

FUJITSU LIFEBOOK U904





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FUJITSU LIFEBOOK U904

Operating Manual

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Fujitsu Contact Information

Service and Support

You can contact Fujitsu Service and Support in the following ways:

- Toll free: 1-800-Fujitsu (1-800-838-5487)
- Website: "<http://solutions.us.fujitsu.com/www/content/support/contact/index.php>"



Before you place the call, you should have the following information ready so that the customer support representative can provide you with the fastest possible solution:

- Product name
- Product configuration number
- Product serial number
- Purchase date
- Conditions under which the problem occurred
- Any error messages that have occurred
- Type of device connected, if any

Fujitsu Shopping Online

Please go to "<http://www.shopfujitsu.com/store/>".







Maintaining Latest Configuration

To ensure that you always have the most current driver updates related to your system, you should occasionally access the Fujitsu Software Download Manager (FSDM) utility. The FSDM utility is available from the Fujitsu Support site. FSDM will allow you to view a list of the most current drivers, utilities, and applications to determine whether you have the latest versions. If you have a Windows 7 operating system, you will need to go to the Support Site to download the FSDM Utility: "<http://support.fujitsu.com/CS/Portal/support.do?srch=DOWNLOADS>".

Limited Warranty

Your LIFEBOOK notebook is backed by a Fujitsu International Limited Warranty. Check the service kit that came with your notebook for the Limited Warranty period and terms and conditions.

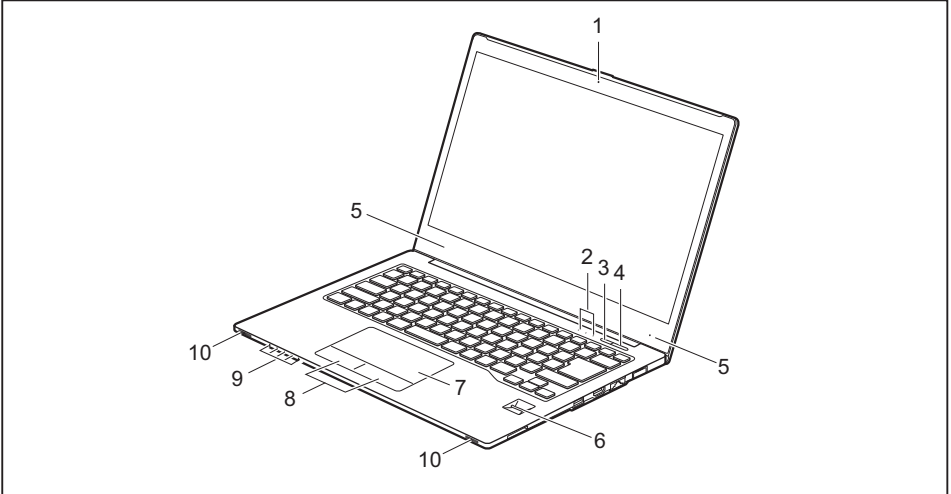
Notational conventions

	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 dialog or at the command line, e.g. your password (Name123) or a command used to start a program (start.exe)
This font	indicates information that is displayed on the screen by a program, e.g.: Installation is complete.
<i>This font</i>	Indicates <ul style="list-style-type: none"> • terms and texts used in a software interface, e.g.: Click on <i>Save</i> • names of programs or files, e.g. <i>Windows</i> or <i>setup.exe</i>.
"This font"	Indicates <ul style="list-style-type: none"> • 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://solutions.us.fujitsu.com/" • Names of CDs, DVDs and titles or designations for other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety/Regulations" manual
	indicates a key on the keyboard, e.g: 
This font	indicates terms and texts that are emphasized or highlighted, e.g.: Do not switch off the device

Ports and controls

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

Front



1 = Webcam with Webcam LED

2 = Status indicators

3 = ECO Key

4 = ON/OFF button

5 = Microphone

6 = Fingerprint sensor (optional)

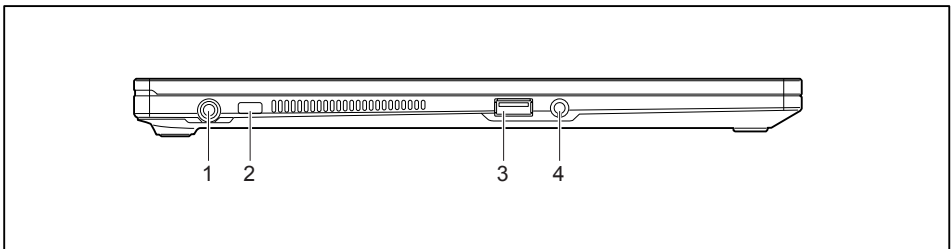
7 = Touchpad

8 = Touchpad buttons

9 = Status indicators

10 = Speaker

Left side



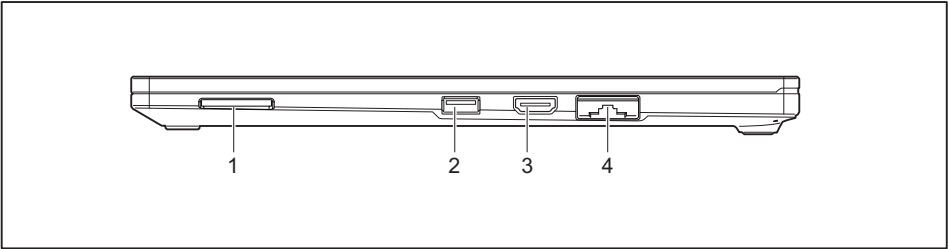
1 = DC input connector (DC IN)

2 = Security Lock slot

3 = USB port 3.0

4 = Headphone / Microphone / Line-in /
Line-out / Headset combo port

Right side



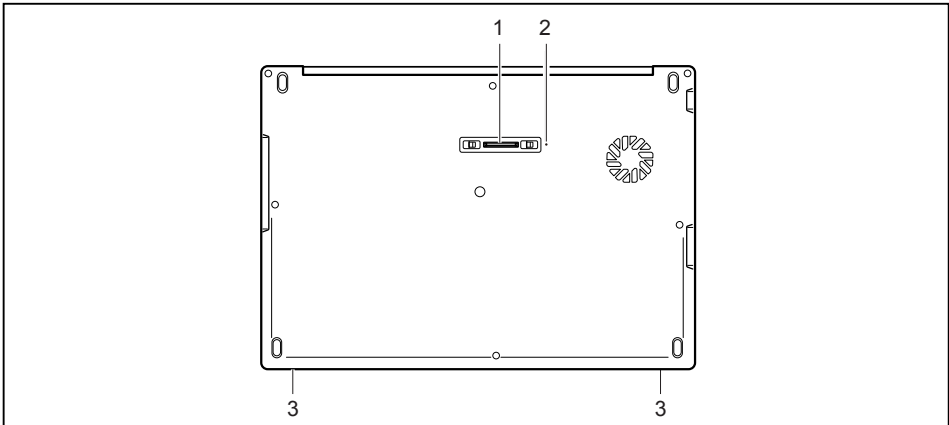
1 = SD card slot

2 = USB port 3.0 (Anytime USB charge)

3 = HDMI port

4 = LAN port (pull-out type)

Bottom



1 = Port replicator port

2 = Reset key (countersunk)

3 = Speakers

Important notes



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

Safety notes



Please follow the safety notes given below.

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

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

Read the information on the ambient conditions in the ["Technical data", Page 61](#) and ["First-time setup of your device", Page 15](#) before preparing your notebook for use and switching it on for the first time.

When cleaning the device, please observe the relevant notes in the section ["Cleaning the notebook", Page 14](#).

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

Please refer to the notes in the chapter ["Removing and installing components during servicing", Page 52](#).

