

# ESPRIMO C7xx

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# **ESPRIMO C7xx**

## **Operating Manual**

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# Your ESPRIMO

... is available with various configuration levels which differ in terms of hardware and software equipment. You can install additional drives (for example a DVD drive) and other boards.

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 provided:







- in the poster "Getting Started"
- in the "Safety/regulations" manual
- in the "Warranty" manual
- in the operating manual for the monitor
- in the manual for the mainboard
- in your operating system documentation
- 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. You can of course also print out a copy of the manual if you prefer.

## 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
<b>This font</b>	indicates data entered using the keyboard in a program dialogue or at the command line, e.g. your password ( <b>Name123</b> ) or a command used to start a program ( <b>start.exe</b> )
This font	indicates information that is displayed on the screen by a program, e.g.: Installation is complete.
<i>This font</i>	indicates <ul style="list-style-type: none"> <li>terms and texts used in a software interface, e.g.: Click on <i>Save</i></li> <li>names of programs or files, e.g. <i>Windows</i> or <i>setup.exe</i>.</li> </ul>
"This font"	indicates <ul style="list-style-type: none"> <li>cross-references to another section, e.g. "Safety information"</li> <li>cross-references to an external source, e.g. a web address: For more information, go to <a href="http://ts.fujitsu.com">"http://ts.fujitsu.com"</a></li> <li>Names of CDs, DVDs and titles or designations for other materials, e.g.: "CD/DVD Drivers &amp; Utilities" or "Safety/Regulations" manual</li> </ul>
	indicates a key on the keyboard, e.g: 
<b>This font</b>	indicates terms and texts that are emphasised or highlighted, e.g.: <b>Do not switch off the device</b>

# 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 53](#) as well as the instructions in Chapter ["Getting started", Page 10](#).

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.

The main switch (if present) and the ON/OFF switch do not disconnect the device from the mains voltage. To completely disconnect from the mains voltage, remove the power plug from the power socket.

Replace the lithium battery on the mainboard in accordance with the instructions in ["Replacing the lithium battery", Page 52](#).

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. Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site.

## 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

Further information can be found on the "Drivers & Utilities" DVD.

## CE marking



The shipped version of this device complies with the requirements of EEC directives 2004/108/EC "Electromagnetic compatibility" and 2006/95/EC "Low voltage directive".



### 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	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

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 Technology Solutions GmbH 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 Technology Solutions GmbH. 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 7](#) 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
- Connecting external devices
- 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 32](#) 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, troublesome vibrations and noises may occur. To prevent this, a distance of at least 10 mm 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 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 53](#), section "Ambient conditions"). Protect the device against dust, humidity and heat.

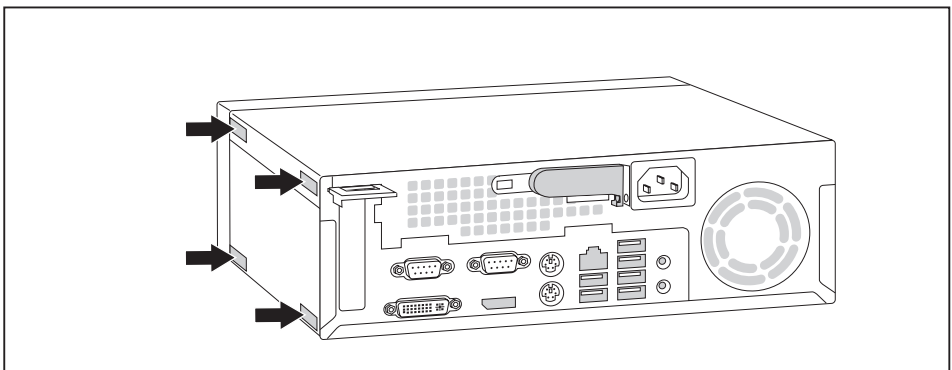
### Operating position

You can use the device in a vertical or horizontal operating position.

### Vertical operating position (optional)

Proceed as follows to operate the device in the vertical operating position:

- ▶ Disconnect the cables if required.
- ▶ Pull off the foil from the rubber/plastic feet included in the pack of accessories.
- ▶ Stick the rubber/plastic feet to the underside of the casing. In order to ensure a that the unit is stable, the rubber/plastic feet should be located in approximately the positions shown in the illustration.



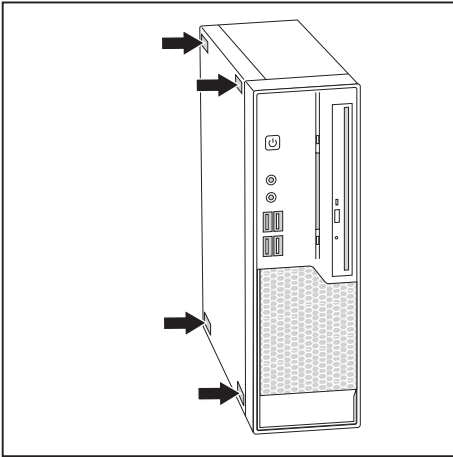
- ▶ Place the device vertically on the rubber/plastic feet.
- ▶ If necessary, reconnect any cables that were previously disconnected.

## Horizontal operating position with rubber/plastic feet



The horizontal operating position is only permitted with the rubber/plastic feet (due to the heat generated on the underside).

- ▶ If necessary, disconnect the cables.
- ▶ Place the device on its upper side on a sturdy, flat and clean surface.

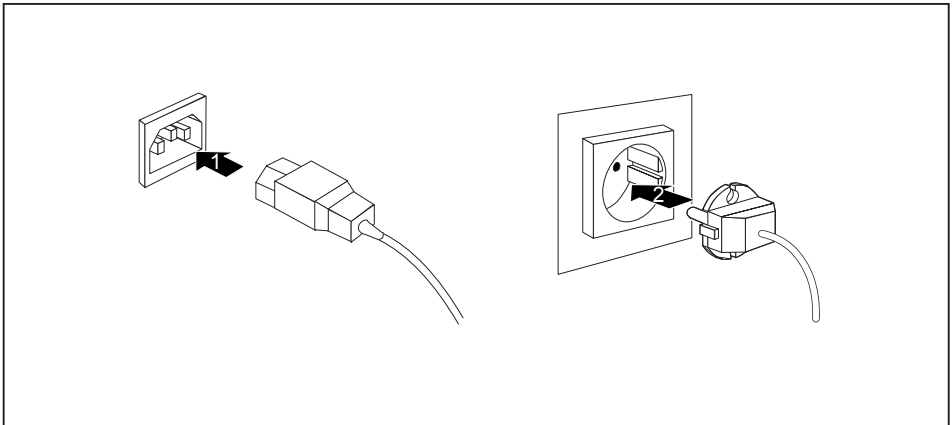


- ▶ Stick the rubber/plastic feet (1) to the underside of the casing.
- ▶ To ensure a that the device is stable, the rubber/plastic feet should be fixed in similar positions to the ones shown in the illustration.
- ▶ Place the device on the rubber/plastic feet.
- ▶ If necessary, reconnect any cables that were previously disconnected.



