FUJITSU

Operating Manual

AMILO Notebook

English

Are there ...

... any technical problems or other questions you wish to discuss?

Please contact:

- our Hotline/Help Desk (see Help Desk list or visit: "http://ts.fujitsu.com/helpdesk")
- your sales partner
- your sales outlet

Additional information is contained in the Help Desk list and the "Warranty" manual.

You will find the "Warranty" manual on your device under *Startsymbol – Manual* or on our website.

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

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AMILO Notebook

Operating Manual

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Innovative technology

... and ergonomic design make your AMILO a reliable, convenient notebook.

Your notebook is available in several different versions. Most of the sections in this manual apply to all models – any differences are indicated separately. Some of the illustrations and features in this manual may differ from your model and are for guidance only. The "optional" components described in this manual are only available on some versions of the device and must be selected directly when purchasing. At the time of publication of this manual, it is not yet possible to state whether the "device-specific" components and functions described in this manual are available for your version of the device.

If you have purchased a notebook with a Microsoft Windows operating system, this is pre-installed and optimally configured for you. The notebook is ready to use immediately the first time you switch it on.

Your notebook features the very latest technology so that you get the best performance from your computing experience.

The user-friendly "BIOS Setup Utility" offers powerful password protection functions which can be used to control your notebook's hardware and protect your system better against unauthorised use.

For information about the connections and control elements of your notebook, please refer to the enclosed user manual entitled "Preparing for use".

Further information

General information about your AMILO Notebook can be found in the "AMILO Notebook" operating manual.

If there is ever a problem with your computer, please refer to the chapter "Help if problems occur", Page 74, which contains troubleshooting information.

The Windows drivers for your AMILO Notebook can be found on our Internet website. Fujitsu Technology Solutions accepts no liability whatsoever if any other operating system is used.

Software-related portions of this manual relate to Microsoft products if they are included with your AMILO Notebook.

Please refer to the relevant manufacturer's operating instructions when installing other software products.

"AMILO Notebook" Operating Manual

The operating instructions for the "AMILO Notebook" can be found on the Internet at "http://ts.fujitsu.com/support" or - if the Windows operating system came pre-installed on the system - in the Windows Start menu.

Notational conventions

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

Important notes

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

Safety information

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

Observe the sections in the manual marked with the symbol on the left.

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

Read the information on the ambient conditions in the technical data given in the "First-time setup" manual and the chapter "Preparing your notebook for use", Page 7 before preparing your notebook for use and switching it on for the first time.

When cleaning the device, please observe the relevant notes in the section "Cleaning the notebook", Page 6.

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

Please refer to the notes in the chapter "Removing and installing components during servicing", Page 63.

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

Energy saving

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

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

Energy saving under Windows

► Make use of the power management features (see ""Using the power-management features", Page 33").

Information sources

This manual contains more detailed instructions and technical information for your notebook. Manuals available only as PDF files can be printed out if you connect a printer to your notebook.

Information source	Type of information	Where?
"Safety" manual (printed and/or PDF file)	Safety information	Accessories kit and/or on your notebook
"Recovery Process" manual (printed and/or PDF file)	Information on restoring the operating system, drivers, manuals and special software	Accessories kit, on your notebook or on our website at: "http://ts.fujitsu.com/support/"
"Preparing for use" manual (printed)	Instructions on preparing the device before using it for the first time, technical information	
"Warranty" manual (PDF file)	General guarantee conditions	The manuals are located on your notebook under *Startsymbol – Manual* or in some cases, updated versions can be found on our website at: "http://ts.fujitsu.com/support/".
information files (e.g. **.TXT, *.DOC, *.CHM, *.HLP*)	Information on utilities and programs	
information files (e.g. **.TXT, *.DOC, *.CHM, *.HLP*)	Information on the operating system	In the software for these applications
information files (e.g. **.TXT, *.DOC, *.CHM, *.HLP*) or Windows help [F1].	Information on Wireless LAN	In the software/application of the wireless LAN router from your Internet provider or Windows help [F1].

Travelling with your notebook

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

Before you travel

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

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

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

When travelling in other countries

- ► If you are travelling abroad, check that the mains adapter can be operated with the local mains voltage. If this is not the case, obtain the appropriate mains adapter for your notebook. Do not use any other voltage converter!
- ► Check whether the local power supply and the specifications of the power cable are compatible. If this is not the case, buy a power cable that matches the local conditions. Do not use a connection adapter for electrical devices to connect the notebook.
- ► Enquire with the corresponding government office of the country you will be travelling in as to whether you may operate the radio component integrated in your notebook there (see also "CE marking", Page 80).
- ► If you are planning to use a modem, please be aware that it may not necessarily be compatible with the local telephone system. This may result in poor performance, or the modem may not work at all. You may require a country-specific telephone adapter (available as an optional accessory).

Notebook: transporting

A placeholder must occupy the ExpressCard slot. This will prevent any foreign bodies from entering the notebook via the slot.

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

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

Cleaning the notebook

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

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

Ensure that no liquid enters the notebook.

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

- ► Switch the notebook off.
- ► Remove the mains plug for the mains adapter from the mains socket.
- ► Remove the battery (see Chapter "Removing and installing the battery", Page 30).

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

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

Preparing your notebook for use

Refer to the "Important notes", Page 3 chapter.

If your notebook comes with a Windows operating system then all of the necessary hardware drivers and the supplied software will already be pre-installed.

Depending on the hardware and software configuration, the first-time setup for the Microsoft Windows operating system can take up to 20 minutes.

When you switch on the notebook for the first time it will perform a system check. A number of different messages may be displayed. In the process, the display may flicker or darken temporarily.

Please follow the instructions on the screen.

It is very important that you do not switch the notebook off during this initial set-up process.

Before you can use your notebook for the first time you will need to charge the battery.

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

When not plugged into a mains socket, the notebook runs on its built-in battery. You can increase the battery's life by enabling the system's energy saving functions.

If you use the notebook in at home or in an office, we recommend you use the mains adapter instead of the battery.

Please refer to the "AMILO Notebook" operating manual for instructions on how to connect external devices (e.g. a mouse or a printer) to the notebook..

Unpacking and checking your notebook

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

- ► Unpack all the individual parts.
- ► Check your notebook for damage incurred during transportation.

We recommend that you keep the original packaging material.

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

Selecting the location

Select a suitable location for the notebook before setting it up. Consider the following points when selecting a location:

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

Connecting the mains adapter

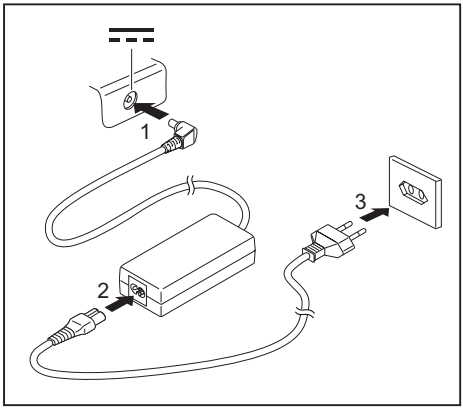
Follow the instructions in "Safety information", Page 3.

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

The mains cable of the mains adapter must only be connected to a mains socket if the notebook is connected to the mains adapter.

Check that your mains supply is capable of supplying the power required by the mains adapter (refer to the information printed on the mains adapter and the technical data for the mains adapter in the "Preparing for use" manual).

For more information, please refer to the "Preparing for use" manual for your notebook.



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

Switching the notebook on for the first time (devices with pre-installed Windows operating system)

We recommend that the notebook is supplied with power through the mains adapter during this procedure.

When you switch your notebook on for the first time, the supplied software is installed and configured. Due to the fact that this installation procedure must not be interrupted, you should set aside enough time for it to be fully completed and connect the notebook to the mains outlet using the mains adapter.

During installation, the notebook must only be rebooted when you are requested to do so!

You will be prompted to create a backup copy of the pre-installed operating system. This backup copy can be used later to restore your notebook to its delivery configuration.

You can find information on how to restore the operating system, drivers, manuals and special software in the Recovery Process manual.

Your operating system is pre-installed on the hard disk to facilitate the procedure when you use your notebook for the first time.

- ► Switch the notebook on (see "Notebook switching on", Page 11).
- ► During installation, follow the on-screen instructions.
- ↳ Consult the operating system manual if anything is unclear about the requested input data.

If a Windows operating system is installed on your notebook, you will find additional information on the system as well as the drivers, help programs, updates, manuals, etc. on your notebook, or you can order it via our website (see "Information sources", Page 4).

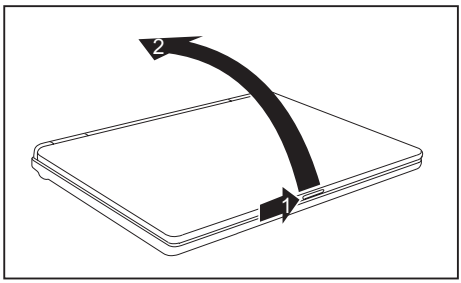
Working with the notebook

This chapter describes the basics for operating your notebook. Please read the chapter entitled "Connecting external devices", Page 55 for instructions on how to connect devices such as a mouse and a printer to the notebook.

Please refer to the notes in "Important notes", Page 3.

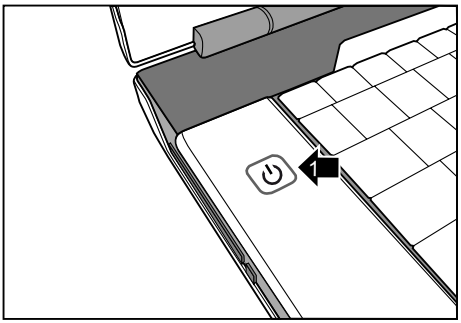
Notebook switching on

Devices with a release mechanism



► Slide the release button in direction of the arrow (1) and fold the LCD screen upwards (2).

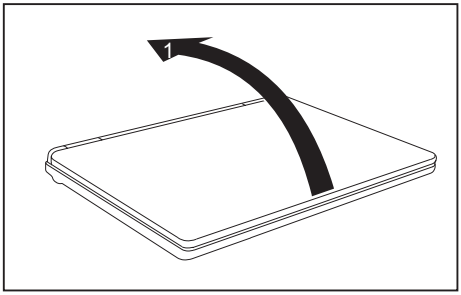
The position of the on/off switch may vary from device to device.



► Press the ON/OFF switch (1) for approximately 1 second to switch on the notebook.

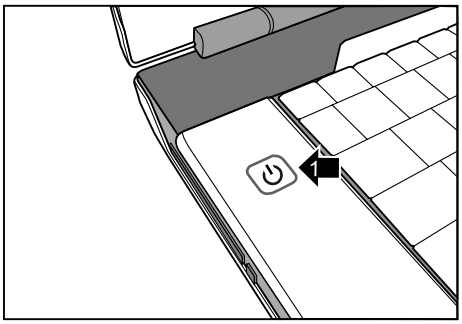
↳ The power-on indicator of the notebook glows.

Devices without a release mechanism



► Fold up the LCD screen (1).

The position of the on/off switch may vary from device to device.

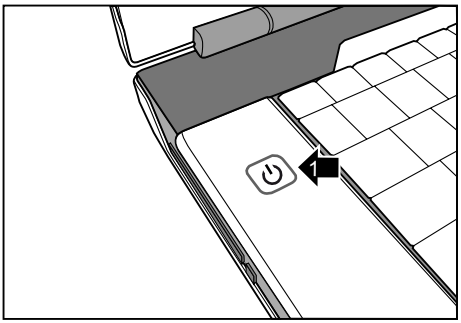


► Press the ON/OFF switch (1) for approximately 1 second to switch on the notebook.

↳ The power-on indicator of the notebook glows.