Handling the cord on this product will expose you to lead, a chemical known to the state of California to cause birth defects or other reproductive harm.

Wash hands after handling.

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

Additional safety notes for devices with radio components

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

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



For information on how to switch radio components on and off, see chapter ["Switching the wireless components on and off", Page 38](#).

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 35](#)).

Travelling with your notebook

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

Before you travel

- ▶ Switch off the radio component for data security reasons. With data traffic via a wireless connection, it is also possible for unauthorized third parties to receive data.



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

- ▶ Be sure that you only operate the notebook on aircraft when attendant has announced that it is safe to do so.

When travelling in other countries

- ▶ If you are travelling abroad, check that the AC adapter can be operated with the local AC voltage. If this is not the case, obtain the appropriate AC adapter for your notebook. Do not use any other voltage converter!
- ▶ Check whether the local AC voltage and the power cable are compatible. If this is not the case, buy a power cable that matches the local conditions.
- ▶ Enquire with the corresponding government office of the country you will be travelling in as to whether you may operate the radio component integrated in your notebook there).
- ▶ Take the necessary plug adapters if you're traveling overseas. Check the following diagram to determine which plug adapter you'll need or ask your travel agent.

Outlet Type	Location
	United States, Canada, Mexico, parts of Latin America, Japan, Korea, the Philippines, Taiwan
	Russia and the Commonwealth of Independent States (CIS), most of Europe, parts of Latin America, the Middle East, parts of Africa, Hong Kong, India, most of South Asia
	United Kingdom, Ireland, Malaysia, Singapore, parts of Africa
	China, Australia, New Zealand

Notebook: transporting



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

- ▶ If your device has an optical drive, remove all data media (e.g. CD, DVD) from the drives.
- ▶ Switch the notebook off.
- ▶ Unplug the AC adapter and all external devices from the power outlet.
- ▶ Disconnect the AC 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.
- ▶ To prevent accidental activation of the device, remove the power plug of the AC adapter from the power socket.
- ↳ The surface may be cleaned with a dry cloth. If particularly dirty, use a damp cloth that has been dipped in water mixed with mild domestic detergent and then carefully wrung out. To clean the keyboard and the touchpad, if available, you can use disinfectant wipes. Ensure that no liquid enters the device.

First-time setup of your device



Please read the chapter "[Important notes](#)", [Page 11](#).

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

Before you switch on the device for the first time, connect it to the AC voltage using the AC adapter, see "[AC adapter connecting](#)", [Page 19](#). The AC adapter must be connected during the entire installation process.

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

Please follow the instructions on the screen.

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

The battery must be charged if you want to operate your device using the battery.

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

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

Unpacking and checking the device



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

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



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

Selecting a location



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

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

Connecting external devices



Always refer to the safety information provided in ["Important notes", Page 11](#) 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:

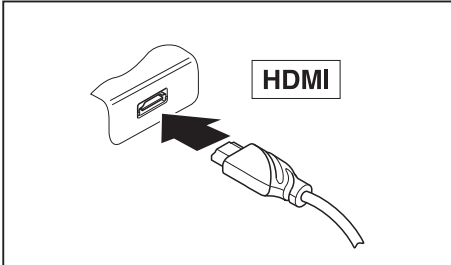


With some devices such as USB devices, HDMI or VGA monitors, headphones and microphones, it is not necessary to switch off the notebook and the device before connecting/disconnecting. For more information about whether or not devices need to be switched off, please refer to the documentation supplied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

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

HDMI port

The HDMI port on 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.

Connecting USB devices

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

i

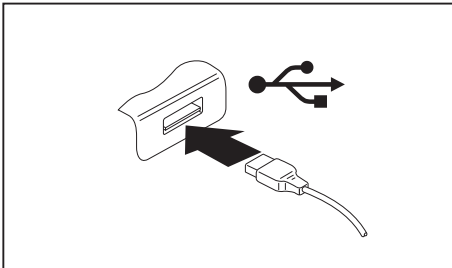
USB devices are hot-pluggable. This means you can connect and disconnect devices while your operating system is running.

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

USB 2.0 has a data transfer rate of up to 480 Mbit/s.

USB 3.0 has a data transfer rate of up to 5 Gbit/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.

i

Device drivers

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

USB port with charging function (Anytime USB charge)

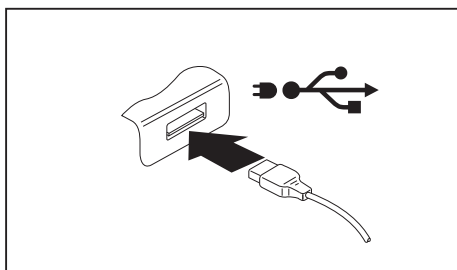


It is recommended that the notebook be operated with the power supply connected whenever the USB port with charging function is in use, as this function will drain the battery more quickly if an external USB device is being charged.

The power supply unit must already be connected when the notebook is switched off, as otherwise the USB charging function will be disabled and the connected USB devices will not be charged.



Some USB devices (e.g. mobile telephones) require a driver in order to utilize the USB charging function. In this case the USB charging function will not work when the notebook is switched off, as no drivers are active when the notebook is switched off.



You can use this USB port to charge or supply power to a USB device (e.g. to charge a PDA or a mobile phone or to connect a USB lamp), even if the notebook is switched off.

How to remove USB devices correctly



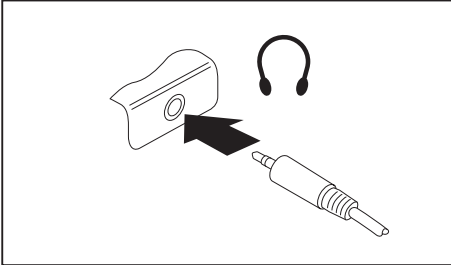
Always correctly remove the device according to the rules described below, to ensure that none of your data is lost.

- ▶ Left click on the icon to safely remove hardware, located in the taskbar.
- ▶ Select the device which you want to shut down and remove.
- ▶ Press the Enter key.
- ↳ Wait for the dialog box which tells you that it is now safe to remove the device.

Connecting external audio devices

Headphone / Microphone combo port

You can connect headsets, headphones, microphones or external speakers to your notebook via the headphone/microphone/line-in/line-out/headset combo port.



- ▶ Connect the audio cable to the external device.
- ▶ Connect the audio cable to the headphone / microphone combo port of the notebook.
- ↳ The internal speakers are disabled.



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

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

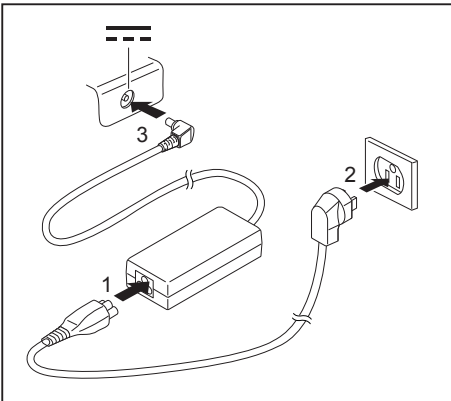
If you want to connect headphones or a speaker you will need a "3.5 mm jack plug".

AC adapter connecting



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

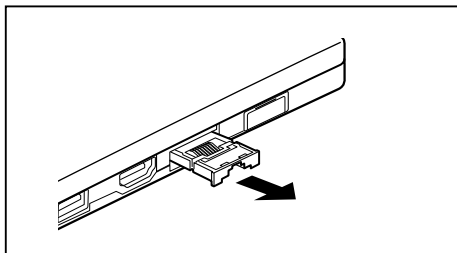
The supplied power cable conforms to the requirements of the country in which you purchased your device. Make sure that the power cable is approved for use in the country in which you intend to use it.