## Connecting the device to the mains voltage

- ▶ Check the voltage setting.



- ▶ Connect the power cable to the device.
- ▶ Plug the power plug into a properly grounded mains outlet.

**i**

The device is fitted with a wide voltage range power supply. This means you do not need to set the nominal voltage manually for these devices. Therefore there is no switch available for the voltage setting.

## 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. Never unplug a cable by pulling the cable itself.

Connect and disconnect the cables in the order described below.

## Connecting the cables

- ▶ Turn off all power and equipment switches.
- ▶ Remove all power plugs from the grounded mains outlets.
- ▶ Connect all the cables to the device and the external devices. Please make sure that you always observe the safety notes provided in ["Important notes", Page 7](#).
- ▶ Plug all data communication cables into the appropriate sockets.
- ▶ 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 17](#) and in the documentation for the USB devices.

## Disconnecting the cables

- ▶ Switch off all affected devices.
- ▶ Remove all power plugs from the grounded mains outlets.
- ▶ Unplug all data communication cables from the appropriate sockets.
- ▶ Disconnect all of the cables from the device and from the external devices.

## Ports on the device

The ports are located on the front and back of the device. The ports available on your device depend on the configuration level you have selected. 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, purple		Parallel port/printer (optional)
	Serial port 1, turquoise		Serial port 2, turquoise
	VGA monitor connection, blue		Microphone jack, pink
	Headphones jack, light green		Audio input (Line in), light blue
	Audio output (Line out), light green		PS/2 mouse port, green
	USB - Universal Serial Bus, black		LAN port
	DVI-I monitor port		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

- ▶ Follow the instructions contained in the monitor manual to prepare the monitor for use (e.g. connect the cables).
- ▶ Plug the data cable into the monitor port on the device.



Depending on the configuration level of your device and your monitor, you can connect the data cable either to the DVI interface or to the DisplayPort.

- ▶ Plug the monitor power cable into a grounded mains outlet.

### 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. However, if the external USB device requires its own software, please install it from the data carrier provided with the USB device.

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.

## 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.

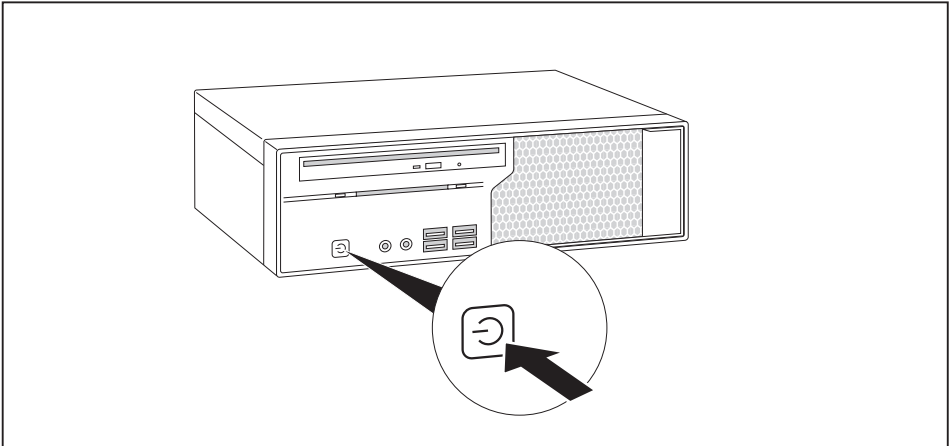
You may need the licence number for Windows during the installation. The licence number is located on a sticker on your device.

## Switch on the monitor and the machine



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

- ▶ Switch on the monitor (see operating instructions for the monitor).



- ▶ Press the on/off button on the front of the machine.
- ↳ The operational display will light up and the machine will start.

## 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 under ["http://ts.fujitsu.com/support/"](http://ts.fujitsu.com/support/).

# Operation

## 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 glows and the device is started.

## Switching off the device

- ▶ Shut down the operating system properly.
- ▶ If the operating system does not automatically switch the device into power-saving mode or switch it off, press the ON/OFF switch for at least 4 seconds.
- ↳ The device then consumes a minimum amount of energy.



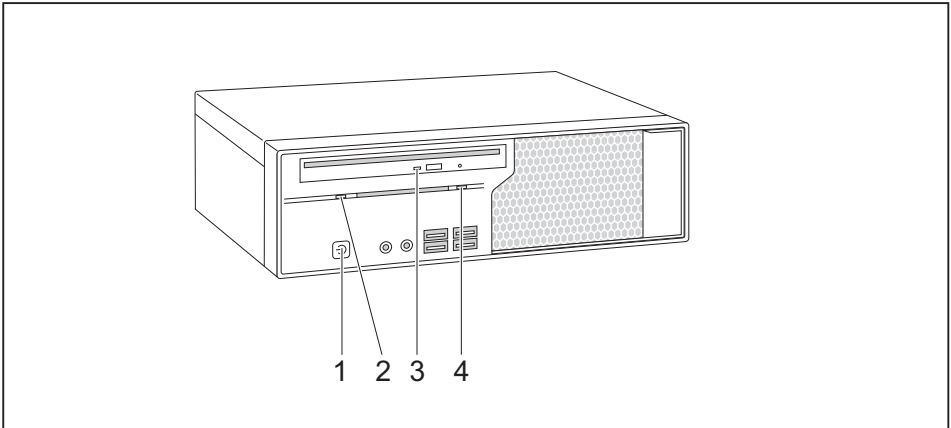
The ON/OFF switch does not fully disconnect the TV from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the power socket.

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



## Indicators on the device

The indicators are located on the front of the casing. Which indicators are available on your device depends on the configuration level you have selected.