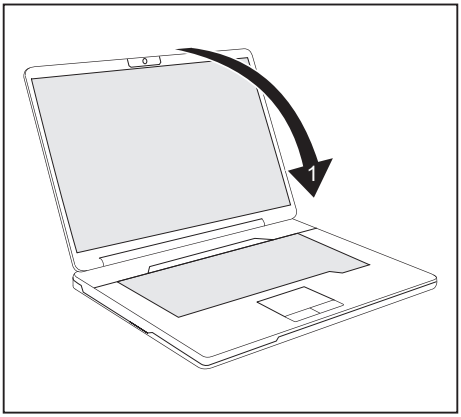
Notebook: switching off

The position of the on/off switch may vary from device to device.



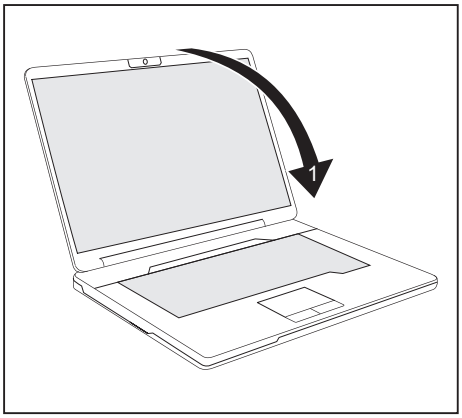
- ► Shut down the operating system properly (in Windows via the *Start* menu by clicking *Start Symbol – Shut Down – Shut Down – OK*).
- ► If the notebook is not switched off automatically, press the ON/OFF switch (1) for approx. five seconds.

Devices with a release mechanism



- ► Close the LCD screen (1) until you feel it click and engage.

Devices without a release mechanism

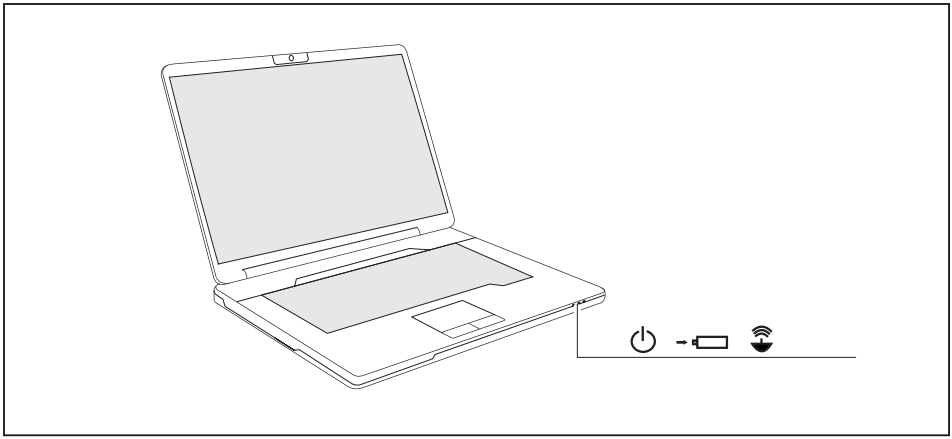


► Close the LCD screen (1).

Status indicators

The status indicators provide information about the status of the power supply, the drives and the keyboard functions. Three indicators are visible when the device is closed: Power-on indicator, wireless LAN indicator, battery indicator

Depending on the model, the status indicators on your device may be in a different order to that shown below.



Power-on indicator / Standby

Rechargeable battery indicator

Wireless LAN indicator

Power-on indicator / Standby

- Indicator is on: The notebook is switched on.
- Indicator flashes: The notebook is in standby mode.
- Indicator is off: The notebook is switched off.

Rechargeable battery indicator

The battery charge status is shown by the rechargeable battery indicator.

- The indicator is blue: The battery is fully charged, the mains adapter is connected.
- Indicator flashes blue: the battery is charging.
- Indicator flashes red: the battery is nearly empty.
- Indicator is off: The battery is empty (the notebook is switched off) or the notebook is being run without a mains adapter and the battery is not fully charged.

Wireless LAN indicator

- The indicator is blue: The wireless LAN module is switched on.
- Indicator is off: The wireless LAN module is switched off.

On-Screen display (OSD)

Your AMILO is equipped with an on-screen display (OSD).

Various keyboard inputs, e.g. changes to the volume or screen brightness or activation of the Caps Lock function, are displayed directly by the OSD.

Keyboard

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

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

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

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

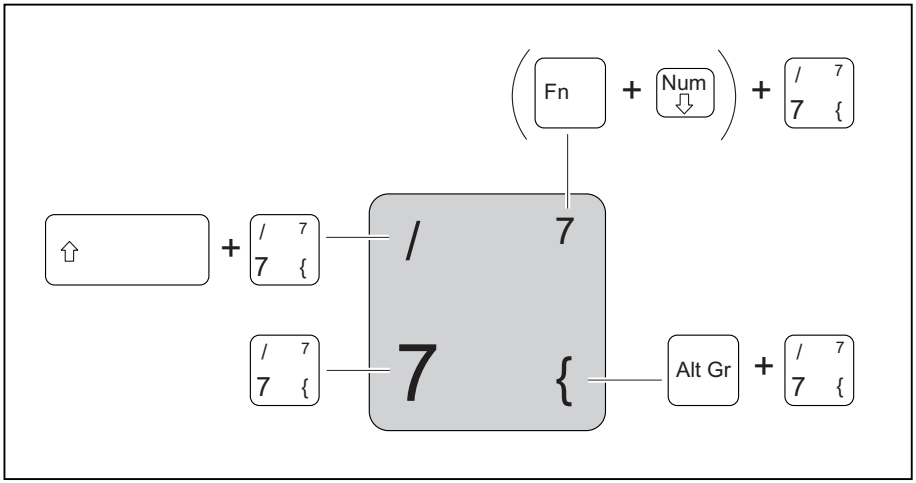
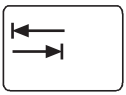


Illustration (general example of German keyboard layout)

Backspace key
The Backspace key deletes the character to the left of the cursor.



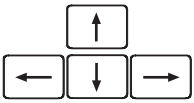
Tab key
The Tab key moves the cursor to the next tab stop.

Enter key (return)
The Enter key terminates a command line. The command you have entered is executed when you press this key.

Caps Lock key
The Caps Lock key activates the Caps Lock mode, and the corresponding icon is displayed in the Windows information area. In Caps Lock mode, all of the characters you type appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear when that key is pressed. To cancel the Caps Lock function, simply press the Caps Lock key again.

Shift key
The Shift key causes uppercase characters to appear. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.

Fn button
The Fn key enables the special functions indicated on overlay keys (see "Key combinations", Page 19).



Cursor keys
The cursor keys move the cursor in the direction of the arrow, i.e. up, down, left, or right.

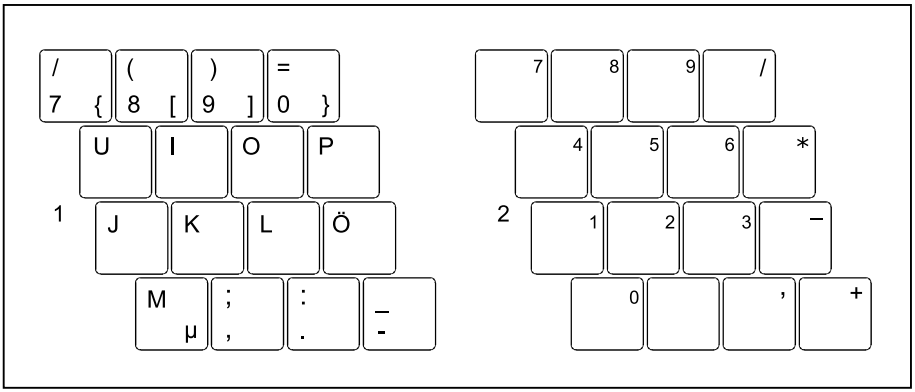
Start key
The Start key opens the Windows Start menu.

Menu key
The Menu key opens the menu for the selected item.

Virtual numeric keypad (notebooks without separate numeric keypad)

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

Illustration (the example shows a German keyboard layout):



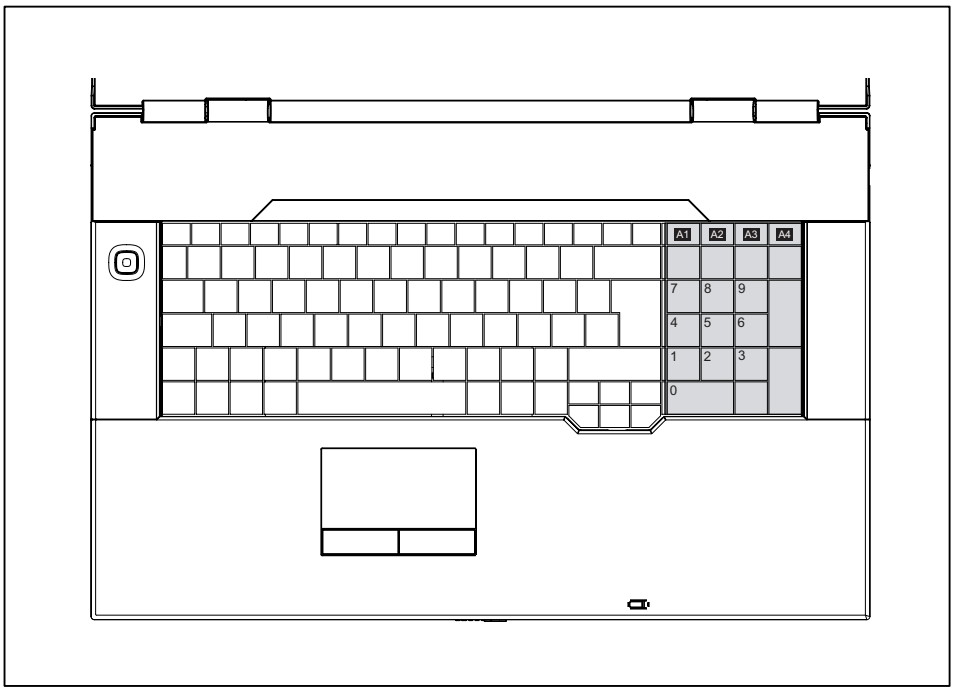
1 = Valid characters when the Num key is not activated

2 = Valid characters when the Num key is activated

Separate keypad with application buttons (device-dependent)

Depending on the configuration of your notebook, the keyboard may have a separate numeric keypad with four application buttons. You can assign a function to these keys and by pressing the relevant button, for example, you can access a previously defined file on your computer, an Internet page or your e-mail account.

The four application buttons are located on notebooks on a separate keypad directly above the numeric keypad.



For information on how to change the keyboard configuration and about the related software installed on your device, please refer to the Initial Operation manual.

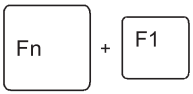
Key combinations

The following description of key combinations applies to Windows operating systems. Some of the following key combinations may not function in other operating systems or with certain device drivers.

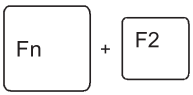
Other key combinations are described in the relevant manuals supplied with your application programs.

Key combinations are entered as follows:

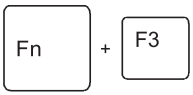
- ► Press and hold the first key in the combination.
- ► While holding the first key down, press the other key or keys in the combination.



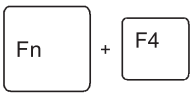
Switching WLAN/Bluetooth on/off
You can use this key combination to switch on or off the WLAN or Bluetooth functionality of your notebook.



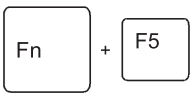
Switching the TV tuner on/off (device-dependent)
You can use this key combination to switch the TV tuner on and off.



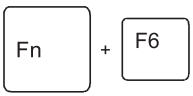
Switching the loudspeaker on and off
This key combination switches your notebook's loudspeaker off and on.



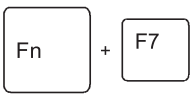
Decrease volume
This key combination reduces the volume of the integrated loudspeakers.



