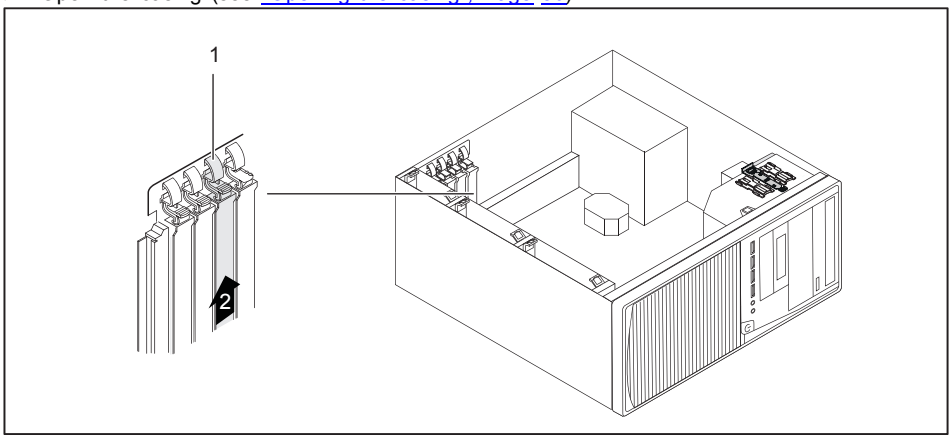
The number, position and arrangement of the board slots on the mainboard can be found in the manual for the mainboard. Boards may already be installed on shipment.

The following chapter illustrates the standard version and not the power version. However, the procedure in the following chapters is the same for both versions.

Installing a board

If possible, always install display adapters in the second slot from the right.

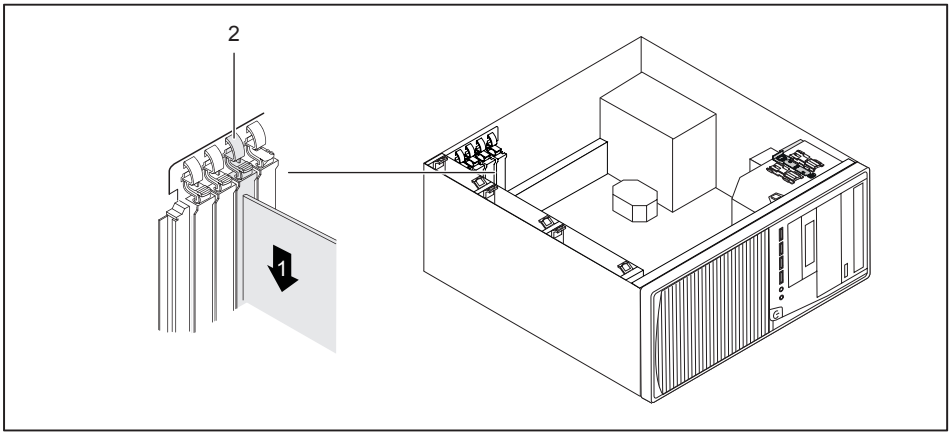
► Open the casing (see "Opening the casing", Page 36).



► Push the retaining clip (1) towards the slot cover to unlock it, then move it towards the back panel of the device.

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

Do not throw away the slot cover. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the slot cover if you remove the board.

