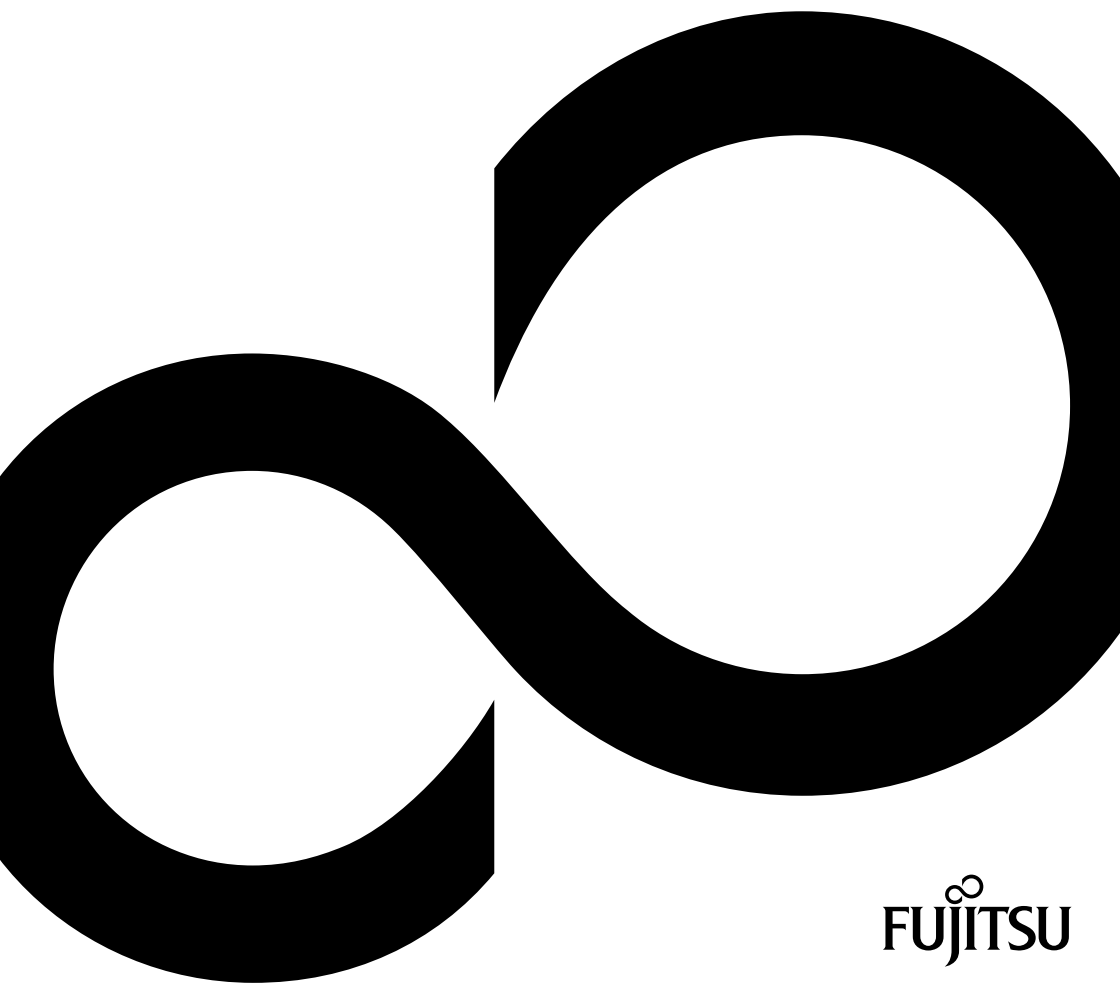


# ESPRIMO Q5xx / Q9xx

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Latest information about our products, useful tips, updates etc. is available on our website: ["http://www.fujitsu.com/fts/"](http://www.fujitsu.com/fts/)

You can find driver updates at: ["http://support.ts.fujitsu.com/download"](http://support.ts.fujitsu.com/download)

Should you have any technical questions, please contact:

- our Hotline/Service Desk (see Service Desk list or from the Internet at: ["http://support.ts.fujitsu.com/contact/servicedesk"](http://support.ts.fujitsu.com/contact/servicedesk))
- Your sales partner
- Your sales office

We hope you enjoy using your new Fujitsu system!





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# **ESPRIMO Q5xx / Q9xx**

## **Operating Manual**

<b>Your ESPRIMO</b>	<b>5</b>
<b>Ports and operating elements</b>	<b>7</b>
<b>Important notes</b>	<b>9</b>
<b>Getting started</b>	<b>14</b>
<b>Operation</b>	<b>30</b>
<b>Troubleshooting and tips</b>	<b>43</b>
<b>System expansions</b>	<b>47</b>
<b>Technical data</b>	<b>63</b>
<b>Index</b>	<b>64</b>

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# Contents

<b>Your ESPRIMO</b>	<b>5</b>
Validity of description	5
Notational conventions	6
<b>Ports and operating elements</b>	<b>7</b>
Front	7
Rear	8
<b>Important notes</b>	<b>9</b>
Safety information	9
Transporting the device	9
Cleaning the device	10
Energy saving, disposal and recycling	10
CE marking	11
FCC Compliance Statement	12
FCC Class B Compliance Statement	12
FCC Radiation Exposure Statement	13
<b>Getting started</b>	<b>14</b>
Unpacking and checking the delivery	14
Steps for initial setup	14
Remove the protective film	14
Installing the lower cover	15
Setting up the device	16
Mounting the device on the VESA interface of a monitor	19
Connecting the power cable	24
Connecting external devices	25
Connecting the cables	25
Disconnecting the cables	25
Ports on the device	26
Connecting a monitor	26
Connecting a USB mouse	27
Connecting a USB keyboard	27
Connecting external devices to the USB ports	27
Switching on for the first time: installing the software	28
Switch on the monitor and the machine	28
Installing the software	29
<b>Operation</b>	<b>30</b>
Switch the device on	30
Switching off the device	30
Indicators on the device	31
Keyboard	32
Important keys and keyboard shortcuts	32
Memory card reader	34
Inserting the memory card	35
Removing the memory card	35
Optical drive (optional)	36
Handling data carriers	36
Inserting or removing a data carrier (slot)	37
Wireless LAN / Bluetooth wireless components (device dependent)	38
Switching the wireless components on and off	38

Settings in BIOS Setup Utility .....	39
Starting the BIOS Setup Utility .....	39
Operating BIOS Setup Utility .....	40
Exiting BIOS Setup Utility .....	40
Property and data protection .....	40
Using the Security Lock .....	41
BIOS Setup security functions .....	42
<b>Troubleshooting and tips .....</b>	<b>43</b>
Help if problems occur .....	43
Troubleshooting .....	43
Power-on indicator remains unlit after you have switched on your device .....	43
The device cannot be switched off with the ON/OFF switch. ....	44
Monitor remains blank .....	44
No mouse pointer displayed on the screen .....	45
Time and/or date is not correct .....	45
Error messages on the screen .....	45
Installing new software .....	45
Restoring the hard disk contents .....	45
Tips .....	46
<b>System expansions .....</b>	<b>47</b>
Information about boards .....	48
Prepare to remove components .....	48
Installing and removing the optical drive .....	49
Removing the top casing cover .....	49
Installing the optical drive .....	49
Removing the optical drive .....	51
Securing the top casing cover .....	53
Removing the bottom casing cover .....	54
Remove the lower cover .....	55
Open the service cover .....	56
Removing and installing the hard disk .....	57
Removing a hard disk .....	57
Installing a hard disk .....	58
Installing and removing memory expansion .....	59
Removing memory modules .....	60
Installing a memory module .....	60
Close the service cover .....	61
Securing the bottom casing cover .....	61
Finish component removal .....	62
<b>Technical data .....</b>	<b>63</b>
<b>Index .....</b>	<b>64</b>



# Your ESPRIMO

... is available with various configuration levels which differ in terms of hardware and software equipment.

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).

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 *Adobe Reader* program, which is also included on the DVD. You can of course also print out a copy of the manual if you prefer.

## Validity of description

The description below applies to the following systems:

- ESPRIMO Q510
- ESPRIMO Q910
- ESPRIMO Q520
- ESPRIMO Q920

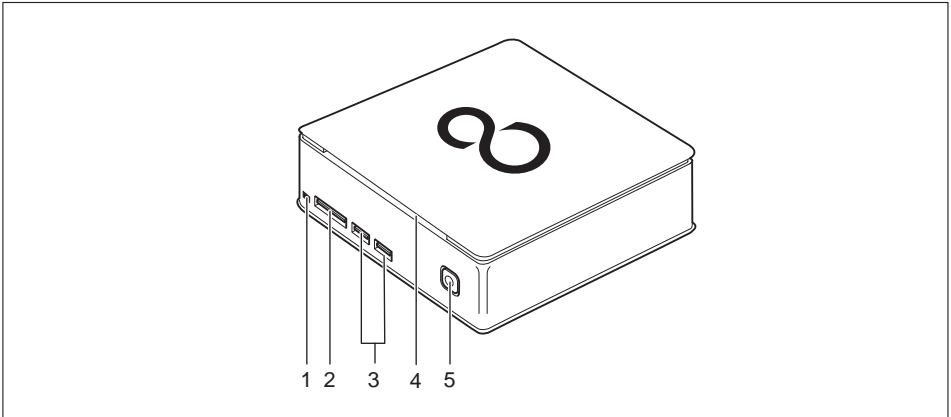
## Notational conventions

	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://www.fujitsu.com/fts">"http://www.fujitsu.com/fts"</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>

# 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 = Optical drive eject button

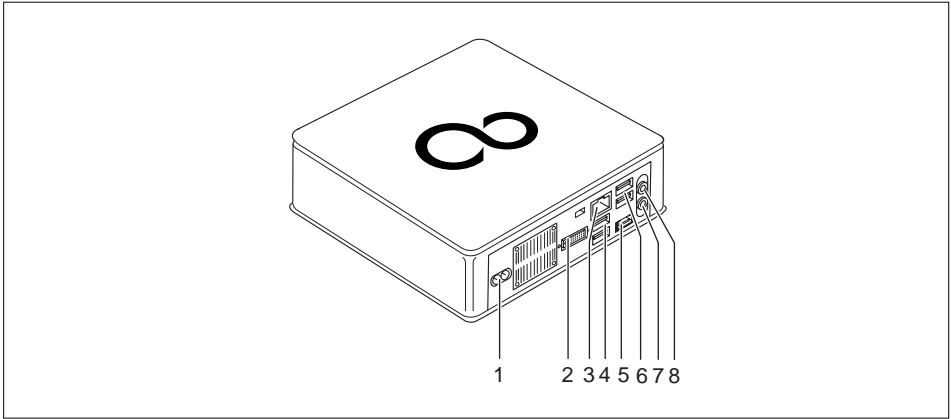
2 = Storage card reader

3 = USB ports

4 = Optical drive (optional)

5 = ON/OFF switch with power-on indicator

## Rear



1 = Power connection (AC IN)

2 = DVI-I port

3 = LAN port

4 = USB ports

5 = DisplayPort / HDMI port  
(device-dependent)

6 = USB ports

7 = Audio output

8 = Microphone jack

# 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 63](#) as well as the instructions in Chapter ["Getting started", Page 14](#).