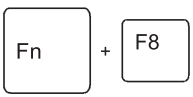
Increases volume
This key combination increases the volume of the integrated loudspeakers.



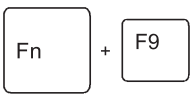
Touchpad and touchpad buttons, switching on/off
This key combination switches the touchpad and the touchpad buttons on or off.



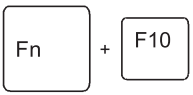
Switching the camera on/off
Use this key combination to switch on or off the integral webcam of the notebook.



Decrease screen brightness
This key combination decreases the brightness of the screen.



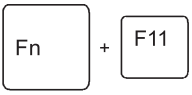
Increase screen brightness
This key combination increases the brightness of the screen.



Toggle output screen
Use this key combination to select which screen(s) is/are used for display if an external monitor is connected.

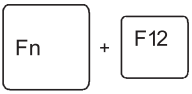
You can opt to use:

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

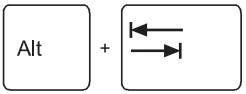


Switching Silent Mode on/off
Changing into Silent Mode (whisper mode).

To lower the noise level of the drive, the rotating speed is reduced.

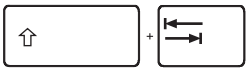


Enabling/restoring from suspend mode
Use this key combination to switch suspend mode on/off.



Switch between open applications
Use this key combination to switch between several open applications.

Perform warm reboot
This key combination restarts the notebook. First, press and hold both the Ctrl and Alt keys, then press the Del key. First of all the Task Manager will be displayed. You must then press all three keys again to reboot.



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

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

Country and keyboard settings

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

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

Quick Start buttons

Your notebook is equipped with quick start buttons. The following description of the quick start buttons applies to Windows operating systems.

Depending on configuration, there may be a variety of quick start buttons on your AMILO Notebook.

You can start the following applications or functions by pressing a single key.

Silent Mode (whisper mode)
This key reduces the speed of the fan.

When the Silent Mode is switched on, the processor and graphics do not operate at the full performance level.

Internet
With this button you can start your default Internet browser.

Hybrid VGA
This key allows you to switch between an external and an internal graphics card.

ODD eject
This key allows you to eject a CD/DVD from the drive.

Mute
This key switches the loudspeakers of your AMILO Notebook on and off.

Multimedia
You can use this button to launch the software for playing back multimedia files which is installed on your system.

Play/Pause
This key allows you to pause and resume the playback in your multimedia player. The playback then resumes at the point where it was paused.

Skip reverse, Skip forward
You can use these keys to skip to the previous or next title in your multimedia player.

Stop
This key allows you to stop or restart the playback in your multimedia player.

Playback will then restart from the beginning of the item.

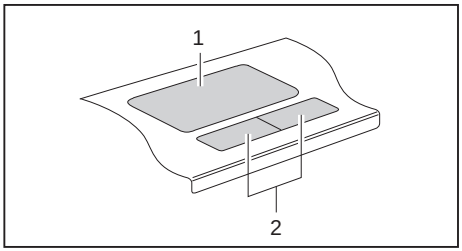
Volume
This key allows you to set the volume level of your AMILO Notebook during replay.

Touchpad and touchpad buttons

Keep the touchpad clean. Protect it from dirt, liquids, and grease.

Do not use the touchpad if your fingers are dirty.

Do not rest heavy objects (e.g. books) on the touchpad or the touchpad buttons.



1 = Touchpad

2 = Touchpad buttons

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

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

Using touchpad buttons

Moving the pointer

► Move your finger on the touchpad.

↳ The pointer will move accordingly.

Selecting an item

► Move the pointer to the item you wish to select.

► Tap the touchpad once or press the left button once.

↳ The item is selected.

Executing a command

► Move the pointer to the field you wish to select.

► Tap the touchpad twice or press the left button twice.

↳ The command is executed.

Dragging an item

► Select the desired item.

► Press and hold the left button and drag the item to the desired position with the finger on the touchpad.

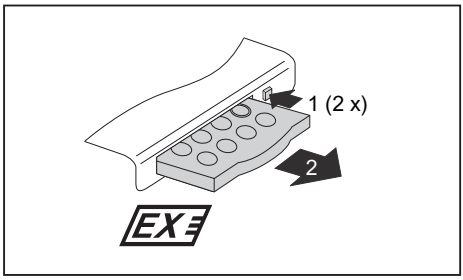
↳ The item will be moved.

Multimedia remote control (device dependent)

Before using the remote control for the first time, pull out the transparent film from the battery contacts.

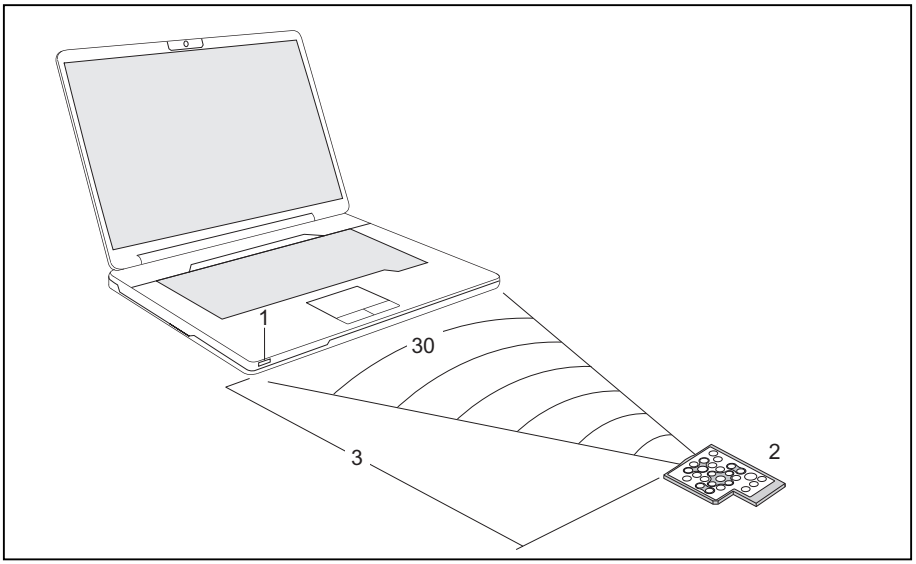
Further information can be found in the *Windows* online manual (section "Information sources", Page 4).

Removing remote control



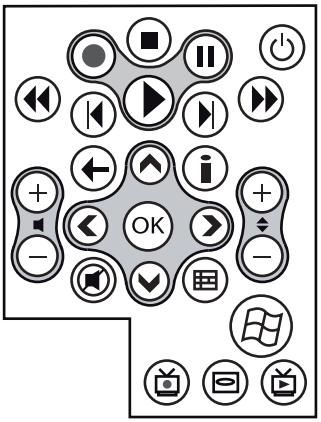
- ► Press the eject button (1) twice, until the remote control projects slightly from the ExpressCard slot.
- ► Pull the remote control out of the ExpressCard slot (2).

Using the remote control



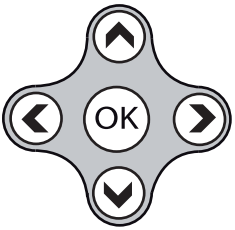
The remote control (2) must be in the effective range (horizontally approx. 30°) of the notebook's CIR interface (1). Use the remote control within the reception zone (3) of the CIR interface. The range (3) may vary depending on the effective angle to the CIR interface.

Buttons



Navigation key
The navigation key scrolls within the menus (up, down, left and right).

► The "OK" key activates the selected menu entries.



Energy saving mode On/Off switch (S3)
Use this key to switch the notebook to energy saving mode (S3) or to leave energy saving mode (S3).

Rec
This key records the current television programme on the hard disk of your device.

Stop
This key ends the current playback.

Pause
This key pauses the current playback.

Rewind
This key rewinds the playback.

Jump back
This key starts playback of the previous track, picture or previous film sequence.

Replay
This key starts the playback.

Jump forward
This key starts playback of the next track, picture or next film sequence.

Fast forward
This key advances the playback.

Information
This key gives you extra information on multimedia applications.

Back
This key takes you to the previous menu.

Mute key
This key switches the sound playback on and off.

Change channel
This key changes the television channel.

Increase/decrease volume
This key increases or decreases the volume.

Replay recording
This key replays the television programmes stored on the hard drive of the device.

Live TV
This key changes from the replay of recorded television programmes to the current television programme on the chosen television channel.

The key can only be used when a correctly adjusted TV tuner is connected.

TV Programme Overview
Use this key to open the TV Programme Overview.

The TV Programme Overview is not yet available from all TV networks in all countries.

The key can only be used when a correctly adjusted TV tuner is connected.

Start
Use this key to call up the Windows Vista Start menu

DVD menu
This key starts the main menu of a DVD which is loaded in the drive.

LCD screen

Information on LCD screen

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

The expression "monitor resolution" is used to describe the number of horizontal and vertical pixels ("picture elements") which make up the monitor display. For example, "WUXGA" stands for 1920 x 1200 pixels. Each pixel consists of three so-called subpixels of the colours red, green and blue. As a result, a WUXGA monitor consists of 1920 x 1200 x 3 = 6,912,000 subpixels.

Screen resolutions	Number of pixels
CGA	320 x 200
QVGA	320 x 240
VGA	640 x 480
NTSC	720 x 480
PAL	768 x 576
SVGA	800 x 600
WVGA	854 x 480
SWVGA LCD (e.g. AMILO Mini)	1024 x 600

XGA	1024 x 768
HD 720	1280 x 720
WXGA	1280 x 768
SXGA	1280 x 1024
HD	1366 x 768
SXGA+	1400 x 1050
WXGA+	1440 x 900
WSXGA (Wide SXGA)	• 1600 x 900 (16:9 monitor) • 1600 x 1024 (16:10 monitor)
UXGA	1600 x 1200
HD+	1680 x 945
WSXGA+ (Wide SXGA plus)	1680 x 1050
Full HD 1080	1920 x 1080
WUXGA	1920 x 1200
QXGA	2048 x 1536
WQXGA	2560 x 1600
QSXGA	2560 x 2048

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

Permanently unlit or lit pixels

The standard of production techniques today cannot guarantee an absolutely fault-free screen display. A few isolated constant lit or unlit pixels may be present. The maximum permitted number of pixels faults is stipulated in the strict international standard ISO 13406-2 (Class II).

Example:

A 15" LCD screen monitor with a resolution of 1280 x 800 has 1280 x 800 = 1,024,000 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 3 million subpixels in total. According to ISO 13406-2 (Class II), a maximum of 4 pixels and 5 subpixels may be defective, i.e. a total of 17 defective subpixels. That is approx. 0,0005 % of the entire subpixel!

Background lighting

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

Screen settings

Setting the resolution

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

Changing the font size

You can choose between a larger and a smaller font.

► Right-click on the desktop. Enter your settings by clicking *Personalization – Adjust Font Size (DPI)* (in the left pane) – *Continue*.

or

► Enter your settings by clicking *Start – (Settings) – Control Panel – Appearance and Personalization – Personalization – Adjust Font Size (DPI)* (in the left pane) – *Continue*.

Synchronising the display on the LCD screen and an external monitor

Your notebook supports simultaneous display on the LCD screen and an external monitor. Pressing the key combination Fn + F10 switches between LCD monitor only, external monitor only and LCD and external monitor. The last setting is useful if you would like a high resolution and a high refresh rate on an external monitor.

Webcam

Your notebook is equipped with a WebCam. Depending on the software used, you can take pictures, record video clips or take part in web chats.

- The picture quality depends on the lighting conditions and the software being used.
- You can enable and disable the webcam using the key combination Fn + F7.
- You can only used the WebCam with a particular application (e.g. an Internet telephony program or a video conferencing program which supports WebCams).
- When using the webcam the notebook support must not wobble.
- The webcam automatically adjusts itself to the current light level. For this reason the LCD screen may flicker while the light level is adjusted.

Further information on use of the WebCam and additional settings can be found in the Help function of the program which uses the Webcam.