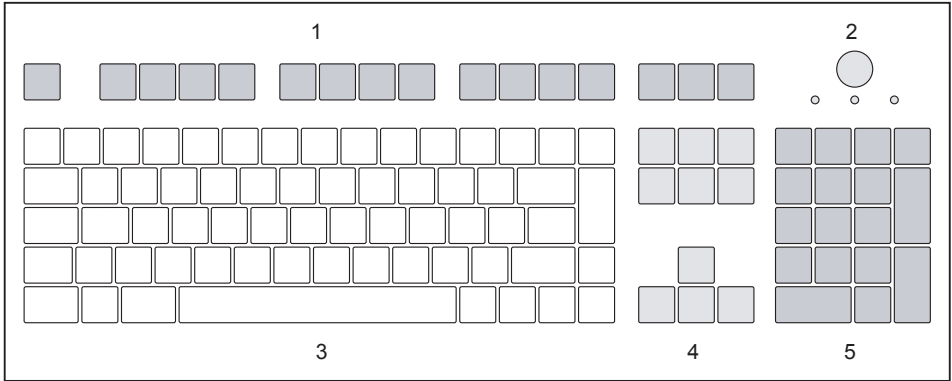


No.	Indicator	Description
1	Power indicator	<p><b>Caution:</b> When energy saving mode is active, the device must not be switched off at the main power switch (if present) or disconnected from the mains, as this may result in data loss.</p> <ul style="list-style-type: none"> <li>The indicator is lit green: The device is on.</li> <li>The indicator flashes green: The system is in power-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.</li> <li>The indicator is not lit: The device is disconnected from the mains supply or is ready for operation. If the device is ready it can be switched on with the ON/OFF switch.</li> </ul>
2	Hard disk indicator	The indicator lights up when the hard disk drive of the device is accessed.
3	Drive indicator	The indicator lights up when the DVD drive in the device is being accessed. Never remove the DVD while the indicator is illuminated.
4	SmartCard reader indicator (optional)	<p>The indicator is lit if a SmartCard reader is installed.</p> <p>The indicator flashes when data is being exchanged.</p>

## 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
	<p><b>On/off switch (optional)</b></p> <p>Depending on the setting in the <i>BIOS Setup</i>, 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.</p> <p>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.</p>
	<p><b>Enter key</b></p> <p>confirms the highlighted selection. The Enter key is also referred to as the "Return" key.</p>
	<p><b>Start key</b></p> <p>calls up the Windows <i>Start</i> menu.</p>
	<p><b>Menu key</b></p> <p>calls up the menu for the marked item (Windows).</p>
	<p><b>Shift key</b></p> <p>enables upper-case letters and the upper key symbols to be displayed.</p>
	<p><b>Alt Gr key</b></p> <p>produces a character shown on the bottom right of a key (e.g. the @ sign on the [Q] key).</p>
	<p><b>Num Lock key</b></p> <p>By pressing the Num Lock key you switch between the upper- and lower-case levels of the calculator keypad.</p> <p>When the Num Lock indicator is lit the numeric keypad and arithmetic keys are active.</p> <p>When the Num Lock indicator is not lit the cursor control functions on the Numeric keypad are active.</p>
	<p><b>Ctrl key</b></p> <p>performs a special operation when pressed in conjunction with another key. The [Ctrl] key is also called the "Control" or "Control key".</p>
	<p><b>Windows security/Task-Manager</b></p> <p>This key combination opens the Windows Security/Task Manager window.</p>

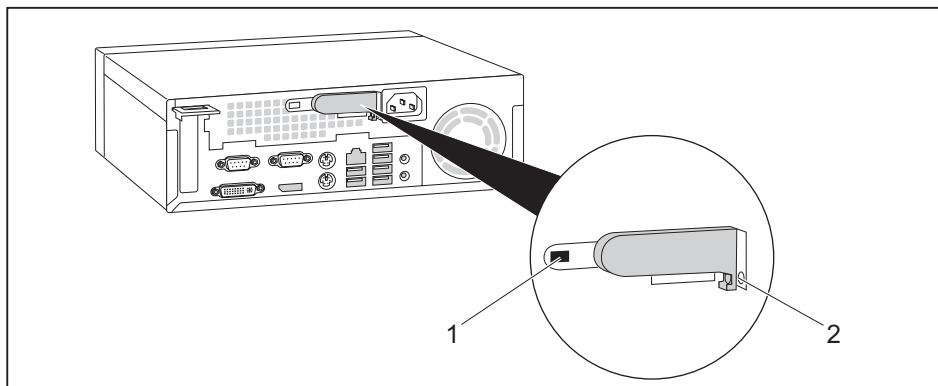
## Settings in BIOS Setup

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



1 = Kensington Lock

2 = Holes for padlock

You can protect your device against theft

- with the Kensington Lock device (1) and a Kensington MicroSaver. You can only attach the Kensington Lock if the sliding locking mechanism is set to the left, thereby locking the casing. Please consult the manual for your Kensington Lock.
- with the holes (2), a padlock and a chain, which you have connected to a fixed object beforehand.

### BIOS setup security functions

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

- Preventing unauthorised access to *BIOS Setup*
- Preventing unauthorised system access
- Preventing unauthorised access to the settings of boards with their own BIOS
- Issuing virus warnings
- Protecting BIOS from overwriting
- Protecting 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 authorization via SmartCard (optional)**

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

# Troubleshooting and tips



Refer to the safety notes in the "Safety/regulations" manual and in the ["Getting started", Page 10](#) 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

If you should have any problems with your computer, which you are not able to solve on your own:

- ▶ Make a note of the identification number of your device. You can find the identification number on the type rating plate on the rear side or underside of the housing.
- ▶ Contact the service desk responsible for your country (see service desk list or the Internet at ["http://ts.fujitsu.com/support/service desk.html"](http://ts.fujitsu.com/support/service desk.html) for clarification of the problem. Please have to hand the identification/serial number of your system.

## Troubleshooting

### Power-on indicator does not light up after the device is switched on

Cause	Corrective measure
The mains power supply is faulty.	<ul style="list-style-type: none"> <li>▶ Check whether the power cable is properly plugged into the device and into a grounded mains outlet.</li> <li>▶ Switch the device on.</li> </ul>
Internal power supply overloaded.	<ul style="list-style-type: none"> <li>▶ Pull the power plug for the device out of the grounded mains outlet.</li> <li>▶ Wait for a moment.</li> <li>▶ Plug the power plug back into a grounded mains outlet.</li> <li>▶ Switch the device on.</li> </ul>

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

Cause	Remedy
The device has not been switched on with the ON/OFF switch.	▶ Press the ON/OFF switch again.
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.