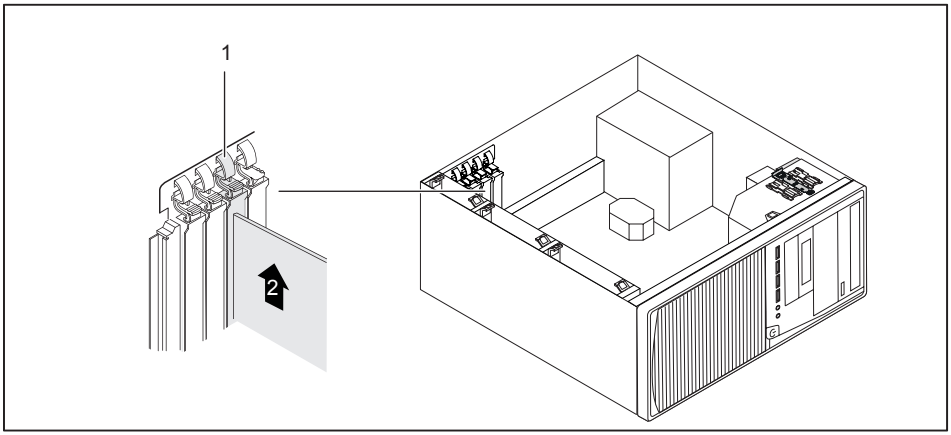


- ► Push the board into the slot (1).
- ► Swivel the retaining clamp back again until you feel it click into place (2).
- ► Connect the cables to the board.
- ► For display adapters with an additional power connection (< 65 W): attach the display adapter power cable to the power supply.
- ► Close the casing (see "Closing the casing", Page 37).

If you have installed or removed a board, please check the relevant slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the board documentation.

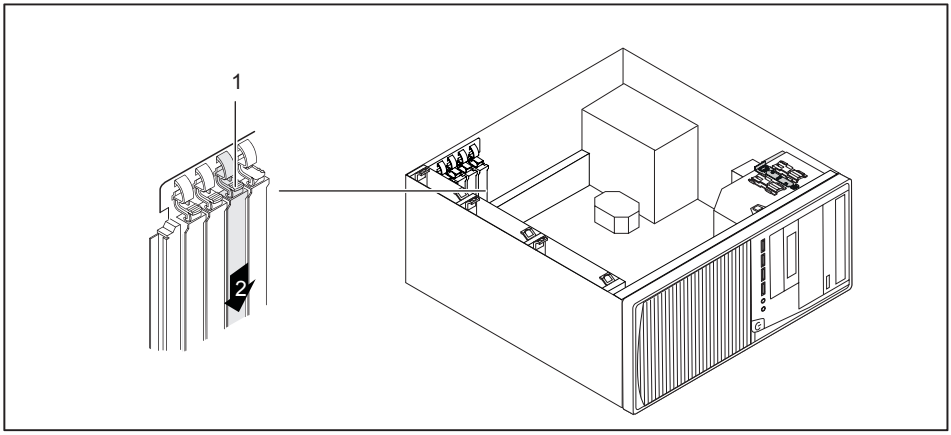
Removing a board

- ► Open the casing (see "Opening the casing", Page 36).
- ► Disconnect the cables connected to the board.



- ► Push the retaining clip (1) towards the slot cover to unlock it, then move it towards back panel of the device.
- ► Pull the board out of the slot in the direction of the arrow (2).
- ► Place the board in suitable packaging.

For cooling, protection against fire, and in order to comply with EMC (electromagnetic compatibility) regulations, you must refit the slot cover.



- ► Slide the slot cover into the slot (1).

► Press on the retaining clip until it you feel it engage (2).
► Close the casing (see "Closing the casing", Page 37).

If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

Replacing the processor

► Open the casing (see "Opening the casing", Page 36).
► Remove the heat sink (see "Removing the heat sink", Page 54).
► Replace the processor as described in the manual for the mainboard.
► Install the heat sink again (see "Installing the heat sink", Page 54).
► Close the casing (see "Closing the casing", Page 37).

Installing and removing processor cooling devices

Removing the heat sink

The shape and position of the heat sink are device-dependent.

► Open the casing (see "Opening the casing", Page 36).
► Undo the screws on the heat sink.
► Lift the heat sink out of the casing.
↳ You can now replace the processor.

Installing the heat sink

► Open the casing (see "Opening the casing", Page 36).
► Reinstall the heat sink so that the air flow is fed towards the back of the casing (see arrow on the heat sink).
► Tighten the screws.

Never attach or detach fans during operation. This can cause problems controlling the mainboard fan.

Mainboard expansions

Details on how to upgrade the main memory or the processor of your device can be found in the manual for the mainboard.

Upgrading main memory

- ► Open the casing (see "Opening the casing", Page 36).
- ► Upgrade the main memory according to the description in the manual for the mainboard.
- ► Close the casing (see "Closing the casing", Page 37).