The webcam LED indicates the status of the webcam.

- LED lights up blue: The WebCam is switched on.
- The LED lights up red: The WebCam software is accessing the WebCam (displays an image or records an image sequence).

Battery

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

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

It is possible to extend the time that your notebook will operate under battery power. To do this, we recommend that you should switch off the *Windows Vista Aero* graphics user interface while operating under battery power.

► Select *Startsymbol – (Settings) – Control Panel– Appearance and Personalization – Screen colour and appearance – Open the Properties for Classical Appearance to set further options* and select – *Basic Windows Vista* – or – *Standard Windows* – or – *Classic Windows* – to switch off *Windows Vista Aero*.

Charging, caring for and maintaining the battery

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

You can charge the battery by connecting the notebook to the mains adapter (see "Connecting the mains adapter", Page 9).

You can increase the life of your battery by allowing it to fully discharge before recharging it again. To do this, leave your notebook turned on when it is operated with the battery. Once the battery is running low you will hear a warning alarm. If you do not connect the mains adapter within five minutes of the warning alarm described above, your notebook will automatically switch off.

monitoring the battery charging level

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

Battery storage

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

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

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

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

Removing and installing the battery

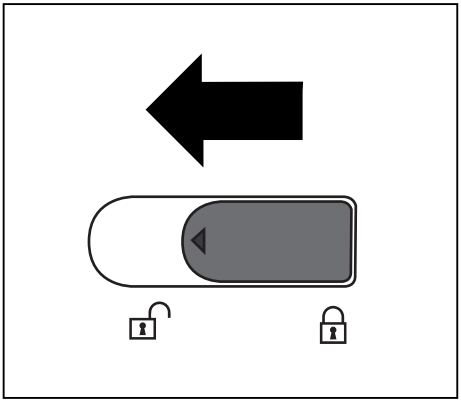
Only use rechargeable batteries approved by Fujitsu Technology Solutions for your notebook.

Never use force when fitting or removing a battery.

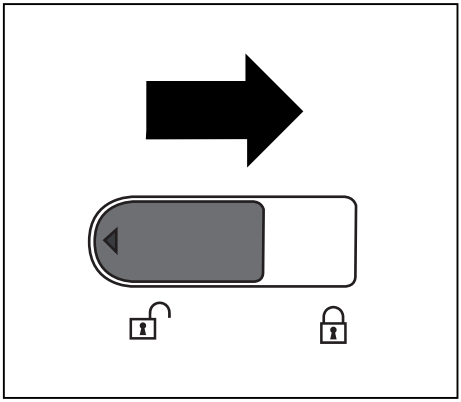
Make sure that no foreign bodies get into the battery connections.

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

Positions of the battery locks:



The battery is released.

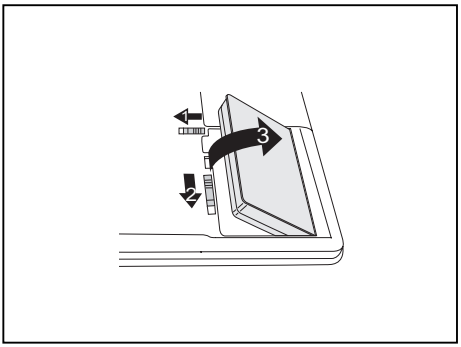


The battery is locked.

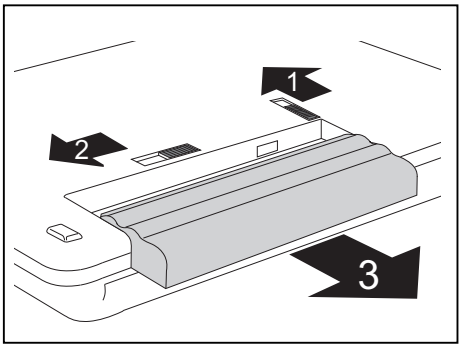
Removing the battery

The actual position of the battery compartment and the battery locks may differ from those shown in the following illustrations.

Device with fold-out battery:



Device with pull-out battery:

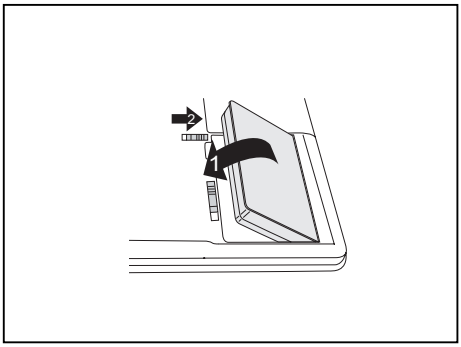


- ► Push the battery lock (1) in the direction of the arrow.
- ► Slide the battery lock (2) in the direction of the arrow and hold it in place.
- ► Remove the battery from the battery compartment (3).

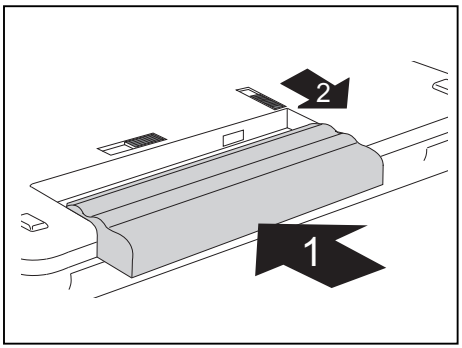
Installing the battery

The actual position of the battery compartment and the battery locks may differ from those shown in the following illustrations.

Device with fold-out battery:



Device with pull-out battery:



- ► Insert the battery in the battery compartment (1).
- ► Carefully push the battery into the battery compartment until it can be felt to engage.
- ► Push the battery lock (2) in the direction of the arrow.

Using the power-management features

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

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

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

Under Windows Vista the *Energy saving* mode is active as the default setting.

We recommend the following settings:

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

- ► Activate the power-management features with *Start – (Settings) – Control Panel – Mobile PC – Power Options*.
- ► Activate the screen saver by clicking *Start – (Settings) – Control Panel – Appearance and Personalization – Personalization – Change screen saver*.

or

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

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

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

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

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

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

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

Hybrid graphics (device-dependent)

If your Notebook is equipped with a hybrid graphics solution, you can switch between battery-saver and performance mode by clicking the Quick Start button.

Use the graphics unit integrated in the chip set for applications which are less graphics-intensive, such as video playback, e-mail and Internet surfing. This reduces heat generation, noise levels and power consumption. As a result, battery life is increased (battery saver mode).

If you require a high level of performance, for example, for games, you can switch to the external graphics unit (performance mode).

Change graphics mode

In your notebook, the external graphics mode is preconfigured ex works (performance mode).

A device connected to an HDMI port of your notebook (FullHD resolution, device-dependent) can only be activated in performance mode via the external graphics unit.

If programs are active which influence the output of graphics (e.g. games or TV software), it may not always be possible to switch between the modes. Close the relevant programs before switching over.

The process of switching between modes can take several seconds.

► Click the Quick Start button Hybrid VGA on the Multimedia Board of your notebook:
↳ The graphics display switches to battery-saver mode.
► Click the Quick Start Hybrid VGA button again.
↳ The graphics display switches to performance mode.

ExpressCards (optional)

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

Consult the documentation supplied by the ExpressCard's manufacturer and follow the instructions provided.

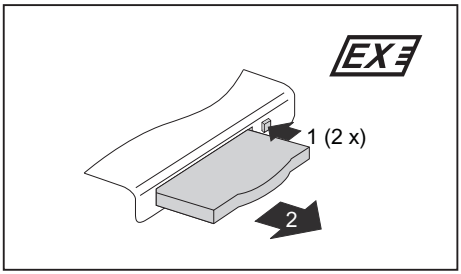
Never use force when installing or removing an ExpressCard.

Make sure that no foreign objects enter the ExpressCard slot.

Inserting the ExpressCard

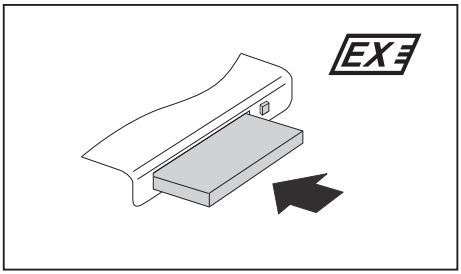
Keep the placeholder for the ExpressCard in a safe place. If you decide to remove the ExpressCard again you will need to insert the placeholder for the ExpressCard into the slot again. This prevents foreign objects from getting into the ExpressCard slot.

► If the eject button is lowered, you must first cause the eject button to release from the notebook casing. To do this, press the eject button until it pops out.



► Press the eject button (1) twice to make the placeholder for the card protrude from the notebook's case.

► Pull the placeholder for the ExpressCard out of the slot (2).



► Insert the ExpressCard in the slot guide with the connection contacts first.

► Gently push the ExpressCard into the slot either until it will go no further or you feel it engage. Do not use excessive force.

Depending on the particular type used, the ExpressCard may protrude slightly from the ExpressCard slot.

Please refer to the documentation for the ExpressCard for driver installation instructions.

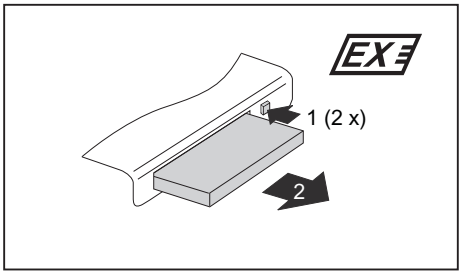
ExpressCard removing

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

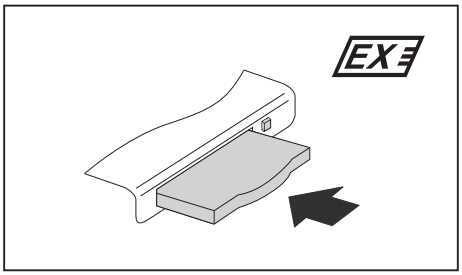
You can stop the ExpressCard using the corresponding symbol in the task bar:

- ► Left-click on the icon.
- ► Select the ExpressCard 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 ExpressCard.



- ► Press the eject button (1) twice, until the ExpressCard projects slightly from the notebook.
- ► Pull the ExpressCard out of the slot (2).



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

Memory cards

Your notebook is equipped with an integrated memory card reader. It supports the following formats:

Without adapter:

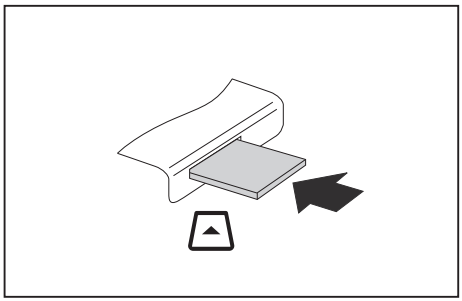
- Secure Digital (SD™ card)
- SDHC
- MultiMediaCard (MMC)
- Memory Stick / Memory Stick pro (Sony®)
- xD-Picture Card™

With adapter:

- RS-MMC
- MMC-Micro
- miniSD
- MicroSD
- MS-Duo
- MS-PRO Duo
- MS-PRO HG
- MS-PRO HG Duo
- M2

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

Inserting the memory card



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

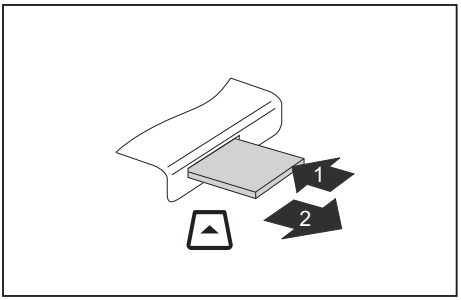
↳ Depending on the particular type used, the memory card may protrude slightly from the slot.

Removing the memory card

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

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

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



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

Hard disk

The hard disk is the most important storage medium of your notebook. You can work considerably faster and more efficiently if you copy applications and files from external data carriers, such as CDs/DVDs or USB storage media, to your hard disk.