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.

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/"](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"](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 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.



## FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

The Bluetooth antenna is located on the middle top and is exempt from minimum distance criteria due to its low power.

The transmitters in this device must not be co-located or operated in conjunction with any other antenna or transmitter.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Users are not authorized to modify this product. Any modifications invalidate the warranty.

This equipment may not be modified, altered, or changed in any way without signed written permission from Fujitsu. Unauthorized modification will void the equipment authorization from the FCC and Industry Canada and the warranty.

# 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



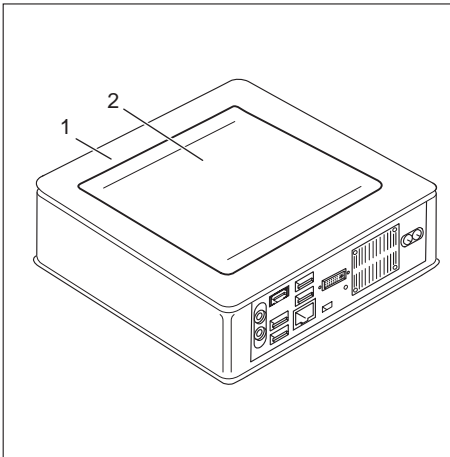
If you have received drives or boards with your device, please do not install them until after first-time setup. How to install drives and boards is described in the ["System expansions", Page 47](#) chapter.

## Remove the protective film

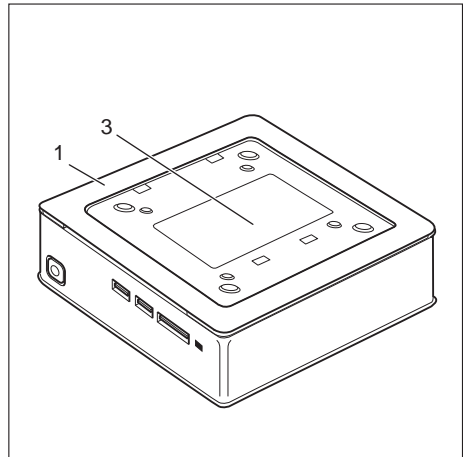
The top and underside and the lower cover are provided with protective film.

- ▶ Remove the protective film before initial startup.

## Installing the lower cover



Device with device cover (1), with installed lower cover (2)



Device with device cover (1) and visible type plate (3), without lower cover.

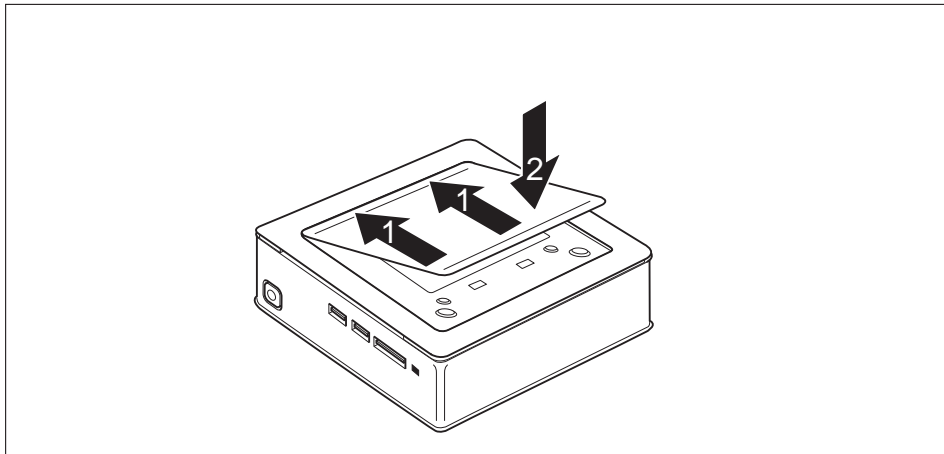
The device is equipped with a device cover (1) on the underside. The device cover is divided into two: during operation, the lower cover (2) is inserted in the device cover.

When your device is delivered, the lower cover (2) is not yet installed on the underside of the device, instead it is enclosed with the system, so that you can see the type rating plate (3) and the software licence information during the initial start-up.

The type rating plate and the software licence are affixed on the device cover and are normally not visible underneath the installed lower cover.

To install the lower cover before the initial start-up and to be able to use the device for the first time, proceed as follows:

- Turn the device over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the device from being scratched.



- ▶ Place the lower cover on the underside of the device as shown.
  - ▶ Hook the lower cover into the openings provided for it on the underside (1).
  - ▶ Fold the cover in the direction of the arrow (2), until you feel and hear it engage.
- You will find information on removing the lower cover in section ["Remove the lower cover", Page 55](#).

## 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 inches 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 inches from the device must be observed for ventilation areas.

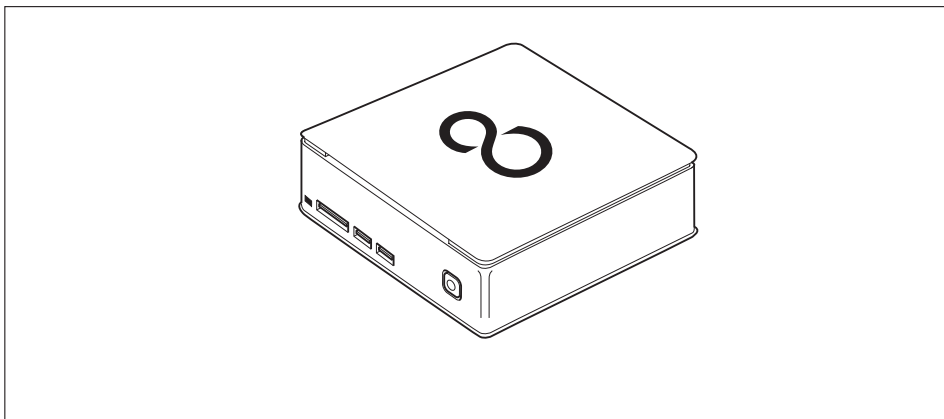
Do not stack several devices on one another and do not stand a monitor on the device.

Do not expose the device to extreme ambient conditions (see ["Technical data", Page 63](#), section "Ambient conditions"). Protect the device against dust, humidity and heat.

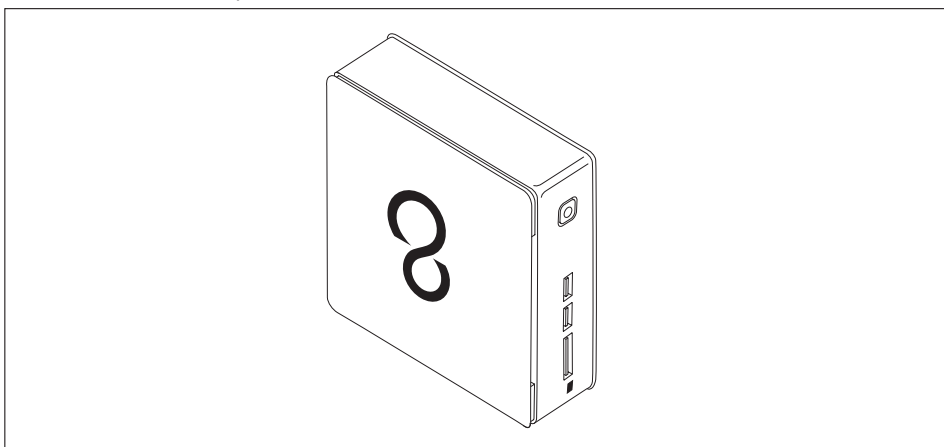
## Operating position

You can use the device in various operating positions:

- horizontal:

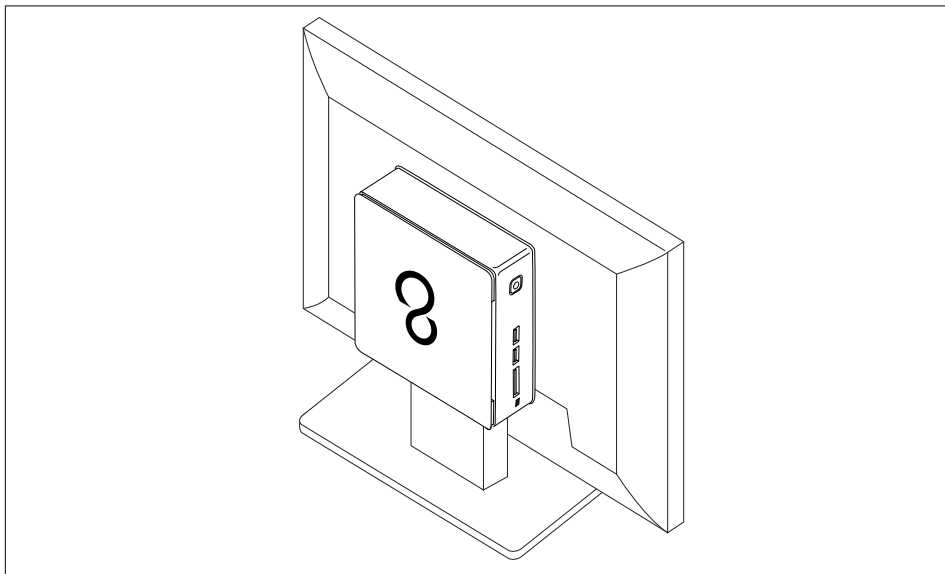


- vertical, on/off switch upwards:



Operation in the vertical operating position is not allowed in Taiwan.