Replacing the lithium battery

In order to permanently save the system information, a lithium battery is installed to provide the CMOS-memory with a current. A corresponding error message notifies the user when the charge is too low or the battery is empty. The lithium battery must then be replaced.

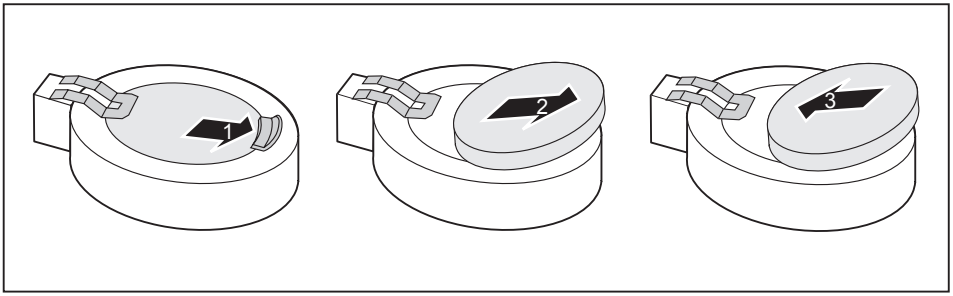
Incorrect replacement of the lithium battery may lead to a risk of explosion!

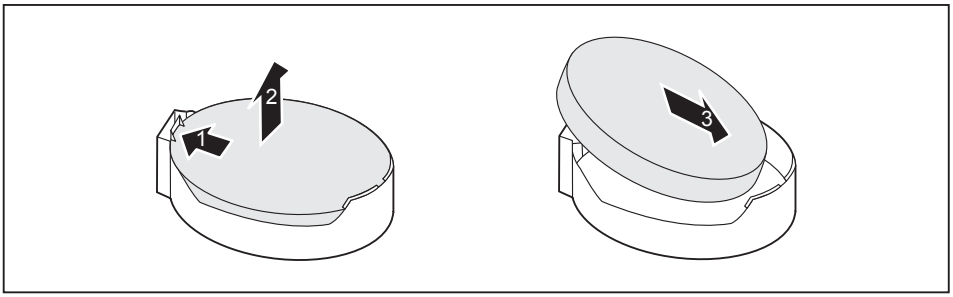
The lithium battery may be replaced only with an identical battery or with a type recommended by the manufacturer.

Do not dispose of lithium batteries with household waste. They must be disposed of in accordance with local regulations concerning special waste.

Make sure that you observe the correct polarity when replacing the lithium battery. The plus pole must be on the top!

The lithium battery holder exists in different designs that function in the same way.





► Press the catch in the direction of the arrow (1).

↳ The battery jumps out of the holder slightly.

► Remove the battery (2).

► Push the new lithium battery of the identical type into the holder (3) and press it down until it engages.

Technical data

Electrical data	
Safety standards complied with:	IEC 60950-1, EN 60950-1, UL 60950 CSA 22.2 No.60950-1
Protection class:	I
Rated voltage range	100 V – 240 V
Rated frequency	50 Hz – 60 Hz
Max. rated current	3.5 A - 1.5 A
Dimensions	
Width x Depth x Height:	175 mm x 419 mm x 395 mm / 6.89 inch x 16.5 inch x 15.55 inch
Weight	
in basic configuration:	ca. 11 kg / 24.25 lbs
Ambient conditions	
Environment class 3K2	DIN IEC 721 part 3-3
Environment class 2K2	DIN IEC 721 part 3-2
Temperature	
Operation (3K2)	10 °C .... 35 °C / 50 °F ... 95 °F
Transportation (2K2)	–25 °C .... 60 °C / –13 °F ... 140 °F
The formation of condensation is not permitted while the device is in operation !	
Clearance required to ensure adequate ventilation:	
without air vents	min. 10 mm / 0.39 inch
with air vents	min. 200 mm / 7.87 inch

The data sheets of these devices contains further technical data. The data sheets can be found on our website at "http://www.fujitsu.com/fts/".

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