Cause	Remedy
Wrong monitor has been set under Window XP	<ul style="list-style-type: none"> <li>▶ Restart the device.</li> <li>▶ Press <b>[F8]</b> while the system is booting.</li> </ul> <p>Either the <i>Windows Advanced Start Options</i> menu or the menu for selecting the operating system appears.</p> <ul style="list-style-type: none"> <li>▶ If the menu for selecting the operating system appears, press <b>[F8]</b>.</li> <li>▶ Select <i>Safe Mode</i> or <i>Safe Mode with Network</i>.</li> <li>▶ Go to <i>Start – Settings – Control Panel – Display</i> and the tabs <i>Appearance, Themes, Settings</i> to set the correct values for the connected monitor as described in the operating manual of the monitor.</li> </ul>
Incorrect setting for the monitor in Windows Vista	<ul style="list-style-type: none"> <li>▶ Restart the device.</li> <li>▶ Press <b>[F8]</b> while the system is booting.</li> </ul> <p>Either the <i>Windows Advanced Start Options</i> menu or the menu for selecting the operating system will appear.</p> <ul style="list-style-type: none"> <li>▶ If the menu for selecting the operating system appears, press the <b>[F8]</b> key.</li> <li>▶ Select <i>Safe Mode</i> or <i>Safe Mode with Network</i>.</li> <li>▶ Go to <i>Start symbol – (Settings) – Control Panel – Appearance and Personalization – Personalization</i> and enter the correct values for the connected monitor as described in the operating manual of the monitor.</li> </ul>
Wrong monitor has been set under Windows 7	<ul style="list-style-type: none"> <li>▶ Restart the device.</li> <li>▶ Press <b>[F8]</b> while the system is booting.</li> </ul> <p>Either the <i>Windows Advanced Start Options</i> menu or the menu for selecting the operating system appears.</p> <ul style="list-style-type: none"> <li>▶ If the menu for selecting the operating system appears, press <b>[F8]</b>.</li> <li>▶ Select <i>Safe Mode</i> or <i>Safe Mode with Network</i>.</li> <li>▶ Go to <i>Start – Control Panel – Appearance and Personalization – Display</i> to enter the correct values for the connected monitor as described in the operating manual of the monitor.</li> </ul>

## No mouse pointer displayed on the screen

Cause	Troubleshooting
The mouse is not correctly connected.	<ul style="list-style-type: none"> <li>▶ Shut down the operating system properly.</li> <li>▶ Switch the device off.</li> <li>▶ 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.</li> <li>▶ Make sure that only one mouse is connected.</li> <li>▶ Switch the device on.</li> </ul>

## Time and/or date is not correct

Cause	Remedy
Time and date are incorrect.	<ul style="list-style-type: none"> <li>▶ Set the correct time and date within the operating system you are using.</li> </ul> <p style="text-align: center;">or</p> <ul style="list-style-type: none"> <li>▶ Set the correct time and/or date in the <i>BIOS Setup</i>.</li> </ul>
The lithium battery is discharged.	<ul style="list-style-type: none"> <li>▶ If the time and date are repeatedly wrong when you switch on your device, replace the lithium battery (see <a href="#">"Replacing the lithium battery", Page 52</a>).</li> </ul>

## 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

The instructions on how to restore the content of the hard disk drive under Windows 7 can be found in the "Recovery Guide" manual.

## Tips

Topic	Tip
Out of system resources	<ul style="list-style-type: none"> <li>▶ Close unnecessary applications.</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>▶ Run the applications in a different order.</li> </ul>
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



Please read the relevant safety notes in "Important notes".

Disconnect the power plug from of the mains outlet.

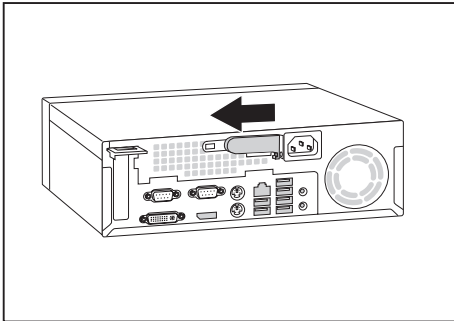
Only re-insert the power plug after you have closed the casing.

- ▶ Switch the device off.

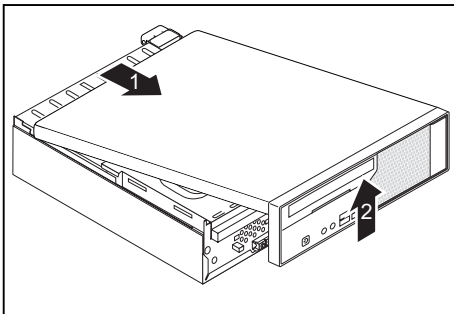


The device must not be in power-saving mode.

- ▶ Remove any connected wires which are in the way.
- ▶ Place the casing in a convenient working position.
- ▶ On devices with a casing lock: Unlock the casing.

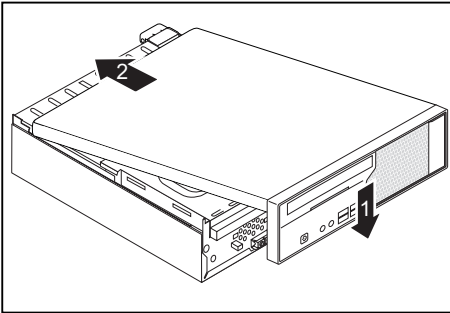


- ▶ Push the sliding locking mechanism past a slight resistance in the direction of the arrow to unlock the housing.

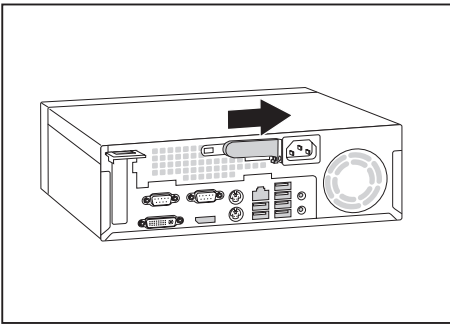


- ▶ Push the casing top cover as far as it will go (approximately 20 mm) in the direction of the arrow (1) and lift it off at an angle in the direction of the arrow (2).

## Closing the casing



- ▶ Position the upper part of the casing from above in the direction of the arrow (1) onto the lower part of the casing so that the distance to the rear edge of the casing is approximately 20 mm.
- ▶ Push the upper part of the casing in the direction of the arrow (2) until it engages.



- ▶ To lock the casing, push the sliding locking mechanism back in the direction of the arrow until it engages.
- ▶ Lock the casing again if necessary.
- ▶ On devices with a casing lock: Lock the casing.
- ▶ Reconnect the cables that you disconnected previously.