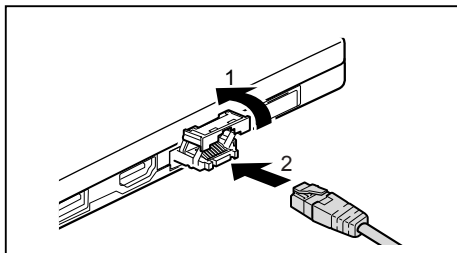
- ▶ Connect the power cable (1) to the AC adapter.
- ▶ Plug the AC cable (2) into a power outlet.
- ▶ Connect the AC adapter cable (3) to the DC jack (DC IN) of the device.

Ethernet and LAN

You can use Ethernet LAN with an LAN adapter which is available as an accessory. You can use it to establish a connection to a local network (LAN = Local Area Network).



- ▶ Pull out the LAN adapter of the notebook's LAN port into the direction of the arrow.



- ▶ Slide the LAN adapter up into the direction of the arrow (1).
- ▶ Connect the network cable to the LAN adapter (2).
- ▶ Connect the network cable to your network.

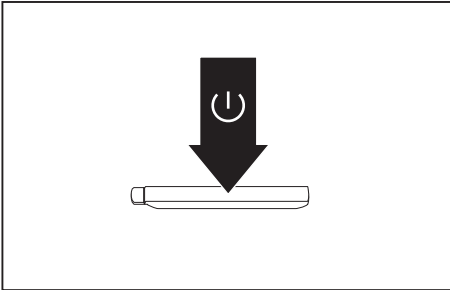


Your network administrator can help you to configure and use the LAN connections.

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

Switching on the device for the first time

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



- ▶ Switch on your device.

- ▶ During installation, follow the instructions on screen.



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

Starting Windows® for the First Time

- ▶ After you boot up the system the first time and follow the instructions on the screen, you will eventually come to the Welcome window. After the Welcome window appears, the screen will black out for up to several minutes. This is normal.
DO NOT ATTEMPT TO POWER DOWN THE SYSTEM AT THIS POINT.
- ↳ While the screen is blacked out, your system configuration is being set up and the necessary files are being installed.
- ▶ During the course of the first start up, you will need to read and accept the End User License Agreements (EULAs) for Microsoft and Fujitsu.



If you reject the terms of the license agreement you will be asked to review the license agreement for information on returning Windows® or to shut down your LIFEBOOK.

You cannot use your LIFEBOOK until you have accepted the license agreement. If you stop the process your LIFEBOOK will return to the beginning of the Windows® Welcome Process even if you shut down your LIFEBOOK and start it up again.

Following first boot, you will arrive at the modern UI screen (Windows 8.1 only. Windows 7 will arrive at desktop). Some useful shortcuts for your reference: Press the Windows + D key to go to traditional Windows desktop. Press Windows +M key to load the traditional Windows desktop and minimize all applications.

Note: If you are using Windows® 7 you will need to adjust your font size due to the high resolution of the screen.

- ▶ Go make the fonts and icons easier to read, please click on Size Setting icon on the desktop and adjust to a comfortable, viewing setting.

Connect to the Internet or Network

- ▶ Ensure the Wireless Status Indicator is “On”,
- or
- ▶ Connect an Ethernet cable (not supplied) to the LAN jack on your notebook and to a wall jack or to a Ethernet router (not included).
 - ▶ Register your LIFEBOOK with Fujitsu Service and Support via our website ["http://solutions.us.fujitsu.com/www/content/support/"](http://solutions.us.fujitsu.com/www/content/support/). This helps us to better serve you.

Activate Additional Utilities, Applications, & Drivers

- ▶ You should launch the desktop icon Fujitsu Bonus Apps to see if there are any additional applications available for the system. Bonus Apps contains optional applications. You can select individual or all software that is available. Bonus Apps will automatically be installed.

Create backup media with System Recovery and Restore



Recovery discs (for your pre-loaded factory image) are NOT included with LIFEBOOK models that are shipped with System Recovery and Restore, unless you purchased the inoperable DVD. If your hard drive crashes or the computer system becomes corrupted, you can use the recovery discs that you create to restore the system to its original condition.

- ▶ In addition, you will find a shortcut labeled “Fujitsu Software Extractor” in the “C:\Fujitsu\Drivers\Auto Installer” folder. This utility will let you save essential software packages (drivers, utilities, applications) to writable media on the Desktop or an external drive.
- ▶ Click on the System Backup and Restore icon to create backup recovery media and application discs. Note: When using Windows 7 click on MyRecovery icon.
- ▶ Refer to the Troubleshooting section for more detailed instructions.

Working with the notebook

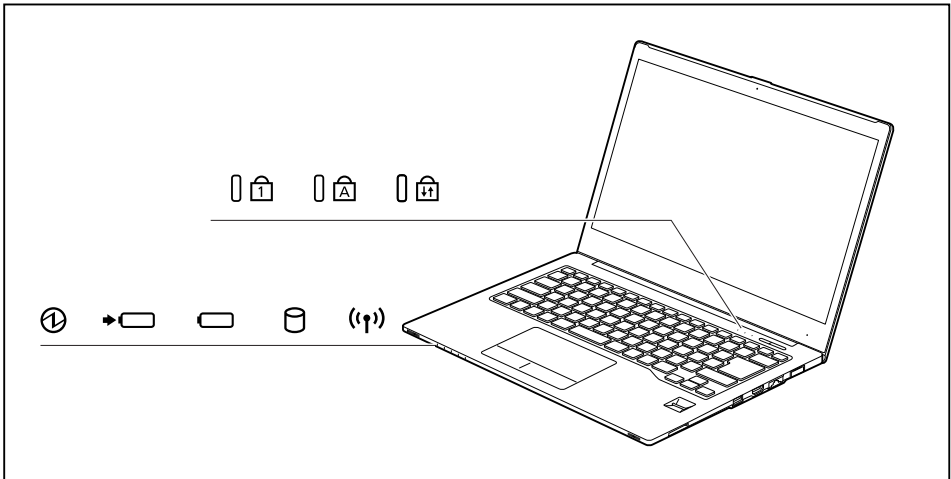
This chapter describes the basics for operating your notebook. Please read the chapter entitled ["Connecting external devices", Page 16](#) for instructions on how to connect devices such as a mouse and a printer to the notebook.












Please refer to the notes in ["Important notes", Page 11](#).

Status indicators

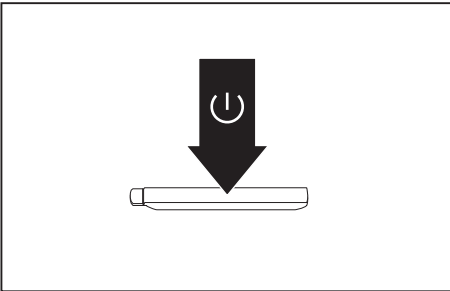
The status indicators provide information about the status of the power supply, the drives and the keyboard functions.



Status indicators	Description
	Power-on indicator/Standby <ul style="list-style-type: none"> The indicator is lit: The notebook is switched on. The indicator flashes: The notebook is in standby mode. The indicator is not lit: The notebook is switched off.
	Battery remaining indicator The state of charge of the battery is shown by the battery indicator. <ul style="list-style-type: none"> Indicator is illuminated (white): The battery is charged. The indicator is illuminated (orange): The AC adapter is connected and the battery is being charged. The indicator flashes red: a fault has occurred. The indicator is not illuminated: the AC adapter is not connected.