- On the VESA interface of a monitor, on/off switch at the side:



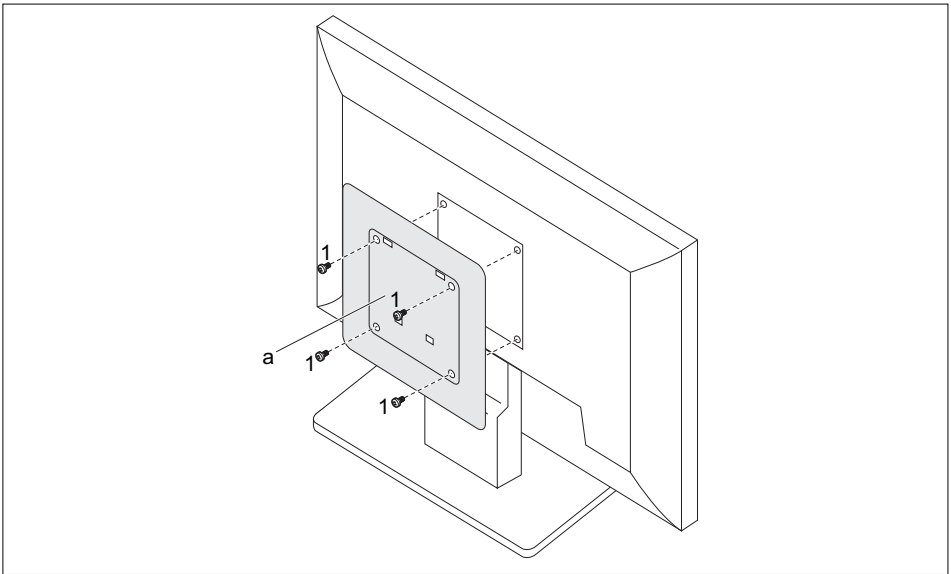
## Mounting the device on the VESA interface of a monitor



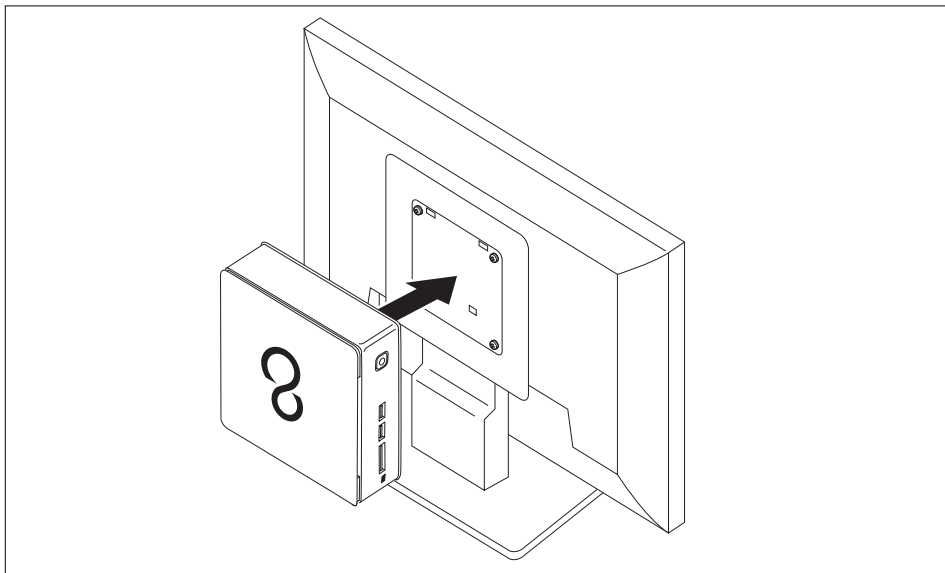
The device must be mounted on the monitor in such a way that the connections and operating controls can be accessed at the side.

- Remove the casing cover and the lower cover (see ["Removing the bottom casing cover", Page 54](#) and ["Remove the lower cover", Page 55](#)).

### Mounting with screws



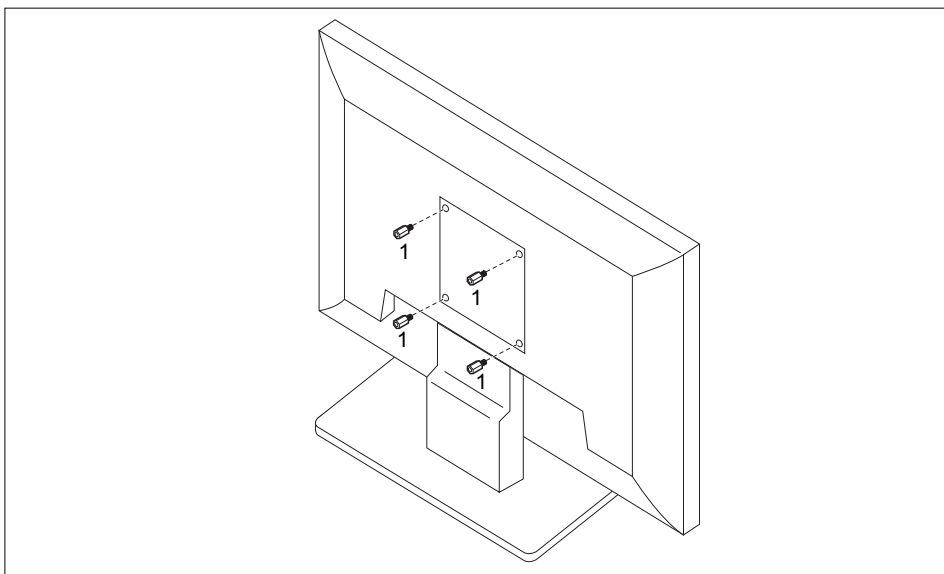
- Install the casing cover (a) on the rear of the monitor using the screws supplied (1).



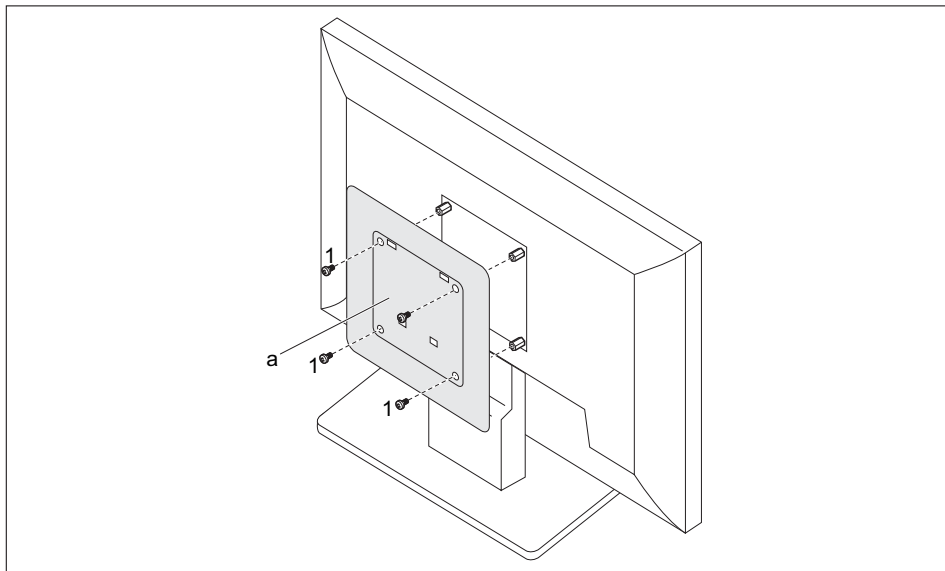
- Secure the device on the casing cover mounted on the monitor.



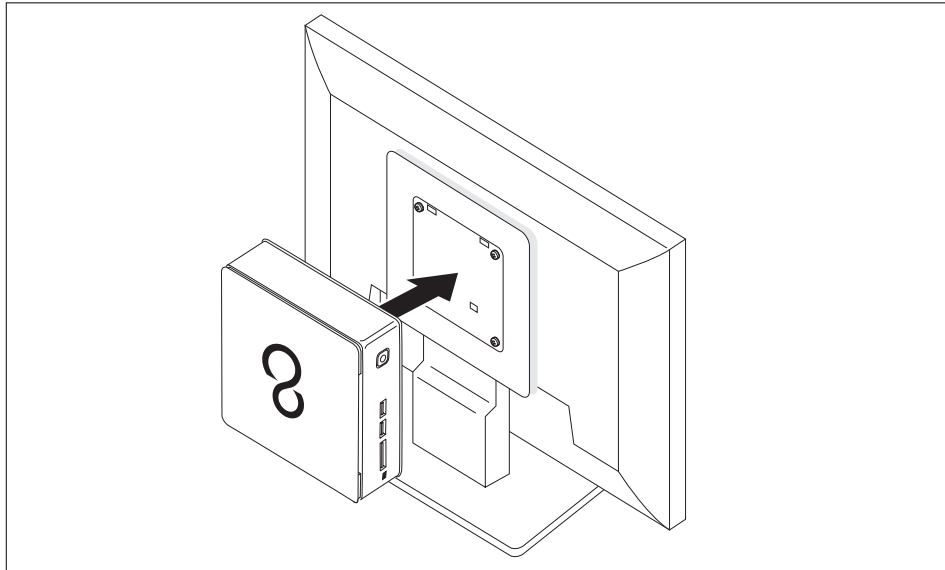
## Mounting with bolts and screws



- Screw in the four hexagon head bolts at the rear of the monitor (1).

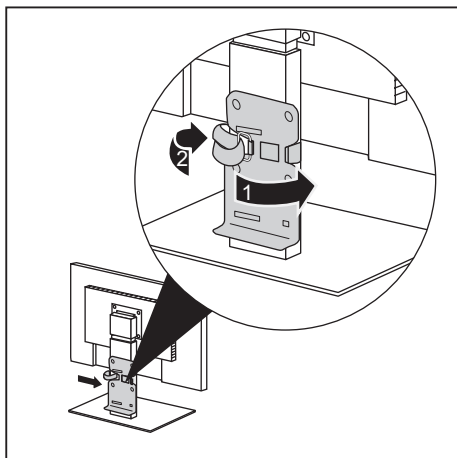


- Install the casing cover (a) into the bolts at the rear of the monitor using the screws supplied (1).