Second hard disk in RAID group (device-dependent)

Removal and installation of the second hard disk must only be performed by authorised service agents of Fujitsu Technology Solutions GmbH. Unauthorised removal and installation will invalidate your warranty.

You will find further information and the addresses of our service partners on the Internet under "http://ts.fujitsu.com/support".

RAID (Redundant Array of Independent Disks, also: Disk Array) is a procedure for combining two hard disks to create a logical unit.

A so-called disk array can be used advantageously to improve performance or alternatively to improve error tolerance (data protection).

Error tolerance is facilitated by means of data redundancy. If one drive malfunctions, a different drive contains an exact copy of the data. This can prevent an operating system from malfunctioning or data from being lost.

The operating system detects all hard disks in a disk array as a single physical hard disk. The individual disk drives in a disk array are called "members". Member configuration information is recorded in the reserved sector of the hard disk. With this information the hard disk can be identified as a member.

There are usually a few methods by which hard disks can be combined. These methods are referred to as different RAID levels. The different RAID levels represent different performance and security levels as well as implementation costs.

Depending on the size of the hard disk, the process for combining two hard drives to create a RAID group can take several hours. During this time period, your screen will turn black.

For further information about how to configure your RAID system, refer to the Help function of the RAID Manager software on your device.

RAID level	Number of hard disk drives	Capacity	Benefits
RAID 0 (Striping)	2	Number of hard drives x smallest size	Highest performance without data protection
RAID 1 (Mirroring)	2	Smallest size	Data protection
SPAN (JBOD)	2	Up to 4, total of all hard disk drives	No performance advantages, no data protection

RAID 0 (Striping)

Reads and writes sectors of data interleaved between multiple drives.

RAID 0 does not support fault tolerance. If one hard drive fails, the entire disk array is affected by the data loss.

RAID 0 is designed to deliver optimum performance. The disk array data capacity is equal to the number of hard disks times the smallest hard disk capacity. The block size can be set to be between 4 kB and 128 kB.

RAID 1 (Mirroring)

Writing identical data on both hard disk drives (redundancy, mirroring) and parallel reading mode.

If one of the mirrored hard disks fails or no longer reacts due to a mechanical fault, the remaining hard disk assumes the function. This protects the data from being lost.

Due to this redundancy, the data capacity of the disk array is equivalent to the capacity of the smallest hard disk.

SPAN (JBOD)

With SPAN disk array, the data capacity is equivalent to the sum of all hard disks used. These hard disks can be of different sizes. The operating system treats the hard disk drives as if they were one hard drive.

"Spanning" means that the data is stored on a hard disk drive until this is full. As soon as the hard drive is full, the data continues to be stored on the next hard disk drive in the disk array. If one hard drive fails, the entire disk array is affected. SPAN (JBOD) actually does not belong to RAID and does not support any error tolerance.

Intel® Call up Matrix Storage Manager and Help function

To call up the *Intel® Matrix Storage Manager* program and the Help function, proceed as follows:

► Select *Start - All Programs - Intel® Matrix Storage Manager - Intel® Matrix Storage Manager Console*.
↳ The programme is started.
► In the upper menubar, click on *Help*.
► Select *Contents and Index*.
↳ The Help function for the *Intel® Matrix Storage Manager* program is called up.

Start the AMD RAIDXpert program and call up the Help function.

► Call up the *AMD RAIDXpert* program by choosing *Start - All Programs - AMD - RAID - RAIDXpert*.
► Confirm the confirmation prompt by clicking *Continue*.
► Enter "admin" for both the login ID and the password.
► Press the "Enter" key.
↳ The *AMD RAIDXpert* program starts.
► Click the *Help* button at the top right-hand corner of your screen.
↳ The Help function for the *AMD RAIDXpert* program is called up.

CD/DVD/Blu-ray disc

CD/DVD data storage media (certain devices only)

CD/DVD drives can either only read or both read and write different CDs or DVDs. The meaning of the respective CD and DVD types is described in the following:

CD-ROM

Abbreviation for Compact Disc - Read Only Memory. A CD-ROM is an optical data storage medium that can contain a maximum of 700 Mbytes. These data cannot be changed.

CD-R

Abbreviation for Compact Disc Recordable. A CD-R is an optical data storage medium that can only be written once with a maximum of 700 Mbytes of data. Then these data cannot be changed, but can be read as often as desired.

CD-RW

Abbreviation for Compact Disc ReWriteable. A CD-RW is an optical data storage medium that can be written with a maximum of 700 MByte of data a virtually unlimited number of times. This means the data can be deleted and changed.

DVD (DVD-ROM and DVD video)

Abbreviation for Digital Versatile Disc. A DVD is an optical data storage medium that can contain a maximum of 17 GBytes of data. These data cannot be changed.

DVD+R/DVD-R

Abbreviation for Digital Versatile Disc Recordable. A DVD+R or a DVD-R is an optical data storage medium that can only be written once with a maximum of 4.7 Gbytes of data. Then these data cannot be changed, but can be read as often as desired.

DVD+R and DVD-R are different standards. DVD+Rs and DVD-Rs can only be written by drives which support the respective standard.

DVD+RW/DVD-RW

Abbreviation for Digital Versatile Disc. A DVD+RW or a DVD-RW is an optical data storage medium that can be written with a maximum of 4.7 GBytes of data virtually an unlimited number of times. This means the data can be deleted and changed.

DVD+RW and DVD-RW are different standards. DVD+RWs and DVD-RWs can only be written by drives which support the respective standard.

DVD+R DL/DVD-R DL (Double Layer)

Abbreviation for Digital Versatile Disc Recordable Double Layer. A DVD+R DL or a DVD-R DL is an optical data storage medium that can only be written once with a maximum of 8.5 GBytes of data. Then these data cannot be changed, but can be read as often as desired.

DVD-R LF (with Label Flash support)

Abbreviation for Digital Versatile Disc Recordable Label Flash. A DVD-R LF is an optical data storage medium that can only be written once with a maximum of 4.7 GBytes of data. Then these data cannot be changed, but can be read as often as desired. This type of data carrier is suitable for direct labelling with Label Flash.

Blu-ray

This data format can only be read or written by Blu-ray drives.

Blu-ray is an optical storage medium which comes in three different types:

- BD-ROM: These data cannot be changed, but can be read as often as desired.
- BD-R: The data memory can only be written once. Afterwards the data can be read as often as desired.
- BD-RE: The data memory can be written and re-written virtually any number of times, so the data can be deleted and/or changed.

The maximum memory capacity is 25 - 50 GBytes of data (25 GBytes per memory layer).

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 the data carrier in its case. This will prevent the data carrier from being damaged.
- Protect your data carriers against dust, mechanical vibrations and direct sunlight.
- Avoid storing a data carrier in areas subject to high temperatures or humidity.

In order to make use of the full recording speed of your drive, please use blank disks marked "Multispeed" or "High Speed".

CD/DVD/Blu-ray drives (device-dependent)

Your notebook is equipped with a multi-format DVD drive with double layer support.

Please ask your local computer store for assistance if you are not sure which CD or DVD type suits best for your needs, e. g. backing up data, recording films, storing pictures etc..

Multi-format DVD burner with double layer support

With the multi-format DVD burner with double layer support you can read all optical data storage media named above. You can also write CD-Rs, CD-RWs, DVD+Rs, DVD+RWs, DVD-Rs, DVD-RWs and DVD+R DLs.

Blu-ray drive (drive-dependent)

Your notebook's Blue-ray drive will allow you to enjoy high-definition films with a previously unparallelled quality. For maximum enjoyment we recommend connecting an external monitor via the HDMI port of your AMILO.

Further information can be found in "HDMI port (device-dependent)", Page 57.

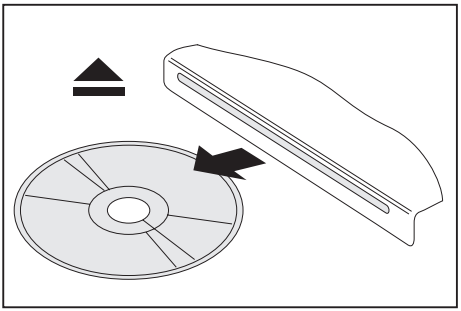
Inserting or removing a data carrier

The notebook must be switched on.

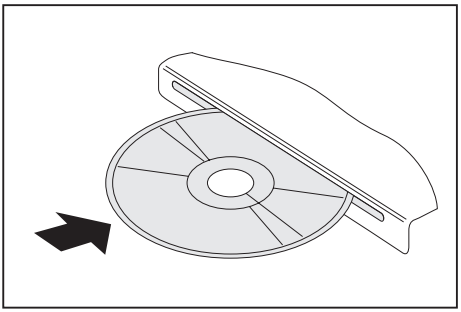
- Never use force when inserting or removing a data carrier.
- Do not use mini CD/DVDs.
- Make sure that no foreign objects enter the drive slot.
- It does not constitute grounds for a claim under warranty if foreign bodies enter the drive slot or the data carrier cannot be removed as a result of improper handling. You will need to have the foreign body removed by one of our authorised and certified service centres, for which there will be a charge.

Inserting or removing a data carrier (slot)

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

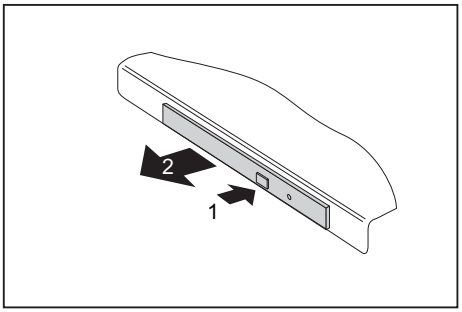


► If there is a data carrier in the drive, press the "ODD eject" sensor button (see also " Quick Start buttons", Page 22) and remove the data carrier.

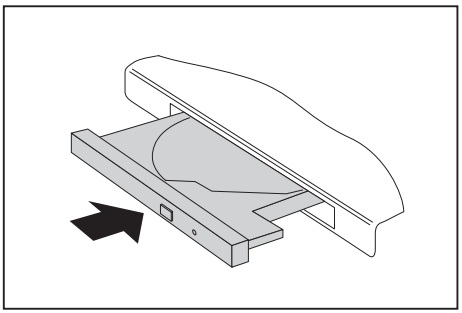


► Place the data carrier in the drive slot with the printed side facing upwards.

Inserting or removing a data carrier (drive tray)



► Push the insert/eject button (1).
↳ The drive tray will open.
► Gently pull the drive tray (2) completely out.



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

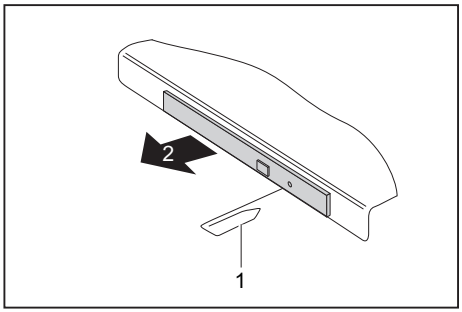
or

► If there is already a data carrier in the drive then take it out first.

► Push in the drive tray until you feel it lock into place.

Manual removal of data carriers (emergency removal)

In the event of a power failure or damage to the drive it may be necessary to manually remove the CD/DVD.



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

Regional codes for DVD films and DVD players

DVD films and DVD players (e.g. the DVD drive of your notebook) are always provided with a regional code. The regional codes of DVD films and DVD players must match so that the DVD film can be played back.

There are six different regional codes:

- Regional code 1: USA and Canada
- Regional code 2: Egypt, Europe, Japan, South Africa and the Middle East
- Regional code 3: South-east Asia (incl. Hong Kong, Indonesia, the Philippines, South Korea, Taiwan)
- Regional code 4: Australia, New Zealand, South-East Pacific, Central and South America, and the Caribbean
- Regional code 5: Africa (except South Africa), India and the former Soviet states
- Regional code 6: China

The DVD drive of your notebook supports the function RPC-II (Phase II System of Regional Playback Control).