Status indicators	Description
	<p>Battery charging indicator/power connector The charging state of the battery is shown by the rechargeable battery indicator.</p> <p>With AC adapter connected:</p> <ul style="list-style-type: none"> • The indicator lights up white: The battery is fully charged. • The indicator lights up orange: The battery is charging. • The indicator flashes orange: The AC adapter is connected but the battery cannot be charged as the battery is too hot or too cold for charging. The charging process is continued as soon as the battery has reached a permissible temperature again. • The indicator is off: The system is in battery operation and the AC adapter is not connected.
	<p>Drive indicator The indicator is lit: One of the drives (e.g. hard disk, CD/DVD) is being accessed.</p>
	<p>Num Lock indicator The indicator is lit: The [Num] key has been pressed. The virtual numerical keypad is activated. You can output the characters indicated on the upper right of the keys.</p>
	<p>Caps Lock indicator The indicator is lit: The Caps Lock key has been pressed. All the characters you type will appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear when that key is pressed.</p>
	<p>Wireless components indicator</p> <ul style="list-style-type: none"> • The indicator is lit: The wireless components are switched on. • The indicator is not lit: The wireless components are switched off. • The indicator is flashing: vPro is activated. The radio components are enabled when the notebook is in standby mode, hibernate mode or is switched off.
	<p>Scroll Lock indicator Indicator is illuminated: the key combination [Fn] + [Scr] has been pressed. The effect that this key has varies between applications.</p>
	<p>ECO key This button starts the <i>Power Saving Utility</i> with which components, which are not currently required, can be switched off to save energy.</p>

Switching on the notebook



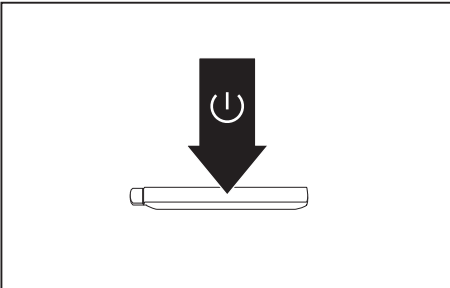
↳ The power-on indicator is lit.

- ▶ Open the LCD screen.
- ▶ Press the ON/OFF button for about one second to switch the notebook on.

Notebook: switching off



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



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

Keyboard



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

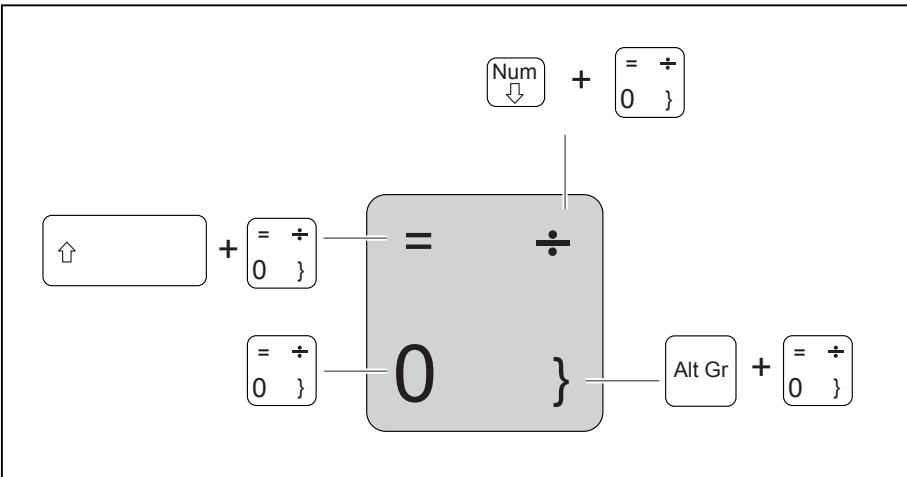
The keyboard has been designed to provide all the functions of an enhanced keyboard. Some enhanced keyboard functions are mapped with key combinations.


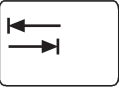




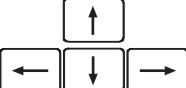


The following description of keys refers to Windows. Additional functions supported by the keys are described in the relevant manuals supplied with your application programs.

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



The illustrations shown below may differ from your actual device.



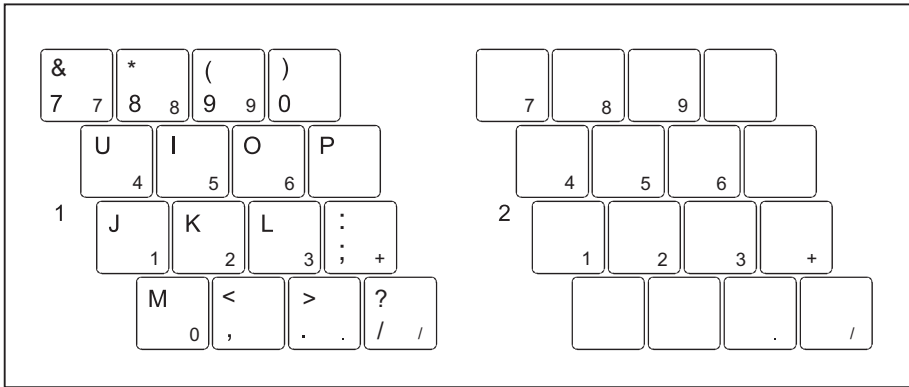
Key	Description
	Backspace key The Backspace key deletes the character to the left of the cursor.
	Tab key The Tab key moves the cursor to the next tab stop.
	Enter key (return) The Enter key terminates a command line. The command you have entered is executed when you press this key.
	Caps Lock key The Caps Lock key activates the Caps Lock mode, and the corresponding icon is displayed in the Windows information area. In Caps Lock mode, all of the characters you type appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear when that key is pressed. To cancel the Caps Lock function, simply press the Caps Lock key again.
	Shift key The Shift key causes uppercase characters to appear. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.
	Fn button The [Fn] key enables the special functions indicated on overlay keys (see "Key combinations", Page 28).
	Cursor keys The cursor keys move the cursor in the direction of the arrow, i.e. up, down, left, or right.
	Start key The Start key opens the Windows Start menu.
	Menu key The Menu key invokes the menu for the marked item.

Virtual numeric keypad

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



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



1 = Valid characters when the Num key is not activated

2 = Valid characters when the Num is activated

Further information about the status indicators can be found in chapter ["Status indicators", Page 23](#).

















Key combinations

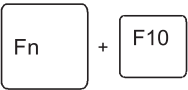
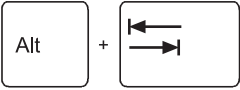



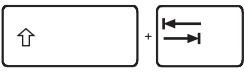
The following description of key combinations applies to Windows operating systems. Some of the following key combinations may not function in other operating systems or with certain device drivers.

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

Key combinations are entered as follows:

- ▶ Press the first key in the combination and keep it pressed.
- ▶ While holding the first key down, press the other key or keys in the combination.

Combination	Description
 + 	<p>Switching the keyboard backlighting on/off This key combination switches the lighting on and off on keyboards with backlighting.</p> <p>Sequence:</p> <ul style="list-style-type: none"> • Backlight off • Low brightness • High brightness • Backlight off
 + 	<p>Switching the speakers on and off This key combination switches your notebook's speakers off and on.</p>
 + 	<p>Switching the mouse and touchpad buttons on/off This key combination switches the touchpad and the touchpad buttons on or off.</p>
 + 	<p>Wireless components This key combination switches the Wireless and Bluetooth components on or off.</p>
 + 	<p>Decrease screen brightness This key combination decreases the screen brightness.</p>
 + 	<p>Increase screen brightness This key combination increases the screen brightness.</p>
 + 	<p>Decrease volume This key combination reduces the volume of the internal speakers.</p>
 + 	<p>Increase volume This key combination increases the volume of the internal speakers.</p>

Combination	Description
	<p>Toggle monitor output Use this key combination to select which monitor is used for display if an external monitor is connected.</p> <p>Sequence</p> <ul style="list-style-type: none"> only on the notebook's LCD monitor notebook's LCD monitor and the external monitor at the same time only on the external monitor <p>This setting is useful if you would like a high resolution and a high refresh rate on an external monitor.</p>
	<p>Switch between open applications Use this key combination to switch between several open applications.</p>
	<p>Switch to Windows 8 Desktop (Windows 8 only) Use this key combination to switch from Windows 8 Modern to Windows 8 Desktop.</p>
	<p>Switch to Windows 8 Desktop and minimize applications (Windows 8 only) Use this key combination to switch from Windows 8 Modern to Windows 8 Desktop and minimize applications.</p>
	<p>Windows security/Task-Manager This key combination opens the Windows security/Task Manager window.</p>
	<p>Back tab This key combination moves the cursor back to the previous tab stop.</p>



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*.