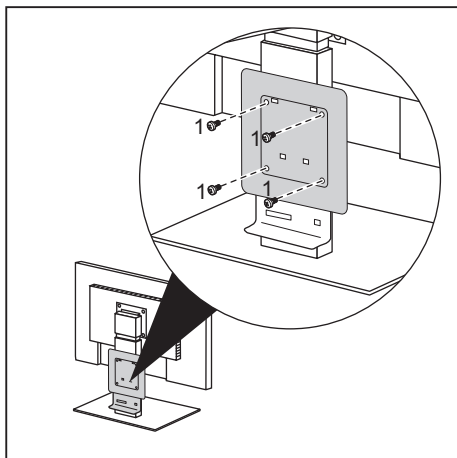


- Secure the device on the casing cover mounted on the monitor.

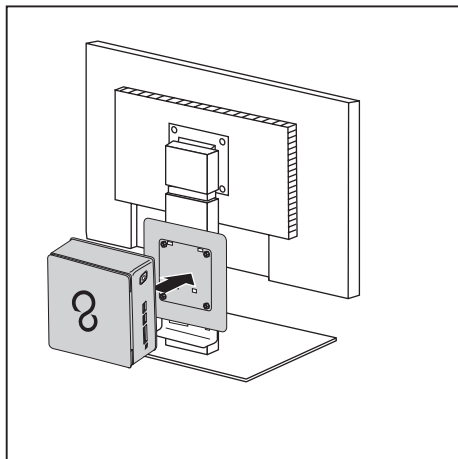
## Mounting on monitors with height-adjustable column



- Detach all cables from the monitor.
- Fix the monitor base adapter by laying the velcro tape around the monitor base (1) and looping it back through the metal eye (2).



- Install the casing cover onto the base adapter using the screws supplied (1).



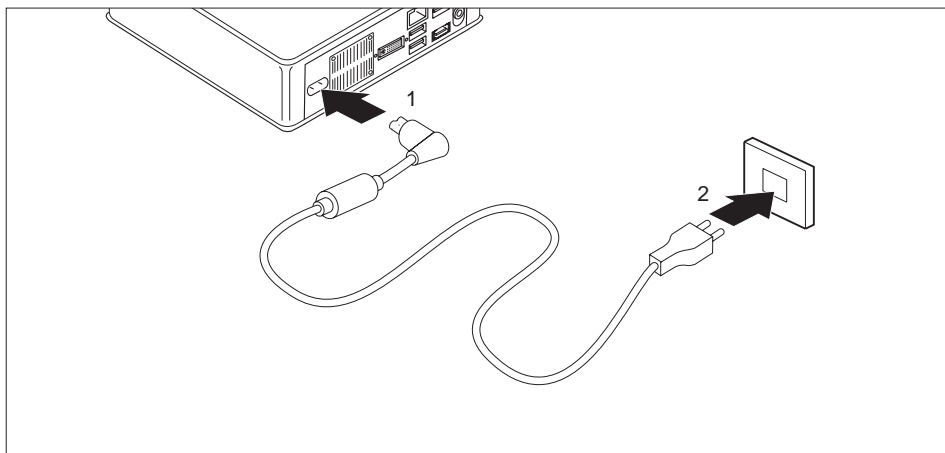
- Secure the device on the casing cover mounted on the monitor.

## Connecting the power cable



Observe the safety notes in the enclosed "Safety/Regulations" manual.

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



- Connect the power cable (1) to the power connection (AC IN) of the device.
- Plug the mains cable (2) into a mains outlet.

## 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 9](#).
- ▶ 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 27](#) 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 rear side 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.

	DVI-I monitor port, white	DP	DisplayPort (device-dependent)
	Audio output (Line Out), light green		HDMI port (device-dependent)
	USB 2.0 - Universal Serial Bus, black (device-dependent)		Audio input (Line in)
	LAN port		USB 3.0 - Universal Serial Bus, blue (device-dependent)
No symbol	MultiCard		



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 desired monitor port of the device.
- ▶ Plug the monitor power cable into a grounded mains outlet.

## Connecting a USB mouse

- ▶ Connect the USB mouse to one of the USB ports on the device.

## Connecting a USB keyboard

Only use the keyboard cable supplied with the keyboard (not within the delivery scope of the device).

- ▶ 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 a USB port of the device.

## 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 that you connect to one of 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 USB transmission capacity, 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.

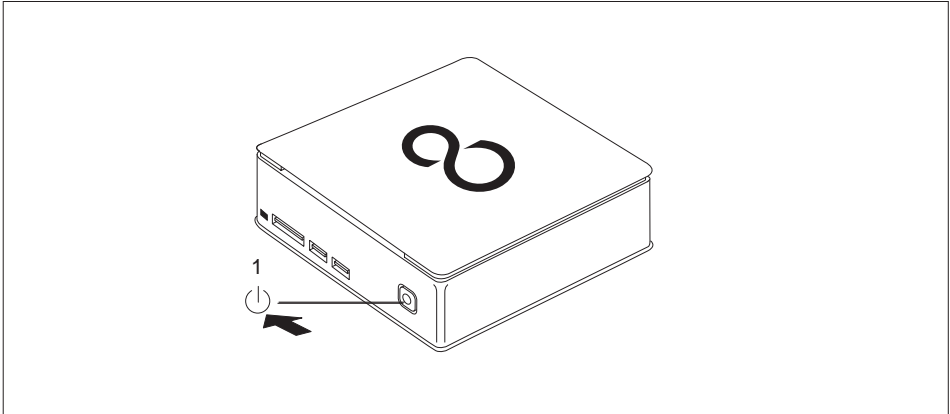
You may need the Windows licence number during the installation. You will find the licence number as a sticker on your device (see ["Remove the lower cover", Page 55](#)).

## 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://www.fujitsu.com/fts/support"](http://www.fujitsu.com/fts/support).

You will find information and help on Windows operating system features on the Internet under ["http://windows.microsoft.com"](http://windows.microsoft.com)

# 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 in a defined manner.
- ▶ 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.

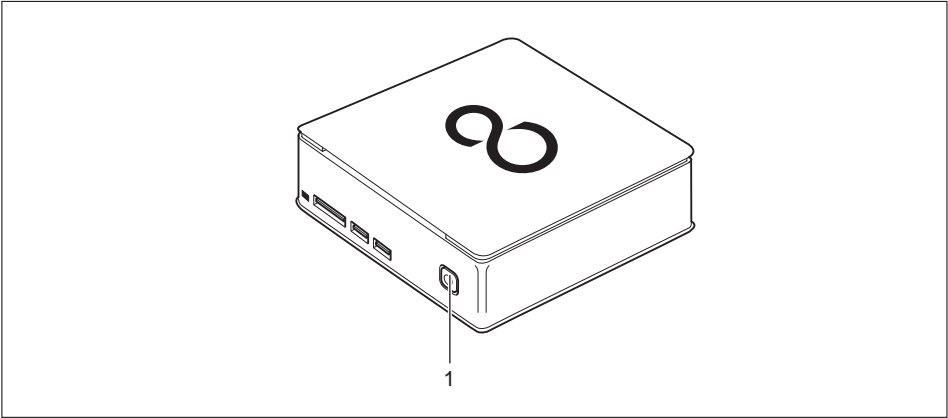


The ON/OFF switch does not disconnect the device from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the power socket.

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

# Indicators on the device

The indicators are 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-on indicator	<p><b>Caution:</b>In energy saving mode, the device must not be disconnected from the mains supply as this can cause loss of data.</p> <ul style="list-style-type: none"><li>• The indicator is illuminated: The device is switched on.</li><li>• 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.</li><li>• The indicator is not illuminated: The device is switched off (disconnected from the mains) or is ready to operate. If the device is ready to operate, it can be switched on with the ON/OFF switch.</li></ul>

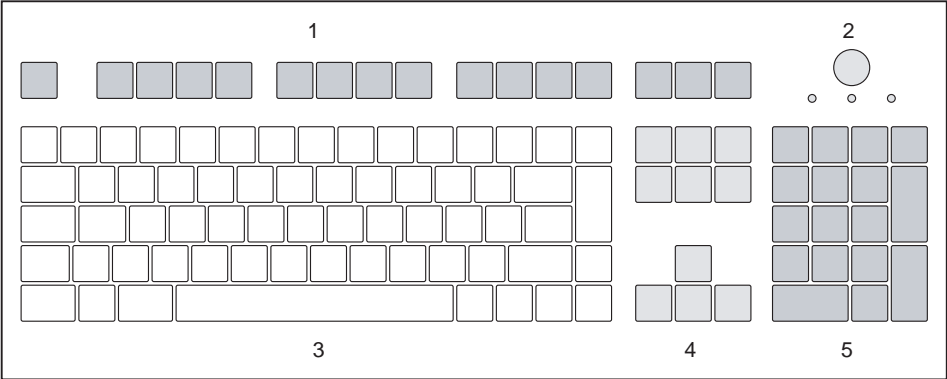


In energy-saving mode the device must not be disconnected from the mains supply, as data loss may occur.

# 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

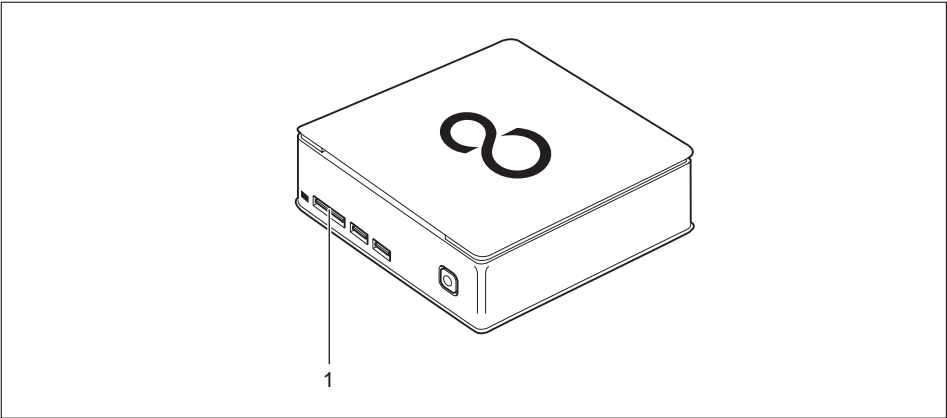
The description of the following keys and keyboard shortcuts applies to Microsoft operating systems. Details of other keys and keyboard shortcuts can be found in the documentation for the relevant application program.

Key / key combination	Description
	<b>On/off switch (optional)</b>  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.  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.
	<b>Enter key</b>  confirms the highlighted selection. The Enter key is also referred to as the "Return" key.