## Overview of the drive bays and drives in your device

The casing has space for several accessible and non-accessible drives:

- one drive bay for an accessible 5¼ inch drive (Slim Line) as well as a SmartCard reader (optional)
- one drive bay for a non-accessible 3 ½ inch drive as well as a compact flash module (optional)



"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 plastic drive covers

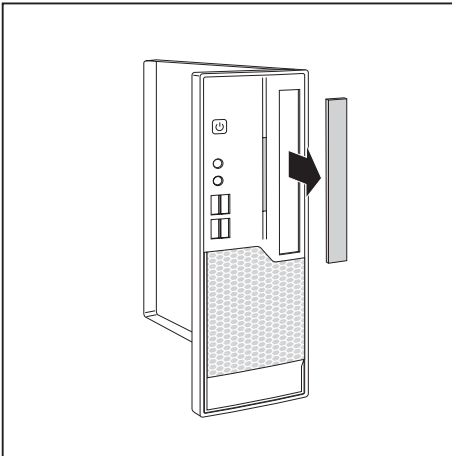
### Removing the plastic drive cover



Do not throw away the covers. If you remove the drive again later, you will need to fit the covers again (cooling, fire protection or EMC regulations which need to be complied with).

If you wish to install an accessible drive in an empty bay, you must first remove the plastic drive cover.

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Lay the casing cover within easy reach on a non-slip surface.

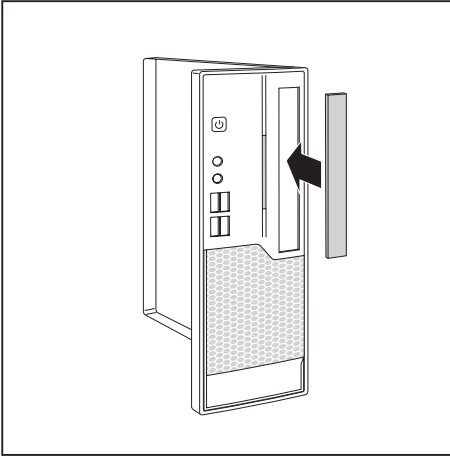


- ▶ Gently press the latches of the relevant plastic drive covers forwards and, working from the outside, pull the plastic drive covers out of the front cover.



## Installing the plastic drive cover

Depending on the drive, e.g. if you wish to remove the accessible drive, you may need to refit the plastic drive cover again afterwards.

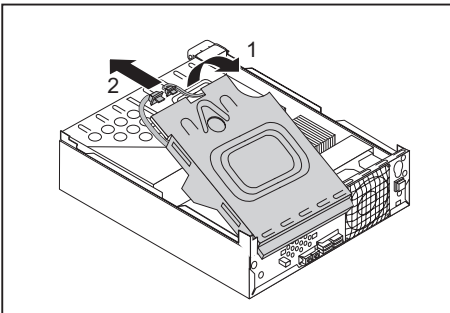


- ▶ Insert the drive cover in the direction of the arrow into the front panel and press the latches lightly into the corresponding brackets.
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Installing and removing the drive cage

### Removing the drive cage

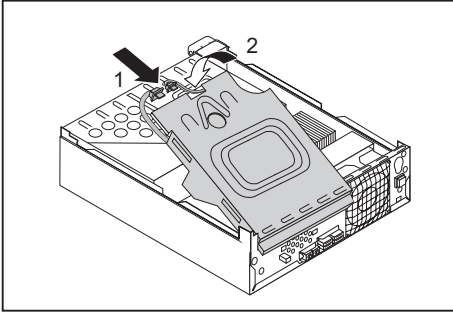
- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



- ▶ Fold up the drive cage at an angle (1).
- ▶ If a drive is present, disconnect the connector of the data and power supply cables from the drive (2).
- ▶ Take out the drive cage from the casing mounts.

## Installing the drive cage

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).

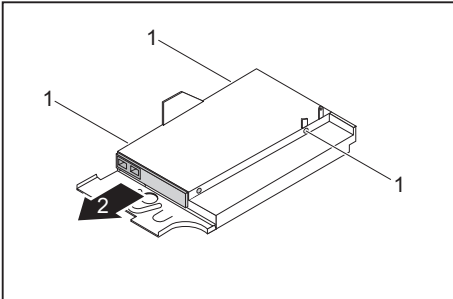


- ▶ Push the drive cage at an angle into the casing mounts (1).
- ▶ If a drive is present, connect the connector of the data and power supply cables (2).
- ▶ Close the drive cage.
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Installing and removing the accessible 5 1/4 inch drive

### Removing an accessible drive

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#)).



- ▶ Remove the screws from the drive cage (1).
- ▶ Take the drive out of the drive cage (2).
- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#)).
- ▶ If you do not want to install a new drive, you must refit the plastic drive cover again (see ["Installing the plastic drive cover", Page 37](#)).

- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Installing an accessible drive

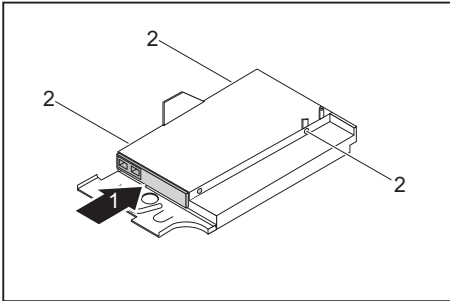
- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



Do not throw away the covers. If you remove the drive again, you must reinstall the covers (cooling, fire protection or EMC regulations to be complied with).

You must only use the screws recommended by the manufacturer. Long screws could damage the drive or prevent it from working properly.

- ▶ If necessary, remove the plastic drive cover (see ["Removing the plastic drive cover", Page 36](#)).
- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#)).



- ▶ Slide the new drive as far as it will go into the drive cage (1).
- ▶ Fasten the screws (2).
- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#)).
- ▶ Connect the connector for the data and power cables to the drive.

- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

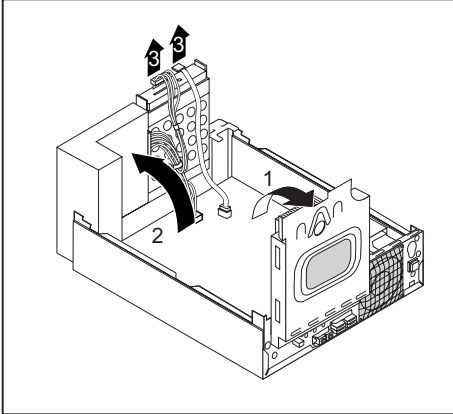


It may be necessary to modify the entry for the drive in the BIOS Setup accordingly.