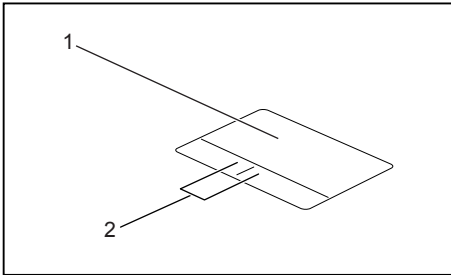
Touchpad and touchpad buttons



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.



You can use a key combination to disable the touchpad, to avoid accidentally moving the pointer on the screen (see also ["Key combinations", Page 28](#)).

Moving the pointer

- ▶ Move your finger on the touchpad.
- ↳ The pointer will move.

Change mouse properties

- ▶ To disable the touchpad, press **Fn** + **F4** key. This shortcut works on both Windows 7 and Windows 8.

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 commands

- ▶ 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 items

- ▶ 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.

Touchscreen/LCD screen function (device-dependent)

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

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

Current production technology cannot guarantee an absolutely fault-free screen display. A few isolated constantly lit or unlit pixels may be present. The maximum permitted number of such faulty pixels is specified in the international standard ISO 9241-307 (Class II).

Example:

A screen with a resolution of 1280 x 800 has $1280 \times 800 = 1024000$ pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 3 million subpixels in total. According to ISO 9241-307 (class II), a maximum of 2 light and 2 dark pixels and in addition 5 light or 10 dark subpixels or an equivalent mix (1 light subpixel counts as 2 dark subpixels) are allowed to be defective.

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

Background lighting

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

Synchronising the display on the LCD screen and an external monitor

For more information, please refer to the chapter ["Key combinations", Page 28](#) under "Display output, switch between".

Using touchscreen

You can use your finger on the touch screen to execute commands and start applications.

Action	Description
Tapping	<ul style="list-style-type: none"> ▶ Tap on a symbol, menu, button or folder to select this option or to activate it.
Tap and hold	<ul style="list-style-type: none"> ▶ Tap on a button and let your finger stay there longer until the action is taken.
Dragging	<ul style="list-style-type: none"> ▶ Tap and hold a symbol and drag it to another place. <p>You can for instance drag apps or widgets onto the home page in this way.</p>
Stroke or slide	<ul style="list-style-type: none"> ▶ Stroke your finger quickly on the screen in one direction. <p>This allows you to switch between different homepages, for example.</p>
Double-tap	<ul style="list-style-type: none"> ▶ To enlarge a view, quickly tap twice on a web page, map or another screen. <p>When you double-tap on an image in a web browser, it will be enlarged and another double-tap will make it smaller again.</p>
Zoom in/Zoom out	<ul style="list-style-type: none"> ▶ With some apps, you can enlarge the display size by moving two fingers apart on the touchscreen, and reduce it by moving your fingers together.
Input fields	<p>Data must be entered for some apps, for instance an Internet page or your name and password.</p> <ul style="list-style-type: none"> ▶ Tap on the input field. <p>An on-screen keyboard opens, with which you can enter your data.</p>

Webcam

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

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



Further information on using the webcam and on the additional settings which are possible for your webcam can be found in the help function of the program which uses the webcam.

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

Rechargeable battery

When not plugged into a power outlet, 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. The battery comes pre-installed from the factory and it is not user replaceable.

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 AC adapter (see "[AC adapter connecting](#)", [Page 19](#)).

If the battery is running low you will hear a warning alarm. If you do not connect the AC 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.

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 close the LCD screen, depending on the setting in Windows, the notebook automatically enters a power saving mode.

We recommend the following settings:

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

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

or

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



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

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



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

Never turn off your notebook while it is in a power saving mode. If the built-in battery is nearly empty, 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.

SD cards

Your notebook is equipped with an integrated SD card reader.



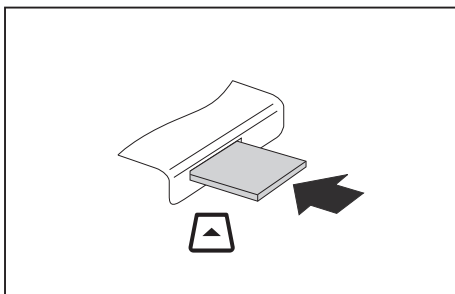
Observe the manufacturer's instructions when handling the SD cards.

Supported formats

Your notebook supports the following formats:

- SD up to 2 GB
- SDHC up to 32 GB
- SDXC up to 128 GB

Inserting the SD card

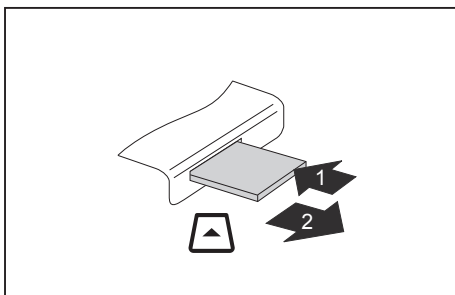


- ▶ Carefully slide the SD card into the slot. The label should be facing upward. Do not apply excessive force, as otherwise the delicate contact surfaces could be damaged.
- ↳ Depending on the particular type used, the SD card may protrude slightly from the slot.

Removing the SD card



In order to protect your data, always follow the correct procedure for removing the card (see the documentation for your operating system).



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

Speakers and microphones

Information on the exact position of the speakers and microphone can be found in ["Ports and controls", Page 9](#).

Please refer to chapter ["Key combinations", Page 28](#) for information on setting the volume and also enabling/disabling the speakers using key combinations.



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

Information on connecting headphones and a microphone can be found in ["Connecting external devices", Page 16](#).

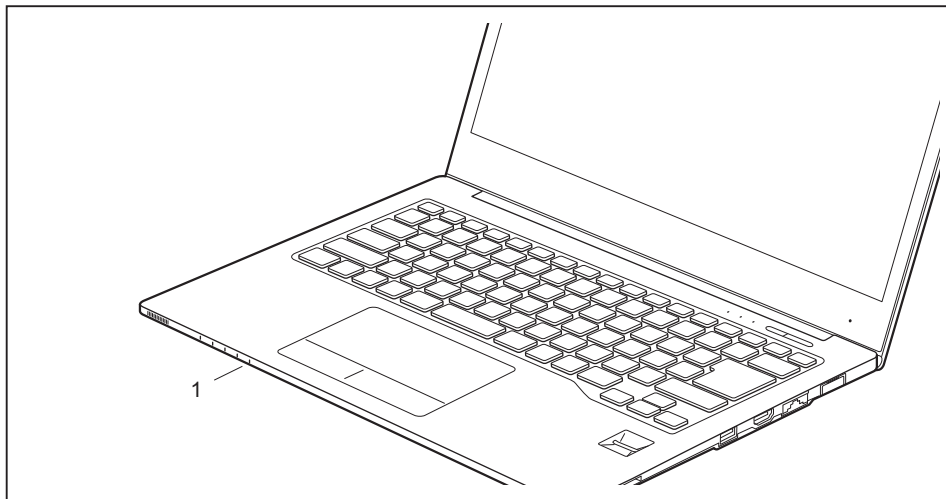
Wireless LAN/Bluetooth radio components



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

Switching the wireless components on and off

- ▶ Press the key combination **Fn** + **F5** to start the *WirelessSelector*.
- ↳ The wireless component indicator (1) will illuminate when one or more wireless components are switched on.