Key / key combination	Description
	<b>Windows key (device dependent: variant 1)</b> calls up the Windows <i>Start</i> menu.
	<b>Menu key (device dependent: variant 1))</b> calls up the menu for the marked item (Windows).
	<b>Windows key (device dependent: variant 2)</b> The Windows key switches between the main screen and the last application used.
	<b>Menu key (device dependent: variant 2)</b> The Menu key calls up the menu for the active application.
	<b>Shift key</b> enables upper-case letters and the upper key symbols to be displayed.
	<b>Alt Gr key (country dependent)</b> produces a character shown on the bottom right of a key (e.g. the @ sign on the  key).
	<b>Num Lock key</b> 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.
	<b>Ctrl key</b> performs a special operation when pressed in conjunction with another key. The  key is also called the "Control" or "Control key".
 +  + 	<b>Windows Security/Task Manager</b> This key combination opens the Windows Security/Task Manager window.

# Memory card reader

A memory card reader is incorporated in the front of your machine.



1 = Storage card reader

Supported storage media	Q510	Q910	Q520	Q920
Secure Digital Card (SD Card)	X	X	X	X
MultiMedia Card (MMC)	X	X	–	–
Reduced-Size MultiMedia Card (RS-MMC)	X	X	–	–
xD Picture Card (xD)	X	X	–	–
Memory Stick (MS)	X	X	–	–
Memory Stick Pro (MS Pro)	X	X	–	–



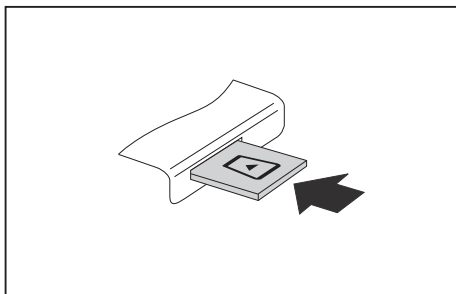
Always wait until the data access is completed before removing a card from the slot.



When handling memory cards, comply with the manufacturer's instructions.  
Your dealer can supply you with an adapter for your memory card.

## Inserting the memory card

The bay of the storage card reader has two slots.



- ▶ Carefully slide the storage card into the appropriate slot. The legend should be facing upwards. Do not apply excessive force, as otherwise the delicate contact surfaces could be damaged.
- ↳ Depending on the particular type used, the memory card may protrude slightly from the slot.

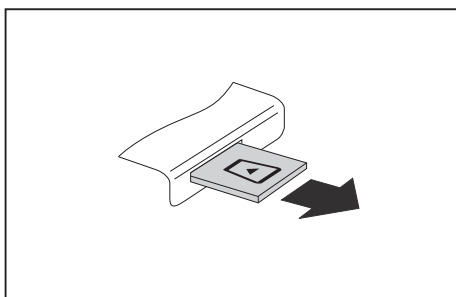
## Removing the memory card



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

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

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



## Optical drive (optional)



This product contains a light emitting diode, classification according to IEC 60825 1:2007: LASER CLASS 1, and must therefore not be opened.

## Handling data carriers

Observe the following guidelines when handling data carriers:

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

You may use 12 cm diameter data carriers in the drive. Do not use any business card CDs or other small data carriers.

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

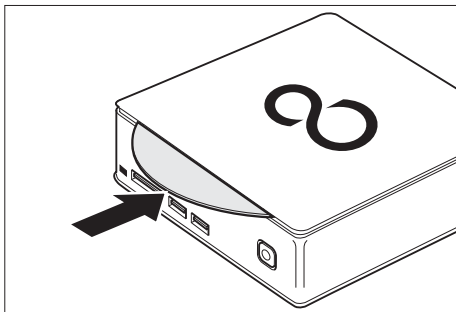


## Inserting or removing a data carrier (slot)

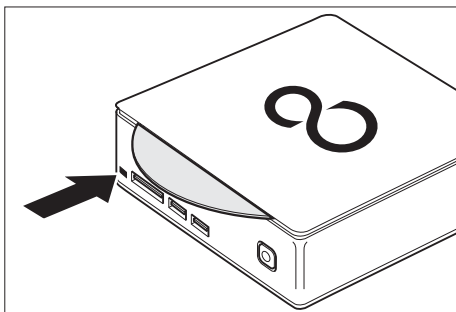


No mechanical CD/DVD eject function is provided (emergency removal).

The Eject tool must be installed under Windows. You will find further information about the system as well as about the drivers, additional software and updates on the "Drivers and Utilities" CD/DVD.



- Slide the data carrier into the drive slot with the printed side facing upwards.



- If there is a data carrier in the drive, press the Eject button and remove the data carrier.



If you press the Eject button while the data carrier in the optical drive is being accessed, the data carrier will not be automatically ejected. Wait until the process has finished, then try it again.

## Wireless LAN / Bluetooth wireless components (device dependent)



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



The operation of these radio components is not allowed in Taiwan.

## Switching the wireless components on and off



You can use the *Device Manager* program to switch the radio components on and off individually.

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

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

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

## Settings in BIOS Setup Utility

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

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

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

Menu	Description
<i>Main</i>	System settings such as time and date
<i>Advanced</i>	Advanced system settings
<i>Boot</i>	Configuration of the start-up sequence
<i>Power</i>	Energy saving function
<i>Security</i>	Password settings and security functions
<i>Exit</i>	Exits the <i>BIOS Setup Utility</i>

The following function keys can also be used:

Key	Description
<b>Esc</b>	To exit the <i>BIOS Setup Utility</i> . The current settings are not saved.
<b>F7</b>	To reject changes and load the previous configuration of the <i>BIOS Setup Utility</i> .
<b>F9</b>	To load the default configuration of the <i>BIOS Setup Utility</i> .
<b>F10</b>	To exit the <i>BIOS Setup Utility</i> . The current settings are saved.

## Starting the BIOS Setup Utility

- ▶ Reboot the device (switch off/on or reboot the operating system).
- ↳ The following or a similar display appears on the screen at start-up:  
<F2> BIOS Setup <F12> Boot Menu

- ▶ Press the function key **F2**.
- ▶ If a password has been assigned, enter the password and press the Enter key.



If you have forgotten the password, contact your system administrator or contact our customer service centre.

The *BIOS Setup Utility* starts.

## Operating BIOS Setup Utility



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

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

- ▶ Use the cursor keys **←** or **→** to select the menu you wish to access to make changes.
  - ↳ The menu is displayed on the screen.
- ▶ Select the option you want to change with the cursor keys **↑** or **↓**.
- ▶ Press the Enter key.
- ▶ Press the **ESC** key to exit the selected menu.
- ▶ For future reference, make a note of the changes you have made (for example, in this manual).

## Exiting BIOS Setup Utility

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

### Exit Saving Changes - save changes and exit BIOS Setup Utility

- ▶ To save the current menu settings and exit the *BIOS Setup Utility*, select *Exit Saving Changes* and *Yes*.
  - ↳ The device is rebooted and the new settings come into effect.

### Exit Discarding Changes – Discard changes and exit BIOS Setup Utility

- ▶ To discard the changes, select *Exit Discarding Changes* and *Yes*.
  - ↳ The settings which applied when *BIOS Setup Utility* was called up remain effective. The *BIOS Setup Utility* is terminated and the device is rebooted.

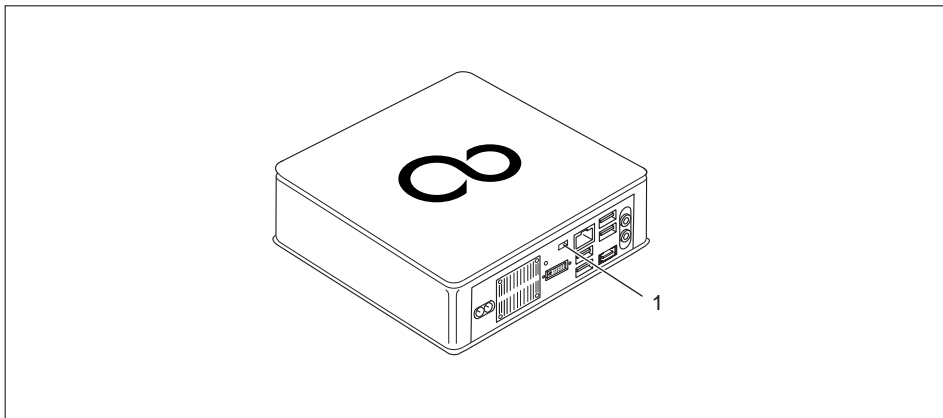
## Property and data protection

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.

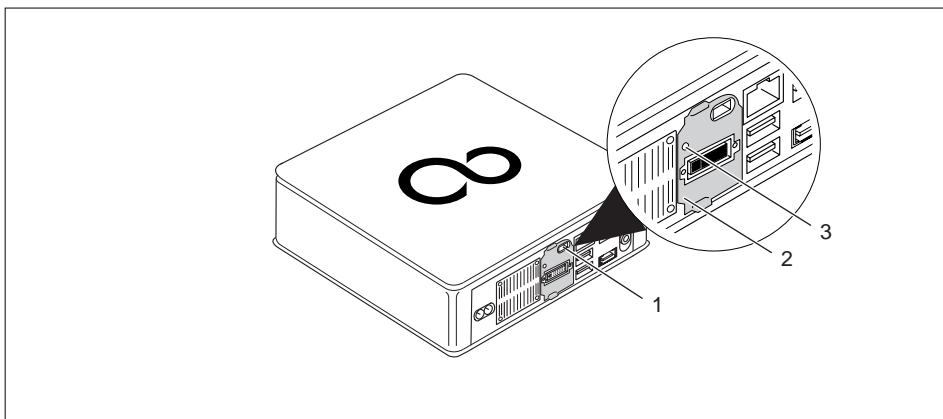
## Using the Security Lock

Your device has a security lock mechanism. You can protect your device against theft using the security lock mechanism and the Kensington Lock cable (steel cable, accessory). Please consult the manual for your Kensington Lock. You can install the optionally available lock plate (2) to prevent unauthorised opening of the device.

Device with Kensington Lock (1), without lock plate:



Device with Kensington Lock (1), with lock plate (2) (secured with screw (3)):



► Fit the Kensington Lock cable to the mechanism (1) of your device.



If you mount the device on a monitor (mounting on the VESA interface, see ["Mounting the device on the VESA interface of a monitor", Page 19](#)), it is strongly recommended that you install the lock plate. In doing so, you make it certain that the device will not fall down.