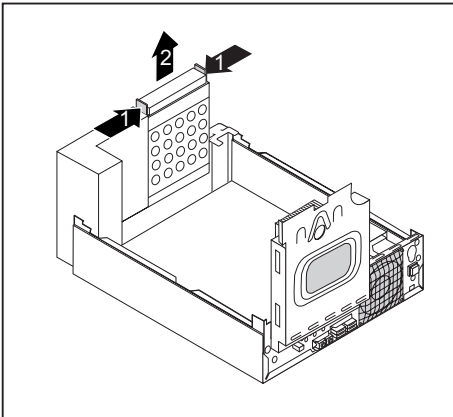
# Installing and removing the hard disk drive

## Removing the hard disk drive

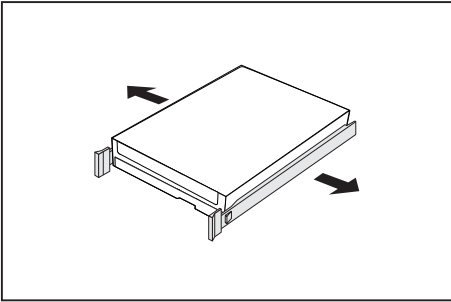
- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



- ▶ Fold up the drive cage (1).
- ▶ If there is a drive in the drive cage, disconnect the data and power supply cables from the drive.
- ▶ Fold up the hard disk cage (2).
- ▶ Pull the data and power supply cable off the hard disk (3).



- ▶ Press the two ends of the EasyChange rails together (1) and pull out the hard disk drive (2).



- ▶ Release the die EasyChange rails from the hard disk.

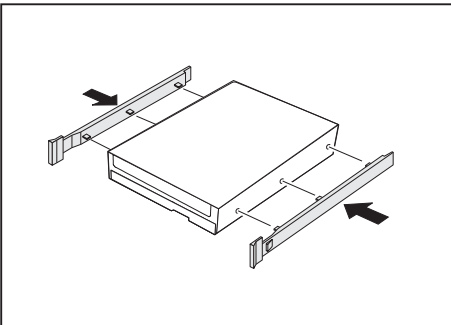


If you do not want to install a new hard disk, keep the EasyChange rails for a future installation.

- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

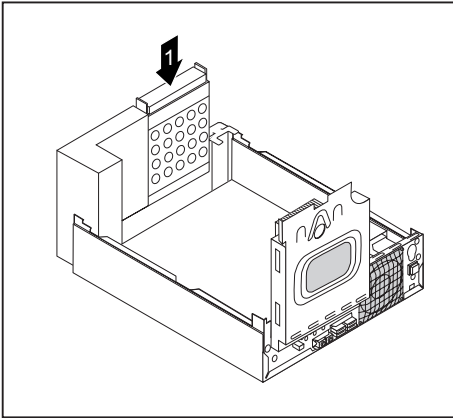
## Installing the hard disk drive

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).

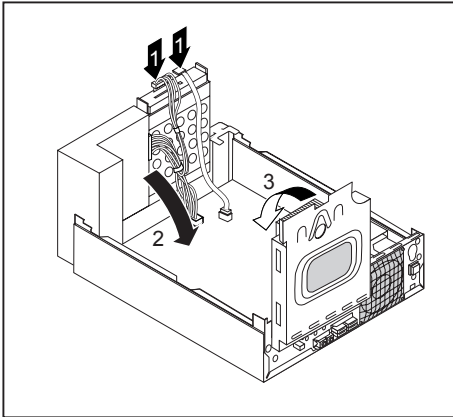


- ▶ Attach the EasyChange rails to the hard disk.

- ▶ Fold up the hard disk cage.



- ▶ Slide the hard disk together with the EasyChange rails into the bay until you feel the hard disk engage(1).



- ▶ Attach the data and the power supply connectors at the hard disk drive (1).
- ▶ If necessary also attach the data cable at the main board. Refer to the manual for the mainboard.



Do not connect any cables.

- ▶ Fold the hard disk cage downwards (2).
- ▶ Fold down the drive cage (3).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

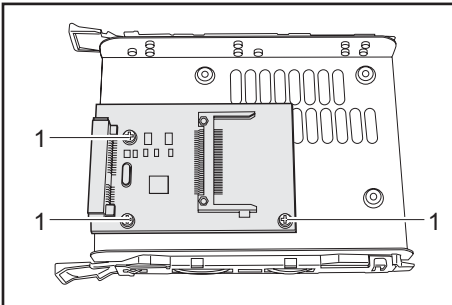


It may be necessary to modify the entry for the drive in the *BIOS Setup*.

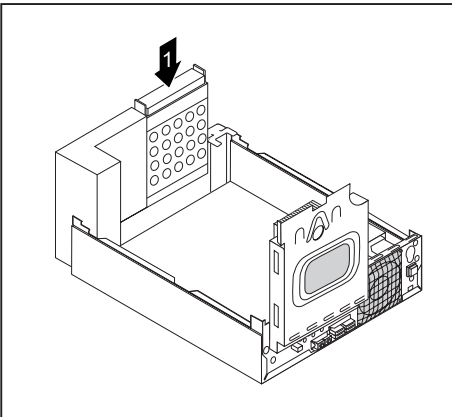
# Installing and removing a Compact Flash module (optional)

## Installing the Compact Flash module

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Swing up the drive cage.
- ▶ If there is a drive in the drive cage, disconnect the data and power supply cables from the drive.



- ▶ Secure the Compact Flash module with the screws (1) to the carrier.

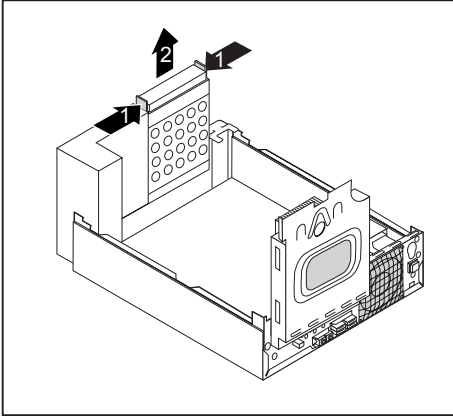


- ▶ Slide the Compact Flash module with the EasyChange rails into its bay until the carrier noticeably engages (1).

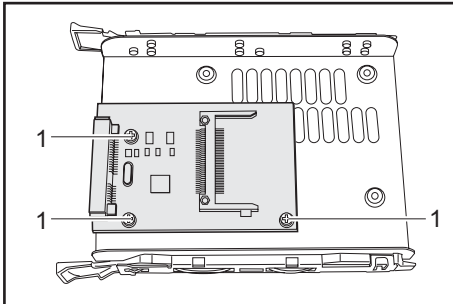
- ▶ Connect the connector for the data and power cables to the Compact Flash module.
- ▶ Fold down the drive cage.
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Removing the Compact Flash module

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Fold up the drive cage.
- ▶ Disconnect the Compact Flash cable connector from the mainboard. Refer to the manual for the mainboard.



- ▶ Press the two ends of the EasyChange rails together (1) and pull out the hard disk drive (2).