Before you can play video DVDs on your notebook, you will need to set the regional code for your region. When you play a DVD for the first time, your notebook will automatically detect the regional code of the inserted DVD and select this as your regional code. Before you play your first DVD no regional code will be set.

This function permits the final user to change the regional code of the drive up to five times to play back corresponding DVD films. After this, the last regional code selected is retained and cannot be changed again.

Fujitsu Technology Solutions therefore recommends that, the first time you play a video DVD, it is one from your region, in the UK for instance one with the regional code 2.

If you wish to change the region code, you will first need to insert a DVD with the new region code into the DVD recorder.

Before buying a DVD film you should check that the regional code of the DVD film matches the region code set for the DVD drive of your notebook.

Adjusting the AutoPlay function of the drive

Windows uses AutoPlay technology. This allows you to tell Windows what to do with different types of CD or DVD disks.

You can set the AutoPlay function of the CD/DVD drive according to your needs. For example, if you insert a music CD you can tell Windows to open Media Player and start to play it automatically.

Proceed as follows:

► Enter the settings by clicking *Start – (Settings) – Control Panel – Hardware and Sound – Autoplay*.

Please note that you must select the desired action for each individual CD/DVD content type.

Loudspeakers and microphones

Your notebook is equipped with stereo loudspeakers, two microphones and, depending on the equipment level, one bass loudspeaker (subwoofer).

For information on the exact position of loudspeakers and microphones, see the "Initial Setup" User Guide for your AMILO notebook.

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

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

Subwoofer system (optional)

The bass loudspeaker and the two loudspeakers form a so-called subwoofer system for true listening pleasure. The internal loudspeakers are used to generate the mid and high-frequency sounds, while the bass loudspeaker generates the low-frequency sounds. As a listener is not able to determine the exact direction from where the low-frequency sounds are coming, only one subwoofer is required. It can be positioned anywhere (e.g. on the underside of the notebook).

Switching the loudspeaker off and on

► To switch the loudspeaker off and on, either use the key combination Fn + F3 or use the quick start buttons (device dependent).

Adjusting the volume

► Set the desired volume with the key combination Fn + F4 or Fn + F5.

or

► Double-click on the speaker symbol in the taskbar and on *Mixer*.

or

► Select *Start symbol – (Settings) – Control Panel – Hardware and Sound – Sound: Adjust system volume*.

► Use the slide control to change the volume.

► To turn the speaker on or off, double-click on the speaker symbol in the taskbar.

Wireless USB (device-dependent)

Wireless USB allows a secure wireless USB connection between your computer and any USB device. If wireless USB functions are already integrated in your computer, we recommend that you use the wireless USB adapter from Fujitsu Technology Solutions.

If you have bought a Fujitsu Technology Solutions computer with wireless USB functionality, the necessary drivers are already installed.

General characteristics of Wireless USB

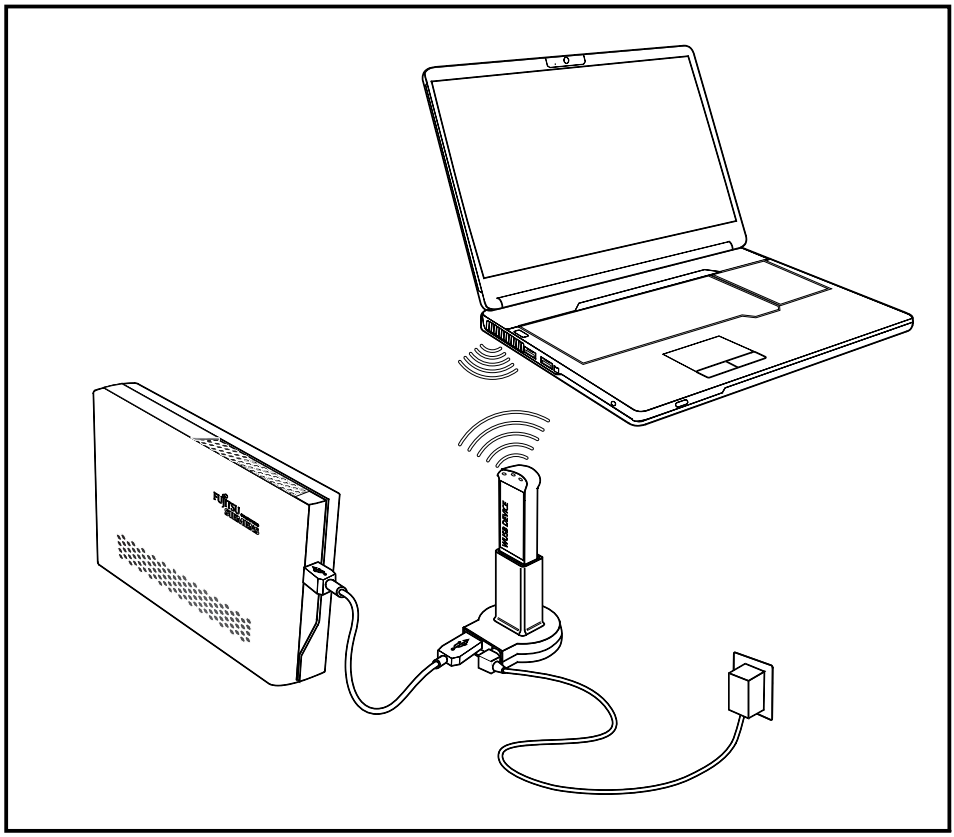
- You can establish a wireless connection between your computer and USB devices
- Maximum range of up to 10 m (under optimum conditions)
- fast host/device pairing

Installing a wireless USB adapter

You can purchase the wireless USB adapter from Fujitsu Technology Solutions in a specialist store. You will find detailed information on installing the drivers and using the device for the first time in the documentation for the adapter.

- ► Install the required drivers.
- ► Connect the adapter to the computer and establish the connection between the devices (pairs).
- ► Connect the adapter to the required USB device.
- ► Connect the USB device to the power supply.

↳ The adapter is ready for use.



Wireless LAN / Bluetooth wireless components (device-dependent)

The installation of a wireless LAN/Bluetooth module not approved by Fujitsu Technology Solutions GmbH invalidates the permits (CE!) issued for this device.

Your notebook is supplied with integrated wireless LAN and Bluetooth (device-dependent on certain AMILO models).

Switching Wireless LAN and Bluetooth on and off

Check whether the wireless LAN module is activated/deactivated in the installed wireless LAN software.

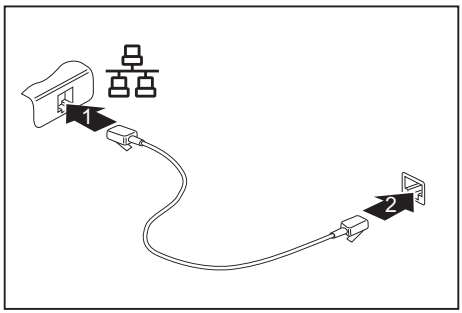
► You can activate or deactivate the wireless LAN module with the key combination Fn + F1.

If a Bluetooth module is present then it is automatically activated/deactivated with the wireless LAN module.

Additional information about using wireless LAN and Bluetooth can be found in the Help files. In order to be able to use the full scope of functions available with Bluetooth, it may be necessary to install the additional software supplied with your external Bluetooth device.

Ethernet and LAN

The internal network module of your notebook supports Ethernet-LAN (10/100/1000 Mbps). This allows you to establish a connection to a local network (LAN = Local Area Network).



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

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

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

Security functions

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

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

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

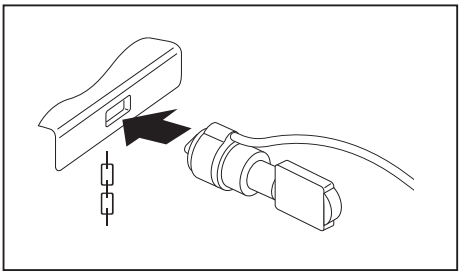
- Make regular backups to external storage devices such as external hard drives, CD or DVD disks.
- Some security functions need you to choose passwords. Make a note of the passwords and keep them in a safe place.

If you forget your passwords you will need to contact the help desk. Deletion or resetting of passwords are not covered by your warranty and a charge will be made for assistance.

Brief overview of security functions

Security functions	Type of protection	Preparation
Kensington Lock	Mechanically robust steel cable with lock	Fit and lock Kensington MicroSaver (optional accessory)
BIOS password protection	Password protection for *BIOS Setup Utility* and operating system with supervisor and user password.	Specify at least one supervisor password in the *BIOS Setup Utility* and activate the password protection for the operating system as desired.

Using a Kensington Lock



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

Configuring password protection in BIOS Setup Utility

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

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

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

Protecting BIOS Setup Utility (supervisor and user password)

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

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

Please refer to the "'Settings in BIOS Setup Utility", Page 71 section for a description of how to call up and operate the *BIOS Setup Utility*.

Setting supervisor and user password

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

Changing the supervisor or user password

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

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

Removing passwords

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

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

Password protection for booting of the operating system

Make sure that you set a password during initial installation of the operating system. Do not leave the entry blank.

With the supervisor password you have set in the *BIOS Setup Utility* (see section "Setting supervisor and user password", Page 52), you can also prevent booting of the operating system.

Activating system protection

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

Deactivating system protection

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

Connecting external devices

Always refer to the safety information provided in "Important notes", Page 3 before connecting or disconnecting any devices to or from your notebook.

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

Never connect or disconnect cables during a thunderstorm.

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

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

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

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

Connecting devices to the notebook

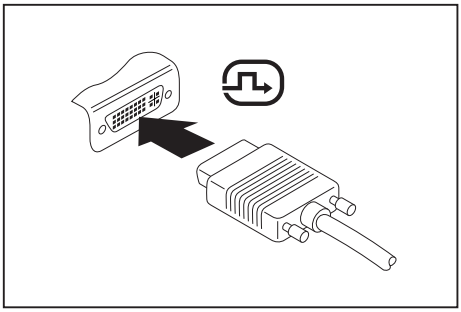
1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the mains sockets.
3. Connect the cables for your external devices following the instructions.
4. Plug all power cables into the mains sockets.

Disconnecting devices from the notebook

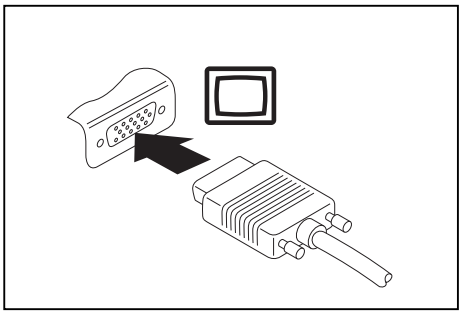
1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the mains sockets.
3. Disconnect the cables for your external devices following the instructions.

Connecting an external monitor

An analogue monitor is connected to the analogue VGA monitor port, a digital monitor to the DVI-I monitor port. Monitor output is limited to a maximum of two monitors at any one time (see "Key combinations", Page 19, section "Toggle output monitor").



Digital DVI-I monitor port



Analogue VGA monitor port

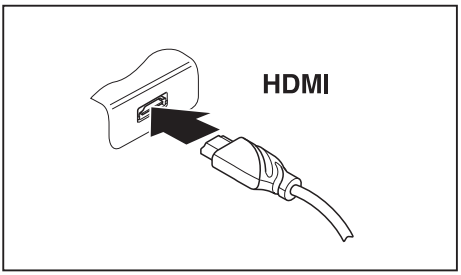
- ► Switch off the notebook and the external monitor.
- ► Connect the data cable of the external monitor to the monitor port of the notebook.
- ► First switch on the external monitor and then the notebook.

Using the Fn + F10 key combination, you can toggle back and forth between the external monitor and the notebook's LCD screen.

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

HDMI port (device-dependent)

The HDMI port of your notebook can be used to connect an external amplifier, LCD TV or a plasma TV with an HDMI connection.