The Bluetooth module and the wireless LAN transmission unit (antenna) will all be switched off when you switch off the radio components.

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

Further information on WLAN and Bluetooth

For further information about WLAN or Bluetooth, see "Appendix: Miscellaneous Information".

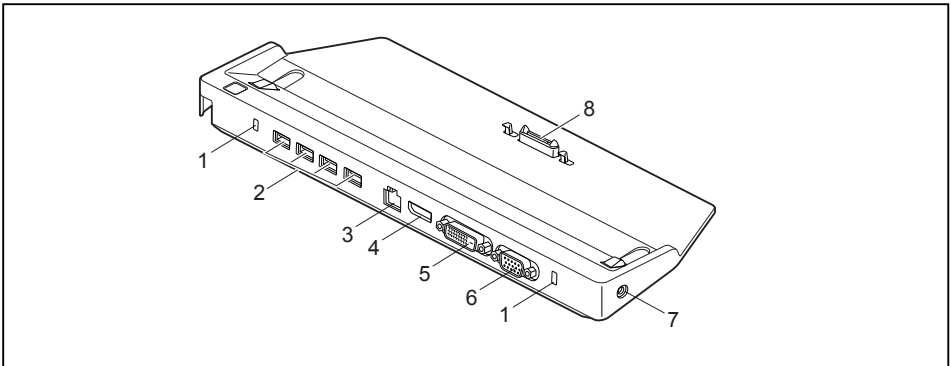
Your Port Replicator

The Port Replicator is a device that helps you to quickly connect your notebook to your peripheral devices, such as a monitor, printer etc.

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

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

Ports on the Port Replicator



- 1 = Security Lock
- 2 = USB ports
- 3 = LAN port
- 4 = DisplayPort
- 5 = DVI port

- 6 = VGA monitor port
- 7 = DC input connector (DC IN)
- 8 = Connector on the Port Replicator for the docking port on the underside of the notebook

Multi Monitoring

Up to three displays are supported: with the optional Port Replicator you can take multi-tasking to the next level. With the ability of running three monitors you will have enough real-estate to cut from one document and paste to another and keep track of email without closing one app so you can see another. This is the key to being efficient in today's business environments.

Possible monitor combinations:

LIFEBOOK ports		Port Replicator ports		
LCD notebook monitor	HDMI port	DVI-D port	DisplayPort	VGA port
X	X	X	-	-
X	X	-	X	-
X	X	-	-	X
X	-	X	X	-
X	-	X	-	X
X	-	-	X	X
-	X	X	X	-
-	X	X	-	X
-	X	-	X	X
-	-	X	X	X

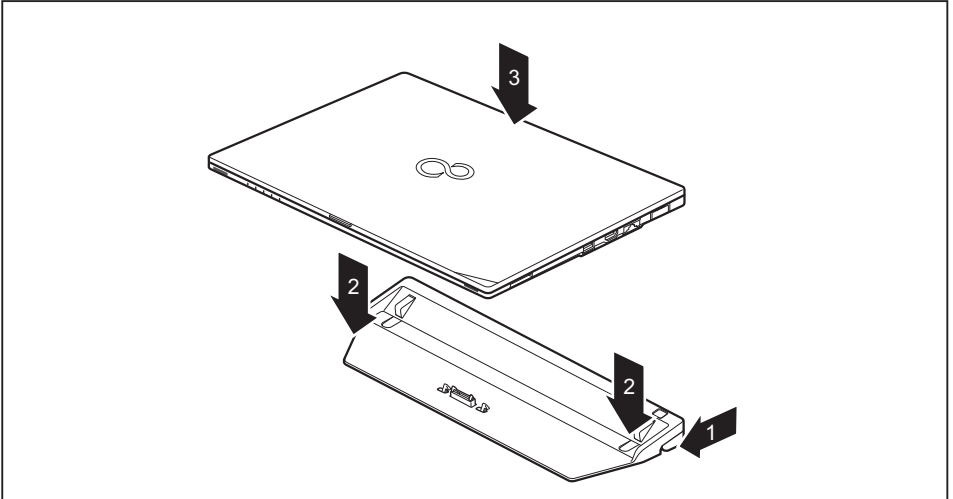
Connecting the notebook to the Port Replicator



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

Positioning the notebook with the lid closed

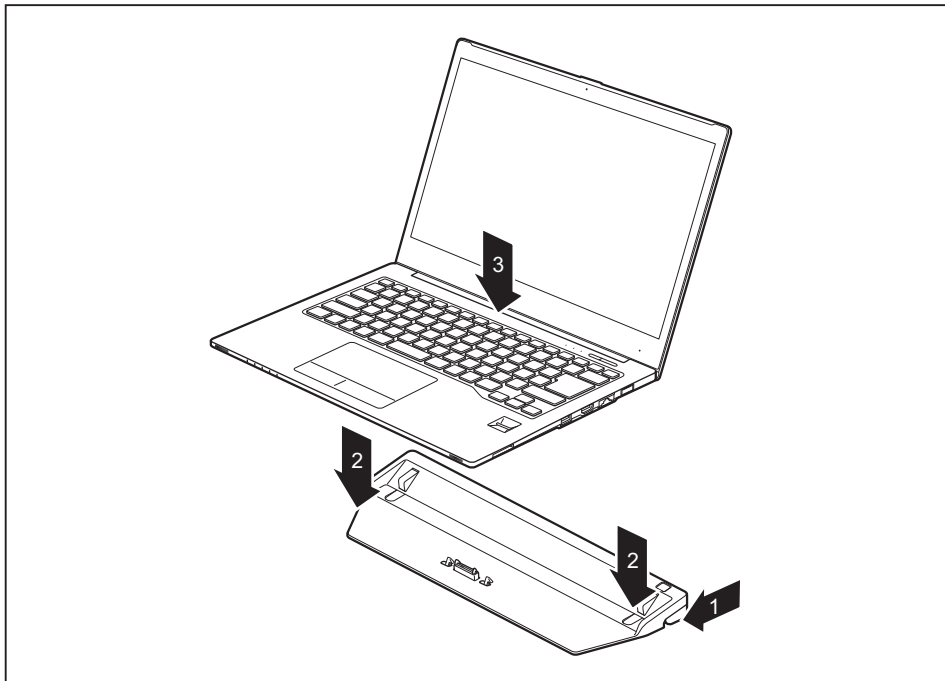
- ▶ Remove the AC plug for the AC adapter from the AC socket.
- ▶ Disconnect the AC adapter cable from the DC socket (DC IN) of the notebook.



- ▶ Open the release lever prior to docking (1).
- ▶ Position the notebook so that it is in line with the back edge of the Port Replicator (2). When the lid is closed, the Port Replicator can be easily positioned because the levers on the back are visible.
- ▶ Place the notebook onto the Port Replicator and ensure that it locks into place correctly.
- ▶ Press the lid on the center of the edge (3, hinge side).