## BIOS Setup security functions

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

- Prevent unauthorised access to the system
- Prevent unauthorized access to the *BIOS Setup*



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

Make a note of passwords and keep them in a safe place. If you forget your supervisor password you will no longer be able to access your device. Deleting passwords is not covered by your warranty and a charge will be made for assistance.



Your password can be a maximum of 32 characters long and can consist of letters and numbers. No distinction is made between uppercase and lowercase.

# Troubleshooting and tips



Refer to the safety notes in the "Safety/regulations" manual and in the ["Getting started", Page 14](#) 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. You will find the ID number on the type rating plate under the type rating plate cover on the underside of your device (see ["Installing the lower cover", Page 15](#)). If necessary, remove the type rating plate cover to be able to gain access to the ID number.
- ▶ 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"](http://support.ts.fujitsu.com/contact/servicedesk)). When you do this, please have ready the ID 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.	<ul style="list-style-type: none"> <li>▶ Check that the power cable is properly plugged into the device and into the mains socket.</li> </ul>
Internal power supply overloaded.	<ul style="list-style-type: none"> <li>▶ Unplug the power plug of the device from the mains socket.</li> <li>▶ Wait approx. 3 min.</li> <li>▶ Plug the power plug of the device into the mains socket again.</li> <li>▶ Switch the device on.</li> </ul>

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

Cause	Remedy
System crash	<ul style="list-style-type: none"> <li>▶ Keep the on/off switch pressed for at least 4 seconds until the machine switches off.</li> </ul> <p>Caution: This can lead to a loss of data!</p> <p>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.</p>

## Monitor remains blank

Cause	Remedy
Monitor is switched off.	<ul style="list-style-type: none"> <li>▶ Switch your monitor on.</li> </ul>
Power saving has been activated (screen is blank)	<ul style="list-style-type: none"> <li>▶ Press any key on the keyboard.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>▶ Deactivate the screen saver. If necessary, enter the appropriate password.</li> </ul>
Brightness control is set to dark	<ul style="list-style-type: none"> <li>▶ Adjust the brightness control. For detailed information, please refer to the operating manual supplied with your monitor.</li> </ul>
Power cable not connected	<ul style="list-style-type: none"> <li>▶ Switch off the monitor and the device.</li> <li>▶ 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.</li> <li>▶ Check that the device power cable is properly plugged into the device and a grounded mains outlet.</li> <li>▶ Switch on the monitor and the device.</li> </ul>
Monitor cable not connected	<ul style="list-style-type: none"> <li>▶ Switch off the monitor and the device.</li> <li>▶ Check that the monitor cable is properly connected to the device and monitor.</li> <li>▶ Switch on the monitor and the device.</li> </ul>
Wrong monitor settings	<ul style="list-style-type: none"> <li>▶ Restart the system.</li> <li>▶ Press <b>[F8]</b> while the system is booting.</li> <li>▶ Start the system in Safe Mode.</li> <li>▶ Set the correct values for the connected monitor as described in the operating manual of your monitor.</li> </ul>



## No mouse pointer displayed on the screen

Cause	Remedy
The mouse is not correctly connected.	<ul style="list-style-type: none"> <li>▶ Shut down your operating system in the proper manner, for instance using <b>[Ctrl] + [Alt] + [Del]</b>.</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>or</p> <ul style="list-style-type: none"> <li>▶ Set the correct time and/or date in the <i>BIOS Setup</i>.</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

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

# Tips

Topic	Tip
Out of system resources	<div>► Close unnecessary applications.</div> <div>or</div> <div>► Run the applications in a different order.</div>
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.

# Prepare to remove components



Please observe the safety information in chapter ["Important notes", Page 9.](#)

Remove the power plug from the mains outlet!

- Switch the device off.

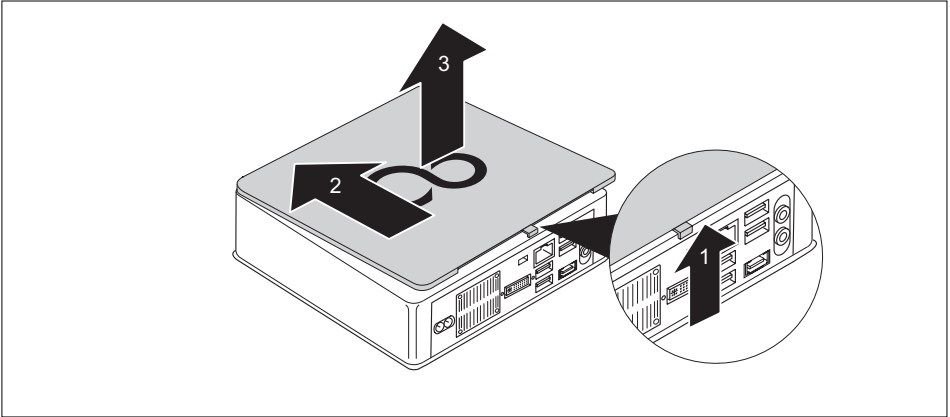


The device must not be in energy-saving mode !

- Remove all the cables from the device.
- Place the device on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the device from being scratched.

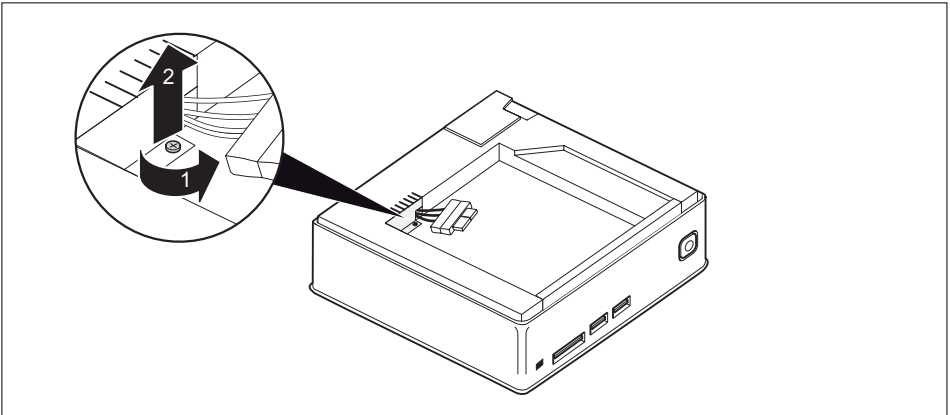
## Installing and removing the optical drive

### Removing the top casing cover

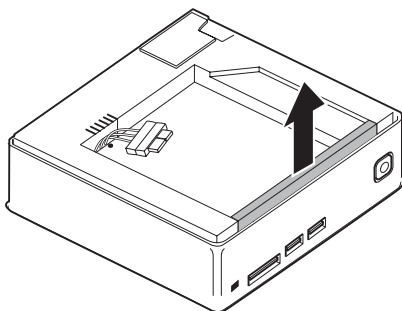


- ▶ Push the release on the rear side of the device in the direction of the arrow (1) while at the same time sliding the top casing cover in the direction of the arrow (2).
- ▶ Lift the casing cover off the device (3).

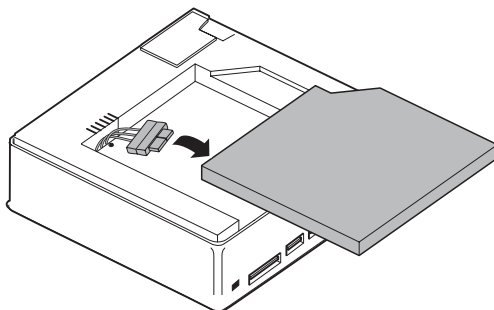
### Installing the optical drive



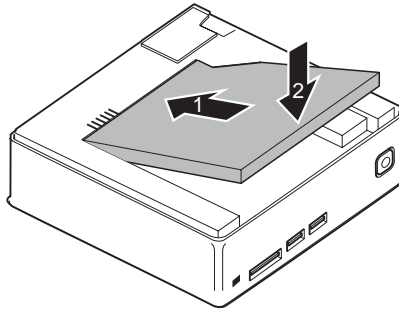
- ▶ Remove the screw (1) and lift the metal cover (EMC protection) secured by it off the casing (2).



- Remove the blanking cover with which the drive bay is sealed.



- Connect the cables to the optical drive.

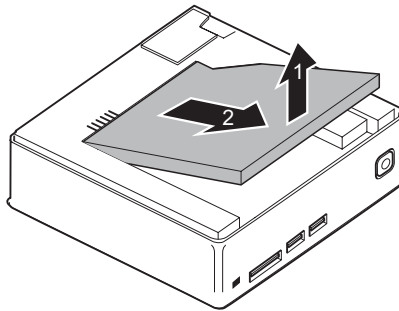


- Position the optical drive at the edge of the drive bay (1) and set it down carefully (2). Take care that no cables or lines become trapped.

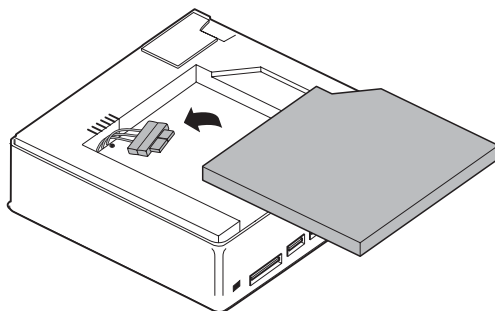


Keep the blanking cover and metal cover safe for later use, e.g. if you ever remove the optical drive again at a later date.

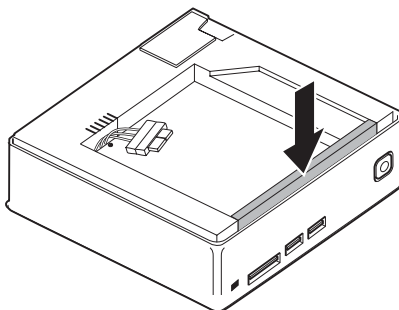
## Removing the optical drive



- Lift the optical drive slightly (1).
- Pull the drive gently in the direction of the arrow (2) until the contacts and cables of the drive and casing are accessible.