- ► Connect the data cable to the external device.
- ► Connect the data cable to the HDMI port of the notebook.

Some LCD televisions have only two loudspeaker connections and therefore cannot reproduce Dolby digital or DTS. In order to reproduce the sound, you must go into *Windows Vista* and adjust the sound settings.

Proceed as follows:

- ► Select *Startsymbol – (Settings) – Control Panel – Hardware and Sound – Sound*.
- ► Mark *Realtek Digital Output*.
- ► Select *Properties – Supported formats*.
- ► Deactivate the settings *DTS audio* and *Dolby digital*.
- ► Confirm the settings with *OK*.

Setting the refresh rate for your external monitor

If the refresh rate set is too high, the monitor may be damaged. Please see the documentation included with your monitor for the maximum possible refresh rate.

By setting the optimum refresh rate you will avoid screen flicker.

- ► Set the appropriate refresh rate for the type of monitor connected.
- ► Select *Startsymbol – (Settings) – Control Panel – Appearance and Personalization – Personalization: Adjust screen resolution*.

or

- ► Right-click on the desktop. Under *Personalization – Display Settings*, choose screen type 1 or 2.
- ► Select *Advanced Settings – Monitor*.
- ► Select *Screen Refresh Rate* to choose the optimum refresh rate for the connected monitor type.
- ► Click *Apply* and *OK*.

Connecting USB devices

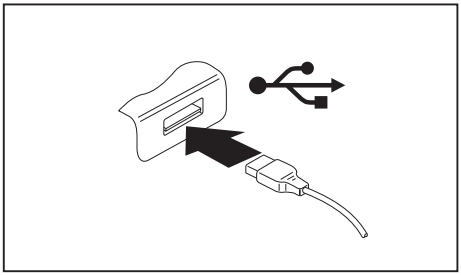
On the USB ports you can connect external devices that also have a USB port (e.g. a printer, a scanner or a modem).

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

USB 1.x has a maximum data transfer rate of 12 Mbit/s.

USB 2.x has a data transfer rate of up to 480 Mbit/s.

Additional information can be found in the documentation for the USB devices.



- ► Connect the data cable to the external device.
- ► Connect the data cable to a USB port of the notebook.

Device drivers

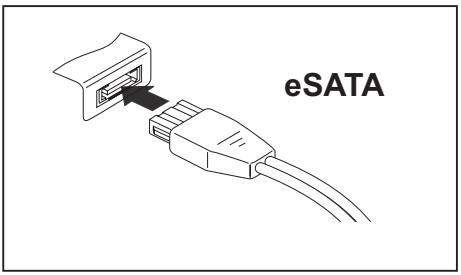
USB devices will be automatically recognised and installed by your operating system.

Connecting an external SATA hard disk (eSATA)

An external SATA hard disk can be connected at the eSATA/USB combination port. This allows you to expand the internal hard disk capacity as you wish. You should obtain a hard disk with a robust casing.

The cable is not included in the delivery scope. It can be obtained through your retailer. The length of the eSATA cable must not exceed 2 metres. Simple SATA cables are designed for installation in devices and cannot be used due to the differences in pin allocation. Please consult a specialist retailer for advice.

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



- ► Connect the data cable to the external device.
- ► Connect the data cable to the eSATA/USB combination port of the computer.

Device driver

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

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

Safe removal of eSATA and USB devices

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

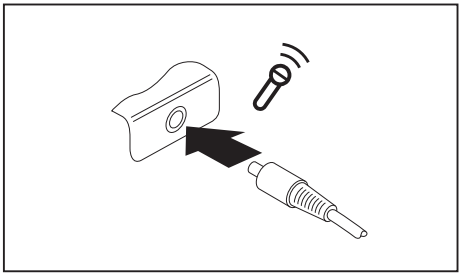
- ► Left-click on the icon.
- ► Select the device you want to stop and remove.
- ► Press the Enter key.

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

Connecting external audio devices

Microphone port / Line In

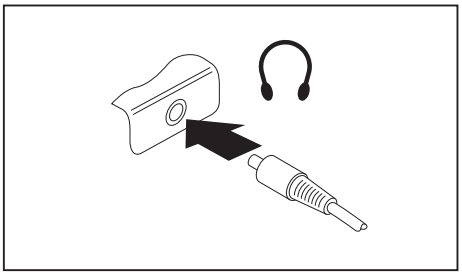
The microphone port/Line In allows you to connect an external microphone, a MiniDisc player, MP3 player, CD player or a tape deck to your notebook.



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

Headphones/SPDIF port

You can use the Headphones/SPDIF port to connect headphones, external loudspeakers or an audio device with a digital optical input to your notebook.



- ► Connect the data cable to the external device.
- ► Connect the data cable to the headphones/SPDIF port of the notebook.

i

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

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

The headphones / SPDIF port on your notebook is a "3.5 mm jack socket".

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

If you want to connect audio devices with a digital optical input (such as an amplifier), you will need a fibre optic cable with a "TOSLINK 3.5 mm miniplug (SPDIF 3.5 jack)".

Connectors	Port	Pin configuration
		optical

Adjusting the volume

► To set the desired volume, see "Adjusting the volume", Page 46.

AMILO Graphic Booster (device dependent)

The AMILO GraphicBooster offers a compact size with full graphics power for demanding 3D applications.

The AMILO GraphicBooster has two digital monitor ports. Together with the DVI-I output of your AMILO Notebook, you can connect up to three monitors. All the graphics drivers needed will be installed on your AMILO Notebook during first-time setup.

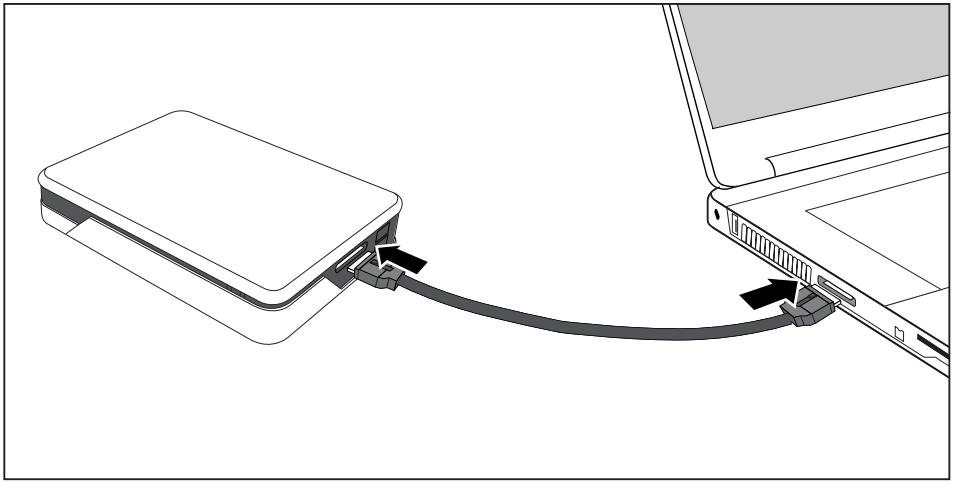
Your AMILO Graphic Booster is hot-plug capable. After connection it is recognised by the Windows operating system and can be operated immediately.

Requirement:

Your AMILO Notebook has the port to the AMILO Graphic Booster available and all drivers are correctly installed and enabled.

Preparing your AMILO GraphicBooster for use

► Switch your AMILO notebook on.
► Log onto the operating system.
► Connect the AMILO GraphicBooster to the mains supply.
► Connect a monitor to the HDMI or DVI-I port of the AMILO GraphicBooster.
► Switch the monitor on.



► Connect the AMILO GraphicBooster to your AMILO notebook using the supplied cable.
↳ The left-hand status indicator on the AMILO GraphicBooster lights up blue.
► Follow the instructions on the screen and restart your AMILO notebook when prompted.
↳ The right-hand status indicator on the AMILO GraphicBooster lights up blue.

The desktop of the monitor connected to the AMILO GraphicBooster is set up as the primary desktop with the number 3.

or

The desktop of the monitor connected to the AMILO GraphicBooster is set up as the secondary desktop with the number 3.

While the drivers for your monitor are being installed, the monitor may turn black or flicker for a short time.

Removing and installing components during servicing

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

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

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

Notes on installing and removing boards and components

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

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

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

- You must always discharge static build up (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Remove the power plug from the mains supply before inserting or removing boards containing ESDs.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

Removing and installing the battery

How to remove and reinstall a battery is described in the "Removing and installing the battery", Page 30 chapter.

Installing and removing the memory expansion modules

Your notebook has up to 4 Gbyte of main memory installed, depending on the configuration level. The notebook will not start up without memory modules, as a fixed main memory is essential for operation of the device.

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

Please observe the safety information in "Important notes", Page 3.

The notebook must be switched off when installing/removing the memory modules and must not be in one of the power saving modes.

Only use memory expansion modules which have been approved for your notebook - refer to the technical data section in the manual entitled "Preparing for use" for your notebook.

Never use force when installing or removing memory modules.

Make sure that no foreign objects fall into the memory expansion compartment.

A memory module is located underneath the service compartment. You must open the service compartment to remove or install a memory module. Once you have removed the cover, the various components are exposed. These components should be removed and replaced only by authorised specialists. Therefore always observe the following:

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

As some electrostatically sensitive components are exposed, please read and follow the instructions in "Notes on installing and removing boards and components", Page 63.

The second memory module is not accessible from the outside and must therefore only be removed or replaced by an authorised Fujitsu Technology Solutions GmbH service partner.

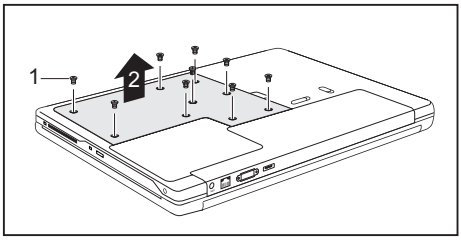
- ► Switch off your notebook.
- ► Fold the LCD screen onto the lower section of the notebook.
- ► Remove the mains plug for the mains adapter from the mains socket.
- ► Disconnect all cables connected to the notebook.
- ► Place the notebook upside down on a flat surface.
- ► Remove the battery (see "Removing and installing the battery", Page 30).

Removing the memory cover

Depending on the particular variant of notebook you have, it may either have a shared compartment for memory and hard disk or these components may be housed in two separate compartments.

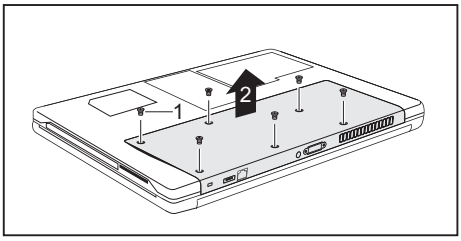
The casing covers shown here may differ from those of your AMILO Notebook. The operation steps are identical however.

Devices with a joint compartment for memory and hard disk



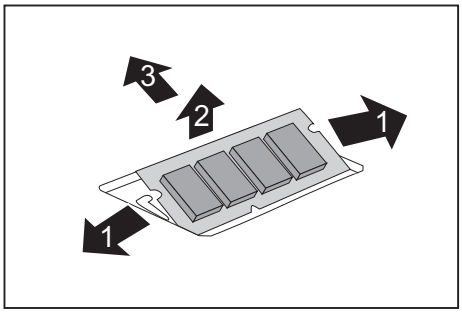
- ► Remove the screws (1).
- ► Lift the cover off the notebook in the direction of the arrow (2).

Devices with separate compartments for memory and hard disk



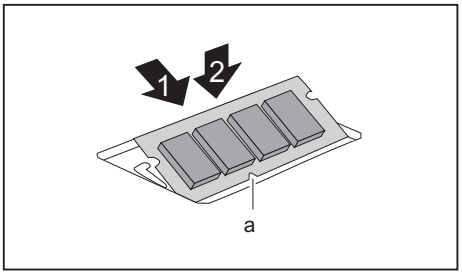
- ► Remove the screws (1).
- ► Lift the cover off the notebook in the direction of the arrow (2).