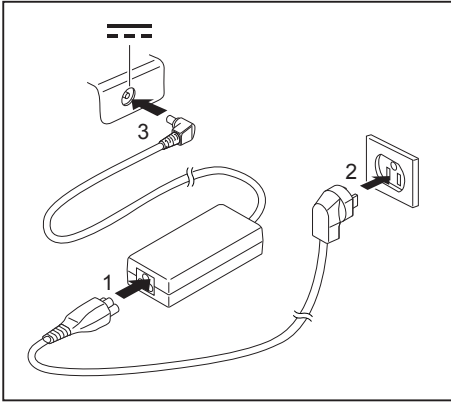
Positioning the notebook with the lid open

- ▶ Remove the AC plug for the AC adapter from the AC socket.
- ▶ Disconnect the AC adapter cable from the DC socket (DC IN) of the notebook.



- ▶ Open the release lever prior to docking (1).
- ▶ When the lid is open, the levers on the back are not visible. Therefore, position the notebook so that it is in line with the back edge of the Port Replicator (2) while checking positions of the levers with your fingers.
- ▶ Place the notebook onto the Port Replicator and ensure that it locks into place correctly.
- ▶ Press the cover on the back center (3, hinge side).

Connecting the AC adapter to the Port Replicator



- ▶ Connect the AC cable to the AC adapter (1).
- ▶ Plug the AC cable into the power outlet (2).
- ▶ Connect the AC adapter cable to the DC jack (DC IN) of the Port Replicator (3).

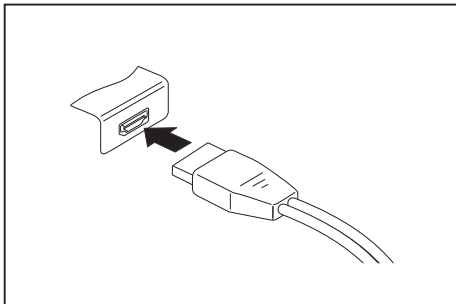
i

Power outlets will vary from country to country, see chapter ["When travelling in other countries"](#), Page 13.

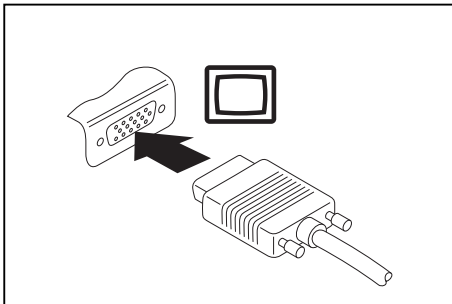
When the notebook is connected to a port replicator, the operating system creates a hardware profile for the "Docked" mode. In this profile, for example, the monitor which was last used for output is saved as a setting. This profile will be loaded as soon as the notebook is connected to a Port Replicator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

Connecting an external monitor to the Port Replicator

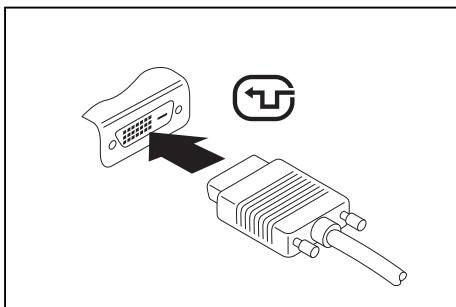
An analog monitor is connected to the analog VGA monitor port, a digital monitor to the DisplayPort or to the DVI-D monitor port on the optional Port Replicator. Monitor output is limited to a maximum of two monitors at any one time (see ["Key combinations", Page 28](#), section "Toggle output monitor").



Digital DisplayPort



Analog VGA monitor port



Digital DVI-D monitor port

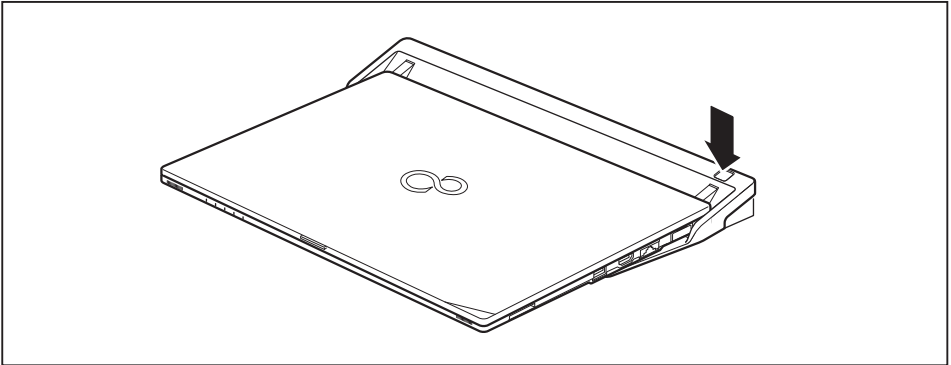
- ▶ Switch off the notebook and the external monitor.
- ▶ Plug the data cable of the external monitor into the monitor port.
- ▶ First switch on the external monitor and then the notebook.



You can also switch between the external monitor and the LCD monitor of the notebook, see chapter ["Key combinations", Page 28](#).

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

Switching on the notebook via the port replicator



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

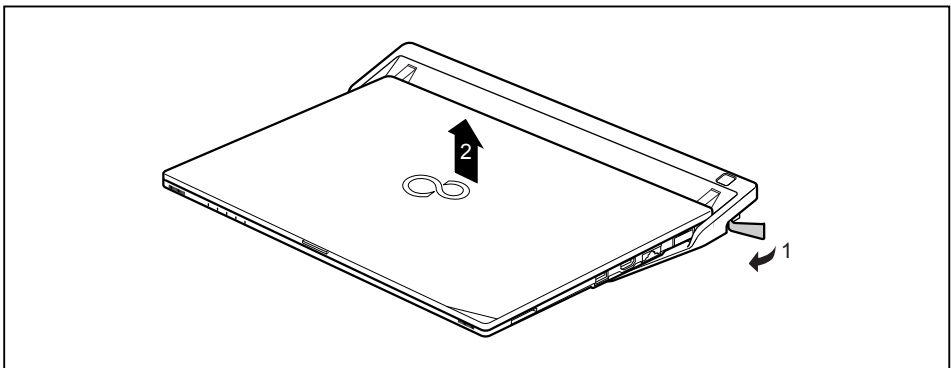
Switching off notebook via Port Replicator

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



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

Disconnecting the notebook from the Port Replicator



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

Security functions

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

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



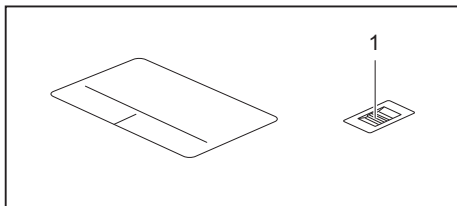
Please remember that in some cases, for example, forgetting your password, you may be locked out and unable to access your data. Therefore, please note the following information:

- Make regular backups to external data carriers such as external hard drives, CDs, DVDs or Blu-ray Discs.
- 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 our Service Desk. Deletion or resetting of passwords is not covered by your warranty and a charge will be made for assistance.

Configuring the fingerprint sensor

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



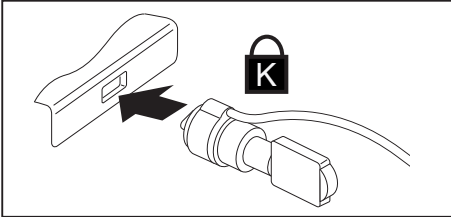
- ▶ You must install the fingerprint software in order to be able to use the fingerprint sensor (1).



For further information about the fingerprint sensor see "Appendix: Miscellaneous Information".

Using the Security Lock

Your device comes with a Security Lock mechanism for the Kensington Lock Cable. You can use the Kensington Lock Cable, a sturdy steel cable, to help protect your notebook from theft. The Kensington Lock Cable is available as an accessory.



- ▶ Fit the Kensington Lock Cable to the mechanism on your notebook.