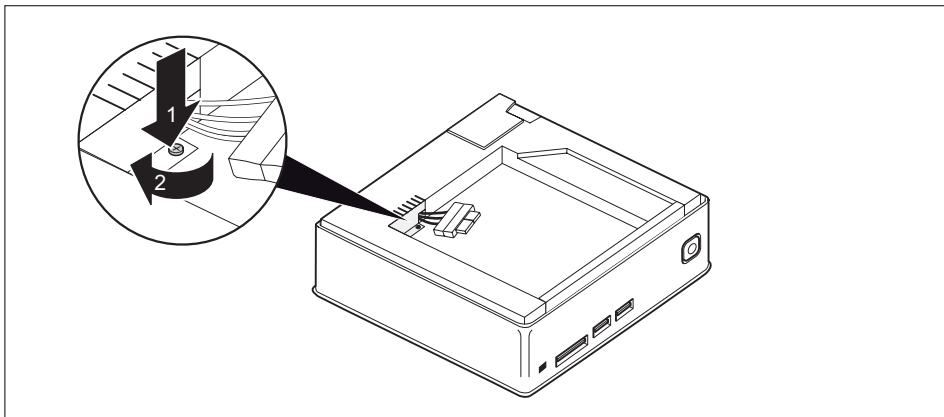


- Disconnect the cable from the drive and remove the drive from the casing.



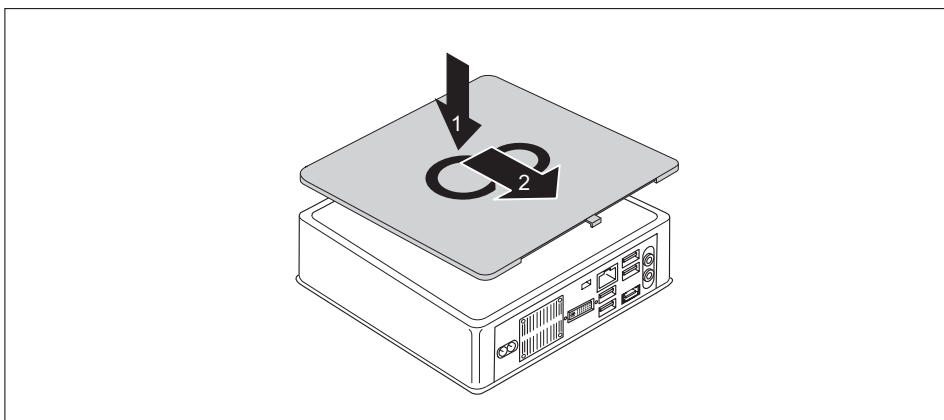
- Secure the blanking cover to the casing.





- Insert the metal cover (EMC protection) in the casing (1) and secure it with the screw (2).

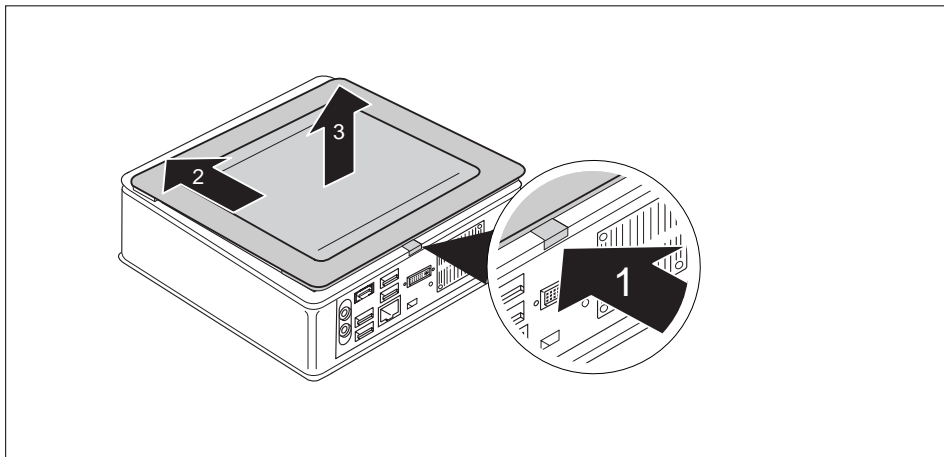
## Securing the top casing cover



- Place the top casing cover on the device (1).
- Slide the casing cover in the direction of the arrow (2) until it is felt to engage.

## Removing the bottom casing cover

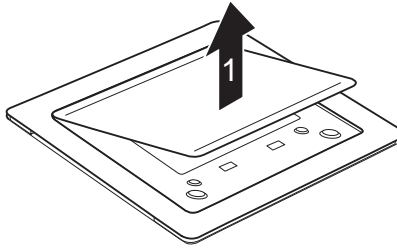
- ▶ Turn the device over.



- ▶ Push the release on the rear side of the device in the direction of the arrow (1) while at the same time sliding the bottom casing cover in the direction of the arrow (2).
- ▶ Lift the casing cover off the device (3).

## Remove the lower cover

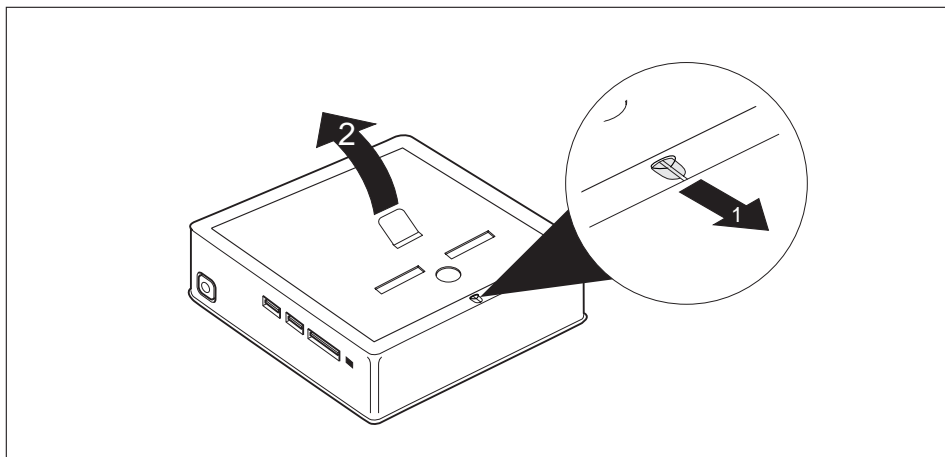
- Requirement: The casing is open and the casing cover is removed (see ["Removing the bottom casing cover", Page 54](#)).



- Release the lower cover catches from the casing cover and lift the lower cover away from the cover.

You will find information on securing the lower cover in section ["Installing the lower cover", Page 15](#).

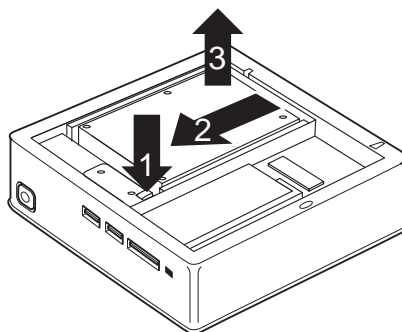
## Open the service cover



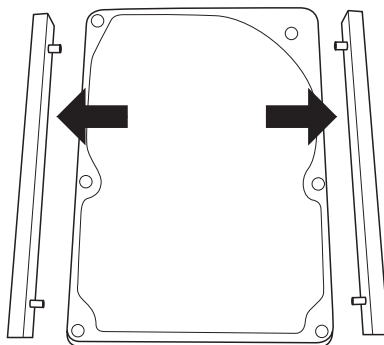
- ▶ Slide the clip in the direction of the arrow (1) and hold it there.
- ▶ Pull the cover on the tab in the direction of the arrow (2) and away from the casing.

## Removing and installing the hard disk

### Removing a hard disk

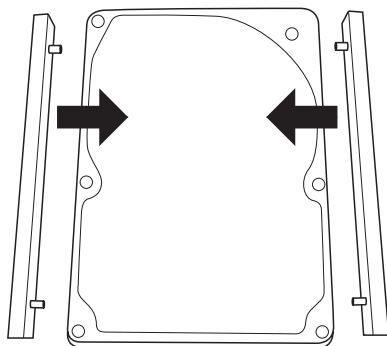


- ▶ To release the hard disk, keep the clip pressed down (1).
- ▶ Slide the hard disk in the direction of the arrow (2).
- ▶ Lift the hard disk out of the device (3).

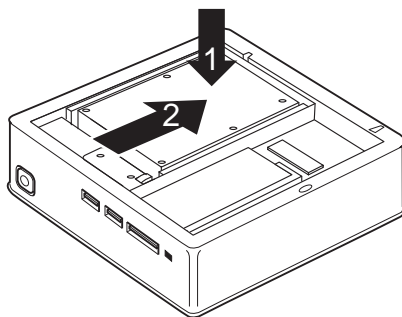


- ▶ Remove the guide rails from the hard disk.

## Installing a hard disk



- Secure the guide rails on the hard disk. Make sure that the guide openings point downwards.



- Insert the hard disk into the device (1). Make sure that the label on the hard disk faces upwards.
- Slide the hard disk in the direction of the arrow (2) until the clip engages.

# Installing and removing memory expansion

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



Please observe the safety information in chapter ["Important notes", Page 9](#).

The device must not be connected to the power supply when memory modules are installed or removed, see ["Prepare to remove components", Page 48](#).

Only use memory extensions that have been approved for your device, see chapter ["Technical data", Page 63](#).

Never use force when installing or removing a memory extension.

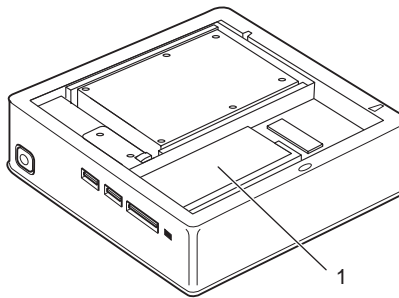
Make sure that foreign objects do not fall into the memory extension compartment.