- ▶ Loosen the screws (1).
- ▶ Remove the Compact Flash module from its bay.

- ▶ Fold down the hard disk cage (2).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

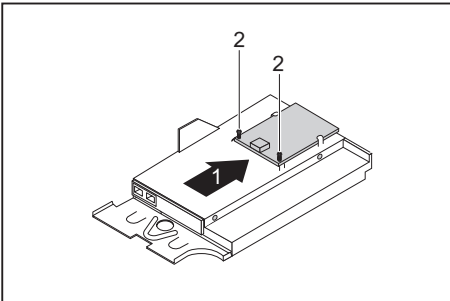


## Installing/removing a SmartCard reader (optional)

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

### Installing the SmartCard reader

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Break out the web at the SmartCard opening on the front cover.

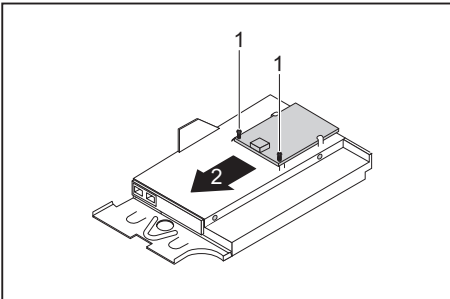


- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#))
- ▶ Slide the SmartCard reader into the bay provided for it (1) and secure it with the two screws (2).
- ▶ Make sure that the SmartCard reader is also between the two brackets. Otherwise, you will not be able to insert the SmartCard from outside.

- ▶ Connect the cable for the SmartCard reader to the mainboard and the SmartCard reader. Refer to the manual for the mainboard.
- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#)).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

### Removing the SmartCard reader

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



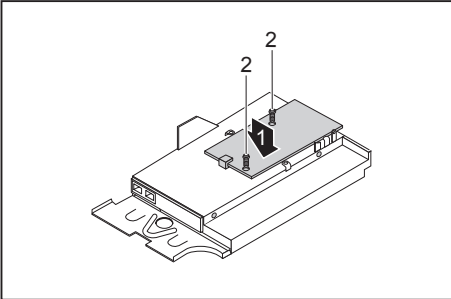
- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#))
- ▶ Disconnect the SmartCard connector from the mainboard. Refer to the manual for the mainboard.
- ▶ Loosen the screws (1).
- ▶ Pull the SmartCard reader out of the bay (2).
- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#))
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Installing and removing a WLAN module (optional)

You can also install a WLAN module for wireless LAN (Local Area Network) in the bay of the folded-open drive cage.

### Installing the WLAN module

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#)).



- ▶ Slide the WLAN module carefully into the designated bay (1) and secure it with the two screws (2).



Make sure that you do not scratch the antenna on the front opening of the drive cage.

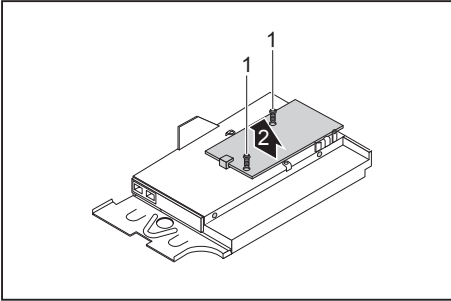
- ▶ Connect the USB cable to the WLAN module.
- ▶ Connect the USB cable of the WLAN module onto the corresponding connector on the mainboard. Refer to the manual for the mainboard.
- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#)).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).



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

## Removing the WLAN module

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Remove the drive cage (see ["Removing the drive cage", Page 37](#)).
- ▶ Disconnect the USB cable of the WLAN module from the connector on the mainboard. Refer to the manual for the mainboard.



- ▶ Remove the screws (1).
- ▶ Pull the WLAN module out of the bay (2) together with the USB cable.



Make sure that you do not scratch the antenna on the front opening of the drive cage.

- ▶ Install the drive cage again (see ["Installing the drive cage", Page 38](#)).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Installing and removing a board



Please read the section "Notes on boards".



You can only install low-profile boards.

To install a board please follow the steps below.

- Opening the retaining clip for the board
- Installing a board
- Closing the retaining clip

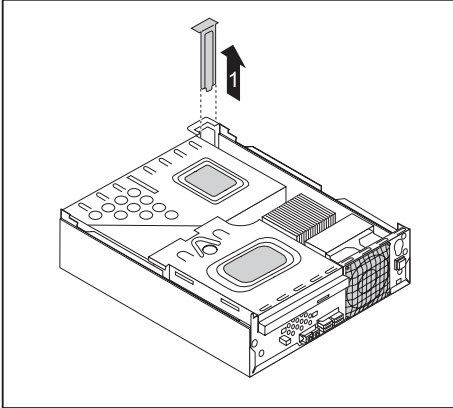
You will learn more about the individual steps in the following sections.

## Installing a board

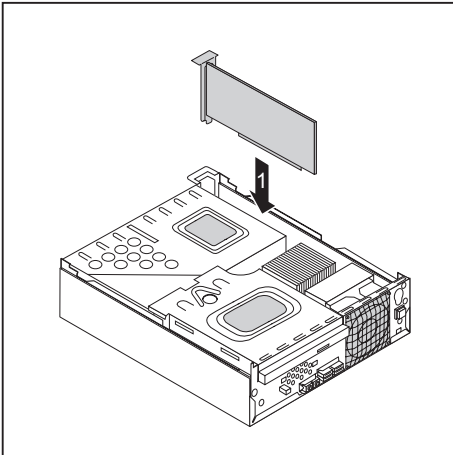


Do not throw the slot cover away. If you remove the board again, you will need to install the slot cover again (cooling, fire protection or EMC regulations which need to be complied with).

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



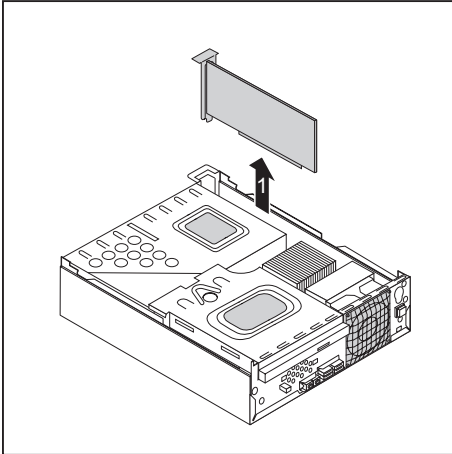
- ▶ Slide the slot cover upward out of the casing (1).
- ▶ Make the required settings on the board.