Removing memory modules



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

Installing a memory module

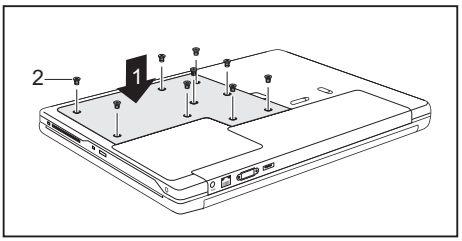


- ► Insert the memory module with the contacts and the recess (a) facing the slot (1).
- ► Carefully push the memory module downwards until you feel it click into place (2).

Fastening the memory cover

Depending on the particular variant of notebook you have, it may have a shared compartment for memory and hard disk, or these components may be housed in two separate compartments.

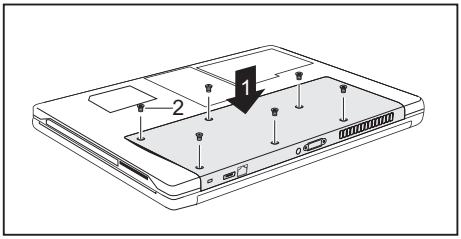
Devices with a joint compartment for memory and hard disk



- ► Attach the cover in the direction of the arrow (1).
- ► Secure the cover with the screws (2).

- ► Reinstall the battery (see "Removing and installing the battery", Page 30).
- ► Turn the notebook the right way up and place it on a flat surface.
- ► Reconnect the cables that you disconnected previously.

Devices with separate compartments for memory and hard disk



► Attach the cover in the direction of the arrow (1).
► Secure the cover with the screws (2).

► Reinstall the battery (see "Removing and installing the battery", Page 30).
► Turn the notebook the right way up and place it on a flat surface.
► Reconnect the cables that you disconnected previously.

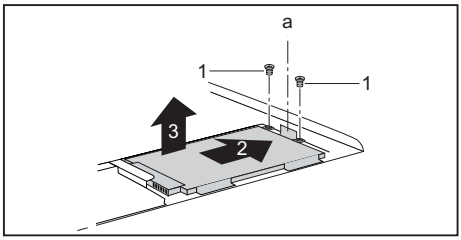
Removing and installing the hard disk

Depending on the particular variant of notebook you have, it may have a shared compartment for memory and hard disk, or these components may be housed in two separate compartments.

Devices with a joint compartment for memory and hard disk

Removing the hard disk

► Remove the memory cover (see "Removing the memory cover", "Devices with a joint compartment for memory and hard disk", Page 65).



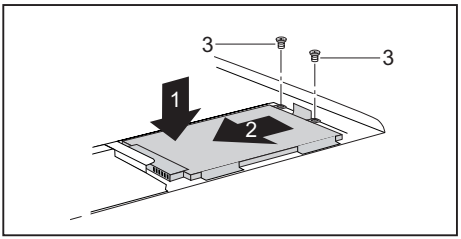
► Remove the screws (1) from the frame of the hard disk.
► Pull the hard disk by the pulling aid (a) in a straight direction (2) towards the right.
► Remove the hard disk with the frame (3) from the hard disk compartment.

► Remove the 4 screws from the frame of the hard disk.
► Pull the hard disk out of the frame.

Installing the hard disk

When installing the hard disk, ensure that the contacts in the hard disk compartment do not bend or become damaged.

► Slide the hard disk into the frame.
► Secure the hard disk to the frame using the 4 screws.



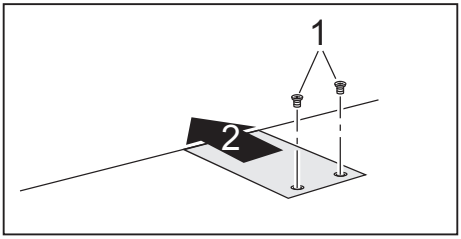
► Working in the direction of the arrow (1), insert the hard disk with the frame into the hard disk compartment.
► Slide the hard disk in a straight direction (2) to the left until the contacts engage. If necessary, use a finger to guide the left-hand edge of the hard disk along.
► Secure the frame with the screws (3).

► Fasten the memory cover (see "Fastening the memory cover", "Devices with a joint compartment for memory and hard disk", Page 66).

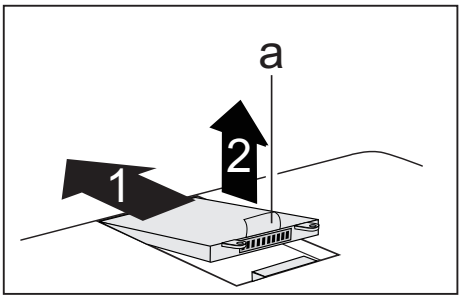
Devices with separate compartments for memory and hard disk

Removing the hard disk

- ► Switch off your notebook and disconnect the power plug from the mains socket.
- ► Close the LCD screen so that it locks into place.
- ► Disconnect all cables connected to the notebook.
- ► Turn your notebook over and place it on a flat surface.
- ► Remove the battery (see Chapter "Removing and installing the battery", Page 30).



- ► Remove the screws (1).
- ► Slide off the cover in the direction of the arrow (2).

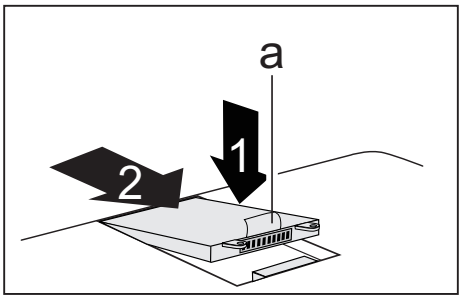


- ► Slide the hard disk in the direction of the arrow (1).
- ► Remove the hard disk with the pulling aid (a) from the hard disk compartment (2).
- ► Remove the 4 screws from the frame of the hard disk.
- ► Pull the hard disk out of the frame.

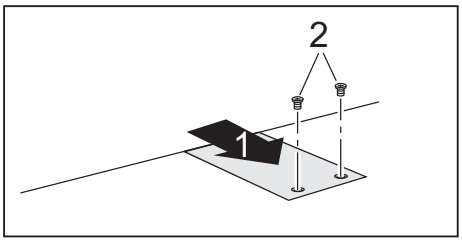
Installing the hard disk

When installing the hard disk, ensure that the contacts in the hard disk compartment do not bend or become damaged.

- ► Slide the hard disk into the frame.
- ► Secure the hard disk to the frame using the 4 screws.



- ► Insert the hard disk in the direction of the arrow (1) into the hard disk compartment.
- ► Pull the hard disk by the pulling aid (a) straight in the direction of the arrow (2) until the contacts engage.



- ► Slide the cover in the direction of the arrow (1) onto the hard disk compartment.
- ► Secure the cover with the screws (2).

- ► Reinstall the battery (see "Removing and installing the battery", Page 30).
- ► Turn the notebook the right way up and place it on a flat surface.
- ► Reconnect the cables that you disconnected previously.

Settings in BIOS Setup Utility

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

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

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

Information	Displays information relating to the BIOS, processor and notebook
Main	System settings such as time and date
Advanced	Advanced system settings
Security	Password settings and security functions
Power	Energy saving function
Boot	Configuration of the start-up sequence
Exit	Exits the *BIOS Setup Utility*

Starting the BIOS Setup Utility

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

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

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

► Press the function key F2.

► If a password has been assigned, enter the password and press the Enter key.

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

The *BIOS Setup Utility* starts.

Operating BIOS Setup Utility

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

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

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

↳ The menu is displayed on the screen.

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

► Press the Enter key.

► Press the ESC key to exit the selected menu.

► For future reference, make a note of the changes you have made (for example, in this manual).

Exiting BIOS Setup Utility

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

Exit Saving Changes - save changes and exit BIOS Setup Utility

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

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

Exit Discarding Changes – Discard changes and exit BIOS Setup Utility

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

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

Load Setup Defaults – Copy Standard Entries

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

Discard Changes – Discard changes without exiting the BIOS Setup Utility

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

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

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

Save Changes - save changes without exiting the BIOS Setup Utility

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

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

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

Troubleshooting and tips

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

If a fault occurs, try to correct it as described. If you fail to correct the problem, proceed as follows:

- ► Make a note of the steps and the circumstances that led to the fault. Also make a note of any error messages displayed.
- ► Switch the notebook off.
- ► Contact the Hotline/Help Desk.

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

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

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

Help if problems occur

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

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

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

Restoring installed software

Please create backup copies of your files on a regular basis. If data is lost, you can restore your applications using the data carriers. However, if you do not have backup copies of your own data files, it is no longer possible to restore them.

If your operating system will not start, or if there are errors on the hard disk, the pre-installed software may have to be re-installed.

Restoring the operating system, drivers, manuals and special software

We strongly recommend that, as soon as possible after purchasing your equipment, you create a backup copy on DVD of the pre-installed operating system in its delivery configuration.

If you have forgotten an operating system password which has already been assigned, without previously having saved the operating system, recreation of the necessary data media and return to the factory default setup will no longer be possible.

You can find further information on how to restore the operating system, drivers, manuals and special software in the "Recovery Process" manual.

The notebook's date or time is incorrect

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

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

► Please contact your sales outlet or our hotline/help desk.

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

Cause	Troubleshooting
The virtual numeric keypad of your device is activated, see "Virtual numeric keypad (notebooks without separate numeric keypad) ", Page 18	► Press the key combination Fn + Num.

A beep sounds at a rate of one per second

Cause	Troubleshooting
The battery is almost flat.	► Charge the battery.

The notebook's LCD screen remains blank

Cause	Troubleshooting
Monitor is switched off.	► Press a key or touch the touchpad.
External monitor or television set connected.	► Press the key combination Fn + F10 (switch screen output).

The LCD screen is difficult to read

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

The external monitor remains blank

Cause	Troubleshooting
Monitor is switched off.	► Switch the external monitor on.
Power saving has been activated (monitor is blank).	► Press any key to continue.
Brightness is set to dark.	► Adjust the brightness of the monitor.
Screen output is set to the notebook's LCD screen	► Press the key combination Fn + F10 (switch screen output).
The external monitor's power cable or data cable is not connected properly.	► Switch off the external monitor and the notebook. ► Check whether the power cable is plugged properly into the external monitor and into the power socket. ► Check whether the data cable is properly connected to the notebook and the external monitor (if it is plugged in with a connector). ► Switch on the external monitor and the notebook.

The external monitor is blank or the image is unstable

Cause	Troubleshooting
The wrong external monitor has been selected or the wrong screen resolution has been set for the application program.	► Terminate the application program in Windows by pressing Alt + F4. If the fault persists after closing the program, switch over to the notebook's internal LCD screen with Fn + F10. Change the following setting: ► Set the screen resolution: Select the required resolution with *Startsymbol – (Settings) – Control Panel – Appearance and Personalization – Personalization: Adjust the screen resolution as required*. ► Select monitor: Right-click on the desktop. Under *Personalization – Display Settings* choose monitor 1 or 2 and under *Advanced Settings – Monitor* choose the correct monitor.

The notebook cannot be started

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

The notebook stops working

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

The printer does not print

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

The radio connection to a network does not work

Cause	Troubleshooting
The wireless component is disabled.	► Switch the radio components on (see "Switching Wireless LAN and Bluetooth on and off", Page 49).
The wireless component is enabled. Despite this, the wireless connection to a network does not work.	► Check whether the radio connection is switched on via the software. ► Further information on using the wireless component can be found in the help files (see "Information sources", Page 4).

Manufacturer’s notes

Disposal and recycling

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

Declarations of Conformity

The "Declarations of Conformity" concerning the AMILO can be found at our Internet address: "http://ts.fujitsu.com".

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

Copyright-protected technology

This product incorporates copyright protection technology that is protected by method claims of certain U. S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorised by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorised by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

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	Romania	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.

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