You must open the service cover to remove or install a memory module. On some devices, it is possible that opening the compartment exposes various components. Only authorised specialists are allowed to remove or change these components. These instructions must therefore be followed without fail:



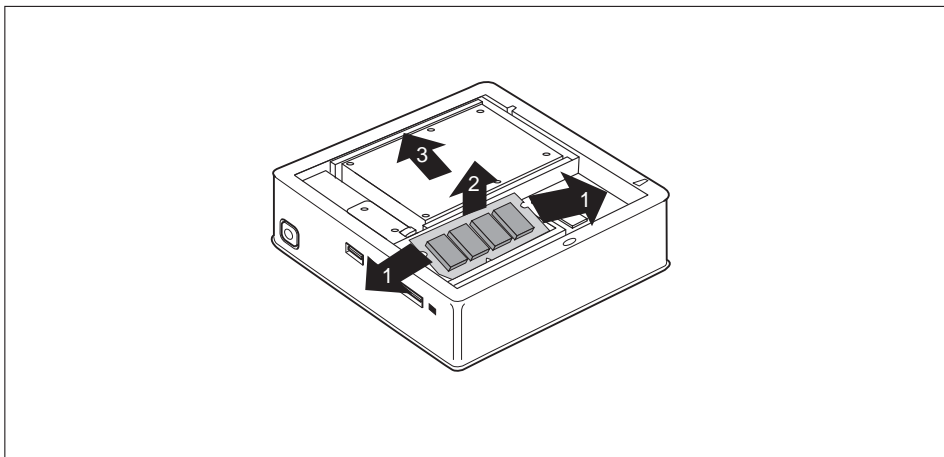
Individual components can become very hot during operation. For this reason we recommend that after switching it off, you wait until the device has cooled down. Otherwise, there is a risk of being burned!

As some components are exposed that are sensitive to static electricity, please take note of chapter ["Information about boards", Page 48](#).



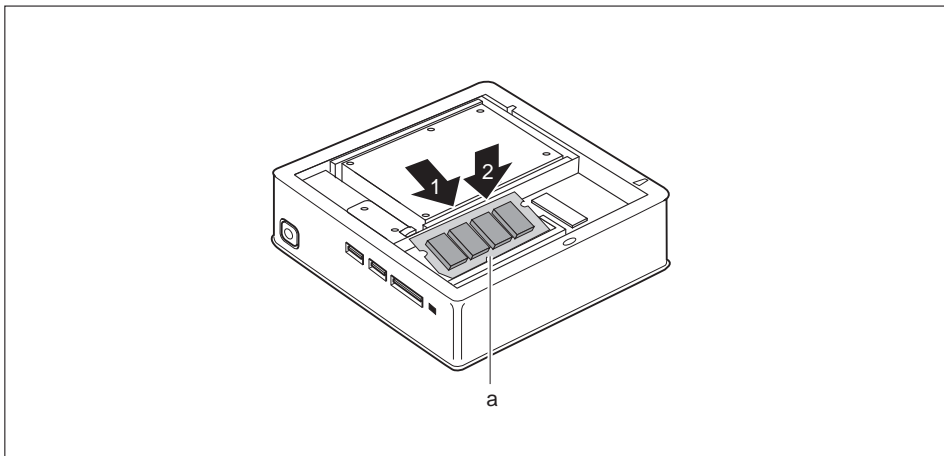
1 = memory module position

## Removing memory modules



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

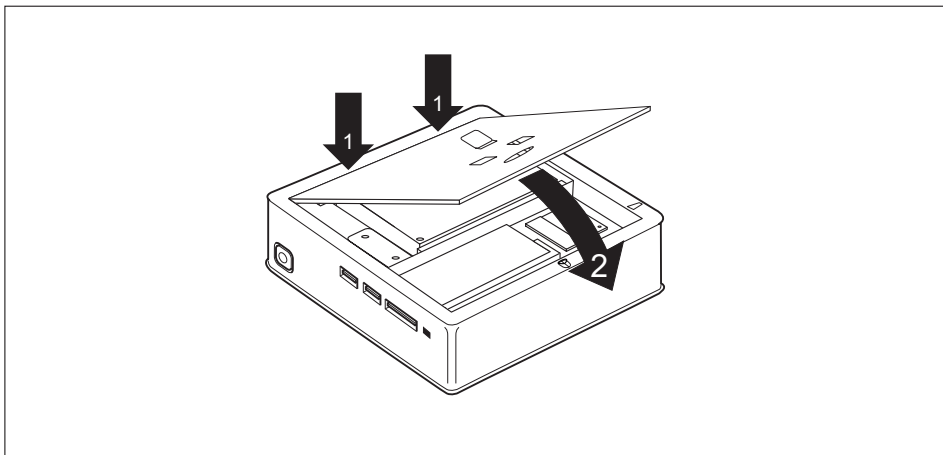
## Installing a memory module



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

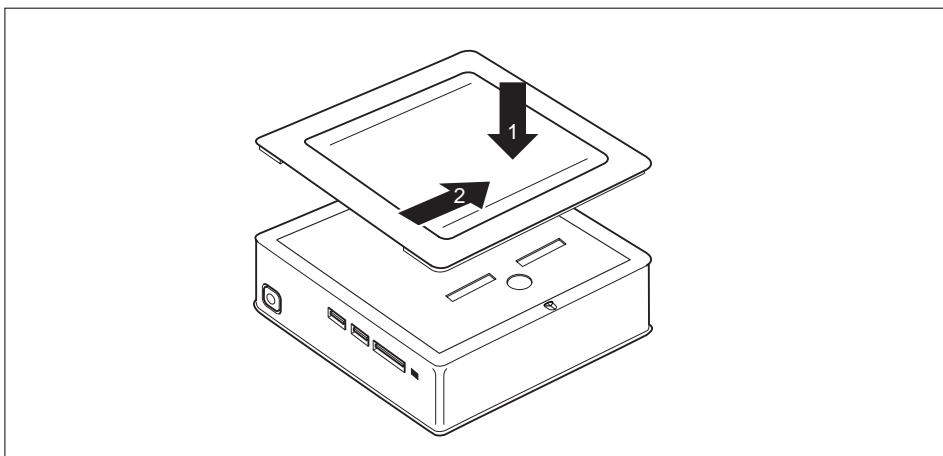


## Close the service cover



- ▶ Insert the catches of the cover in the associated recesses on the casing (2).
- ▶ Fold the cover in the direction of the arrow (2).

## Securing the bottom casing cover



- ▶ Place the bottom casing cover on the device (1).
- ▶ Slide the casing cover in the direction of the arrow (2) until it is felt to engage.
- ▶ Position the device the correct way up again.

## Finish component removal

- ▶ Connect the previously disconnected cables to the device again.

# Technical data

<b>Electrical data</b>	
Safety standards complied with:	IEC 60950-1, EN 60950-1, UL 60950-1 CSA 22.2 No.60950-1
Protection class:	II
Rated voltage range	100 – 240 V
Rated frequency	50 – 60 Hz (AC)
Max. rated current	1.2 – 0.6 A
<b>Dimensions</b>	
Width/depth/height:	185 mm x 187.5 mm x 58 mm / 7.28 inch x 7.38 inch x 2.28 inch
<b>Weight</b>	
in basic configuration:	approx. 1.8 kg / 3.97 lbs
<b>Ambient conditions</b>	
Environment class 3K2	DIN EN 60721-3-3
Environment class 2K2	DIN EN 60721-3-2
<b>Temperature</b>	
Operation (3K2)	15 °C .... 35 °C / 59 °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 (exception: underside in vertical operating position, see <a href="#">"Setting up the device", Page 16</a> )



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

# Index

## A

Alphanumeric keypad 32  
Anti-theft protection 41  
Audio input 26  
Audio output 26

## B

BIOS Setup Utility  
    calling 39  
    exiting 40  
    operating 40  
    settings 39  
Button,  
    ON/OFF switch 32

## C

Cable,  
    connecting 25  
    disconnecting 25  
CE marking 11  
Components  
    installing/removing 47  
Configuration, BIOS Setup Utility 39  
Connecting  
    USB keyboard 27  
Connecting a USB mouse 27  
Contents of delivery 14  
Cord  
    see Cable 25  
Ctrl+Alt+Del 33  
Cursor keys 32

## D

Data protection 40  
Device  
    Ports 26  
    setting up 16  
    Switching on 30  
Device,  
    switching off 30  
    transporting 9–10  
    upgrades 47  
Devices,  
    connecting 27

Disposal 10  
Drivers & Utilities DVD 10

## E

Electromagnetic compatibility 11  
Energy saving 10  
Ergonomic  
    Workstation 16  
External devices  
    Ports 26  
External devices,  
    connecting 27

## F

Function keys 32

## G

Getting started 14

## H

Handling  
    data carriers 36  
Hardware configuration 39

## I

Important notes 9  
Installing,  
    software 28–29  
    switching on for the first time 28

## K

Keyboard 32  
    Cursor keys 32  
    keyboard shortcuts 33  
Keyboard shortcuts 32  
Keyboard,  
    alphanumeric keypad 32  
    function keys 32  
    numeric keypad 32  
Keys 32  
    Ctrl 33  
    Ctrl+Alt+Del 33

**Keys,**

- Alt Gr 33
- Control 33
- Ctrl key 33
- cursor keys 32
- Enter 32
- Enter key 32
- menu key 33
- Num Lock 33
- Return 32
- shift 33
- shift key 33
- Start key 33

**L**

- LAN port 26
- Line out 26
- Low voltage directive 11

**M**

- Main memory
  - see Adding memory 59
- Mechanical backup 41
- Memory card
  - inserting 35
  - removing 35
- Memory expansion
  - installing 60
  - removing 60
- Memory module
  - important notes 59
  - installing 60
  - removing 60
- Monitor
  - connecting 26
  - Switching on 30
- Monitor port 26
- Monitor,
  - switching off 30

**N**

- Note
  - safety 9
- Notes
  - CE marking 11
  - important 9
- Numeric keypad 32

**O**

- ON/OFF switch 32
- Optical drive 36

**Overview**

- Device 5

**P**

- Packaging 14
- Packaging,
  - unpacking 14
- Password protection 42
- Ports 7, 26
- Power cable
  - connection 24
- Preparing for first use, overview 14
- Preparing for operation 24
- Preparing for use,
  - overview 14
- Property protection 40

**R**

- Recycling 10
- Removing memory
  - see Adding memory 59
- Retransportation 9–10

**S**

- Safety information 9
- Security Lock 41
- Security measures 40
- Servicing 47
- Setup
  - see BIOS Setup Utility 39
- Slot
  - Memory cards 34
- Software,
  - installing 28–29
- System configuration 39
- System expansion 47, 59
  - see Adding memory 59
- System settings, BIOS Setup Utility 39
- System unit, see Device 10

**T**

- Transportation 9–10

**U**

- Universal Serial Bus 26
- Upgrades,
  - device 47
- USB devices,
  - connecting 27
- USB port 27
  - connecting keyboard 27

USB port,	
connecting devices	27
User Documentation DVD	10
Using the Kensington Lock Cable	41
<b>W</b>	
Workstation	16