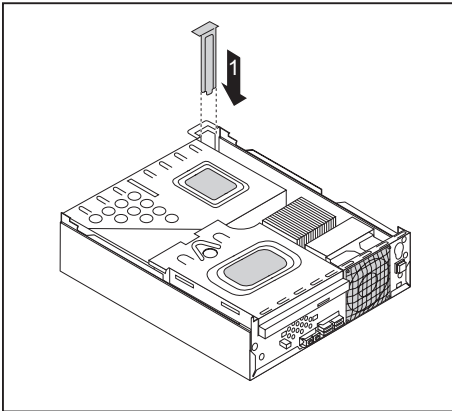
- ▶ Guide the board into the slot recess (1). Ensure that it engages.
- ▶ If necessary, connect the cables to the module.
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).

## Removing boards

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ Remove the heat sink (see ["Removing the heat sink", Page 50](#)).



- ▶ If necessary, unplug any cables which are connected to the board.
- ▶ If you are installing a PCI Express x16 card: Release the board.
- ▶ Remove the board from the casing (1).
- ▶ If you do not want to install a new board, reinstall the slot cover.



- ▶ Slide the slot cover downward into the rear panel of the casing (1).
- ▶ Reinstall the heat sink (see ["Installing the heat sink", Page 50](#)).
- ▶ Close the casing (see ["Closing the casing", Page 35](#)).



If you have installed or removed a PCI board, check the relevant PCI slot settings in the BIOS Setup. Change the settings as required. Further information is provided in the PCI board documentation.

## Installing and removing heat sinks

### Removing the heat sink

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

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).
- ▶ For processors > 65 W: Disconnect the cable of the fan (FAN1) from the mainboard.
- ▶ Undo the screws on the heat sink.
- ▶ Lift the heat sink out of the casing.
- ↳ You can now replace the processor.



Never operate the device without a heat sink! Before initial startup, install the heat sink again in the same way as it was installed in the device before removal.

### Installing the heat sink

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



Install the heat sink again in the same way as it was fitted in the device at the time of removal.

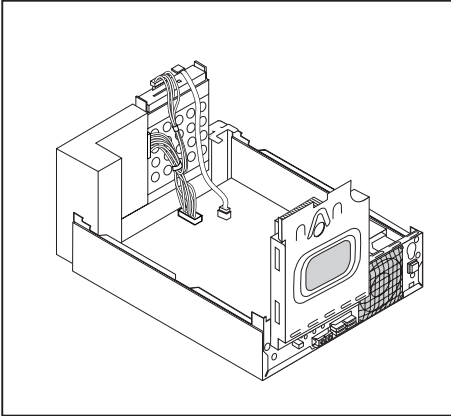
Note the arrows on the heat sink. The arrows must point to the rear of the casing.

- ▶ Insert the heat sink into the casing. To do this, correctly align the screw holes on the heat sink with the screw holes on the mainboard.
- ▶ Tighten the screws on the heat sink in a crosswise fashion.
- ▶ For processors > 65 W: Connect the fan cables to the mainboard.

## Mainboard expansions

More information on how to upgrade the main memory or the processor of your device are provided in the manual for the mainboard.

- ▶ Open the casing (see ["Opening the casing", Page 34](#)).



- ▶ Fold up the drive and hard disk cage as shown.

## Upgrading main memory

- ▶ Upgrade the memory according to the description in the manual for the mainboard.

## Processor, replacing

- ▶ Open the casing and remove the drive hard disk cage (see ["Opening the casing", Page 34](#)).
- ▶ Replace the processor as described in the manual for the mainboard.
- ▶ Re-install the drive and hard disk cage and close the casing (see ["Closing the casing", Page 35](#)).

## 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.



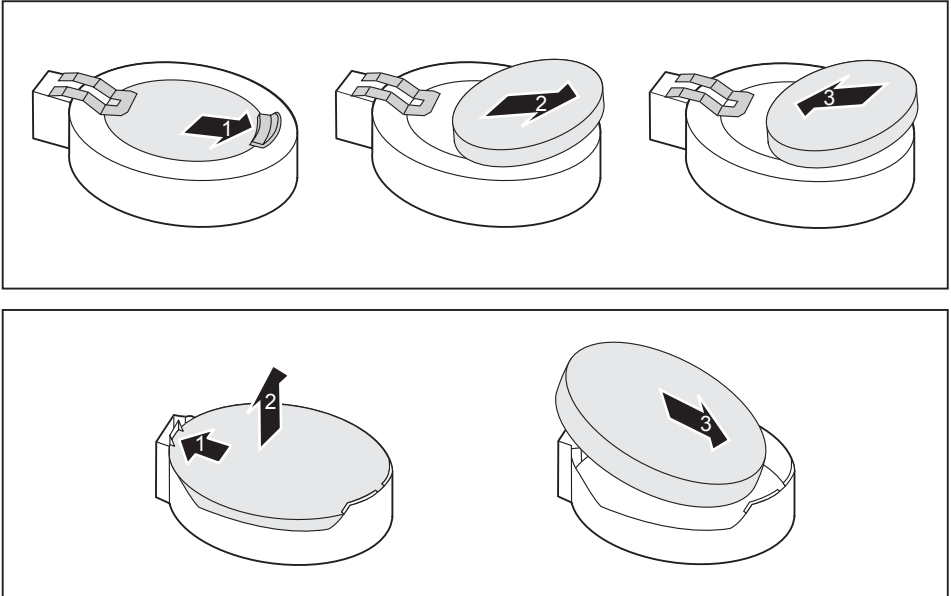
Incorrect replacement of the lithium battery may lead to a risk of explosion!

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.

Ensure that you observe the correct polarity when replacing the lithium battery!

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

<b>Electrical data</b>	
Safety standards complied with:	IEC 60950, EN 60950, UL 1950, CSA 22.2 No.950 EN55022/B, EN55024, EN 61000-3-2/3
Protection class:	I
Rated voltage range	100 V – 240 V
Frequency	50 Hz – 60 Hz
Max. rated current	2.0 A - 1.0 A
<b>Dimensions</b>	
Width/depth/height:	265 mm x 314 mm x 88 mm
<b>Weight</b>	
In basic configuration:	approx. 5.5 kg
<b>Environmental conditions</b>	
Environment class 3K2	DIN IEC 721 part 3-3
Environment class 2K2	DIN IEC 721 part 3-2
Temperature	
Operation (3K2)	15 °C .... 35 °C
Transportation (2K2)	-25 °C .... 60 °C
Condensation must be avoided during operation.	
Clearance required to ensure adequate ventilation:	
without air vents	min. 10 mm
with air vents	min. 200 mm



The data sheet for this device provides further technical data. The data sheet can be found on our website at ["http://ts.fujitsu.com"](http://ts.fujitsu.com).

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