Attach another Kensington Lock Cable to your Port Replicator to protect your Port Replicator from theft as well. There are two Security Locks on your Port Replicator.

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



Please refer to the [""Settings in BIOS Setup Utility", Page 53](#) section for a description of how to call up and operate the *BIOS Setup Utility*.

Setting supervisor and user HDD password

- ▶ Start the *BIOS Setup Utility* and go to the *Security* menu.
- ▶ Select the *Set supervisor HDD 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 HDD password, select *Set user HDD password* and proceed exactly as when configuring the supervisor HDD 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 HDD password in order to open the *BIOS Setup Utility*. Please note that the user HDD password only provides access to a few of the BIOS settings.

Changing the supervisor or user HDD password

You can only change the supervisor HDD password when you have logged into the *BIOS Setup Utility* with the supervisor HDD 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 HDD password* or *Set user HDD 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 HDD password simultaneously deactivates the user HDD password.

Password protection for booting of the operating system



With the supervisor HDD password you have set in the *BIOS Setup Utility* (see section "[Setting supervisor and user HDD password](#)", Page 48), you can also prevent booting of the operating system.

Activating system protection

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

Trusted Platform Module (TPM) (device-dependent)

To use the TPM, you **must** activate the TPM in the *BIOS Setup* before the software is installed. The condition for this is that you have assigned at least the supervisor HDD password (see ["Security functions", Page 46](#)).

Enabling TPM

- Requirement: You have assigned a supervisor HDD password, see ["Security functions", Page 46](#).
- ▶ Call up the BIOS Setup and select the *Security* menu.
- ▶ Mark the *TPM Security Chip Setting* field and press the Enter key.
- ▶ Select *Enabled* to activate the TPM.
- ↳ Once you have activated the TPM the *Clear Security Chip* option appears.
Select *Clear Security Chip* to delete the holder in the TPM. By clicking on *Enabled*, all secret keys (e.g. SRK - Storage Root Keys, AIK - Attestation Identity Keys etc.) generated by applications are deleted.

Please note that you will then no longer be able to access the data you have encrypted with the keys based on that holder.
- ▶ Select the *Exit Saving Changes* option in the Exit menu.
- ▶ Press the Enter key and select *Yes*.
- ↳ The notebook will restart, and TPM will be enabled after the reboot.

Disabling TPM

- Requirement: You have assigned a supervisor HDD password, see ["Security functions", Page 46](#).
- ▶ Call up the BIOS Setup and select the *Security* menu.
- ▶ Mark the *TPM Security Chip Setting* field and press the Enter key.
- ▶ Select *Disabled* to deactivate the TPM.
- ▶ From the *Exit* menu, choose the option *Exit Saving Changes*.
- ▶ Press the Enter key and select *Yes*.
- ↳ Your notebook will now restart and TPM will be disabled.

Removing and installing components during servicing



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

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:

<i>Info</i>	Displays information relating to the BIOS, processor and notebook
<i>System</i>	Setting the calendar clock, configuring the SATA drive
<i>Advanced</i>	Configuration of various hardware components, such as mouse, keyboard, processor
<i>Security</i>	Password settings and security functions
<i>Boot</i>	Configuration of the start-up sequence
<i>Exit</i>	Exits the <i>BIOS Setup Utility</i>

Starting the BIOS Setup Utility

- ▶ Reboot the device (switch off/on to reboot the operating system).
- ↳ The following or a similar display appears on the screen at start-up:

```
<F2> BIOS Setup <F12> Boot Menu
```
- ▶ Press the function key **[F2]**.
- ▶ If a password has been assigned, enter the password and press the Enter key.



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

The *BIOS Setup Utility* starts.

Operating BIOS Setup Utility



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

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

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

Exiting BIOS Setup Utility

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

Exit Saving Changes - save changes and exit BIOS Setup Utility

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

Exit Discarding Changes – Discard changes and exit BIOS Setup Utility

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

Load Setup Defaults – Copy Standard Entries

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

Discard Changes – Discard changes without exiting the BIOS Setup Utility

- ▶ To discard the changes you have made, select *Discard Changes* and *Yes*.
- ↳ The settings in place when *BIOS Setup Utility* was called remain effective. You can now make additional settings in the *BIOS Setup Utility*.
- ▶ If you want to exit *BIOS Setup Utility* with these settings, select *Exit Saving Changes* and *Yes*.

Save Changes - save changes without exiting the BIOS Setup Utility

- ▶ To save the changes, select *Save Changes* and *Yes*.
- ↳ The changes are saved. You can now make additional settings in the BIOS Setup Utility.
- ▶ If you want to exit BIOS Setup Utility with these settings, choose *Exit Saving Changes* and *Yes*.

Save Changes and Power Off

- ▶ To save the changes and switch off your device, select *Save Changes and Power Off* and *Yes*.
- ↳ The changes are saved. Your device is shut down.

Troubleshooting and tips

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

- ▶ Make a note of the steps and the circumstances that led to the fault. Also make a note of any error messages displayed.
- ▶ Switch the notebook off.
- ▶ Please contact the Hotline/Service Desk.



You can contact Fujitsu Service and Support in the following ways:

- Toll free: 1-800-Fujitsu (1-800-838-5487)
- Website: "<http://solutions.us.fujitsu.com/www/content/support/contact/index.php>"

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 optimize 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 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://solutions.us.fujitsu.com>"

Help if problems occur

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

- ▶ Note the ID number of your device. The ID number is found on the type rating plate on the back or underside of the casing.
- ▶ For further clarification of the problem, contact the Fujitsu Service Desk. When you do this, please have ready the ID number and serial number of your system.

Using the reset key

If the device stops responding and no longer reacts to the ON/OFF button, use the reset key to shut down the device.

- ▶ Disconnect the device from the AC adapter.
- ▶ Push a pen or a piece of wire (such as a paper clip) firmly into the opening of the reset key to shut down the system.
- ▶ Connect the AC adapter to the device again.
- ▶ Switch the device on again.

Recovering your Factory Image

In the event you need to restore your original Factory Image refer to the steps in "Appendix: Miscellaneous Information".

The notebook's date or time is incorrect

Cause	Troubleshooting
Time and date are incorrect.	▶ With the <i>BIOS-Setup-Utility</i> , you can set the date and time in the <i>main</i> menu.
If the time and date are still set incorrectly after switching on the notebook.	▶ Please contact your sales outlet or our Hotline/Service Desk.

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

Cause	Troubleshooting
The virtual numeric keypad of your device is activated, see "Virtual numeric keypad", Page 28	▶ Press the [Num] key.

The notebook's LCD screen remains blank

Cause	Troubleshooting
Monitor is switched off.	▶ Press a key or touch the touchpad.
External monitor or television set connected.	▶ Press the key combination to switch the screen output, see "Key combinations", Page 28 .

The LCD screen is difficult to read

Cause	Troubleshooting
Reflected glare	<ul style="list-style-type: none"> ▶ Turn the notebook or alter the tilt of the LCD screen. ▶ Increase the brightness of the screen.

The external monitor remains blank

Cause	Troubleshooting
Monitor is switched off.	▶ Switch the external monitor on.
Power saving has been activated (monitor is blank).	▶ Press any key to continue.
Brightness is set to dark.	▶ Adjust the brightness of the monitor.
Screen output is set to the notebook's LCD screen	▶ Press the key combination to switch the screen output, see " Key combinations ", Page 28 .
The external monitor's power cable or data cable is not connected properly.	<ul style="list-style-type: none"> ▶ Switch off the external monitor and the notebook. ▶ Check whether the power cable is plugged properly into the external monitor and into the power outlet. ▶ 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.	<ul style="list-style-type: none"> ▶ Terminate the application program in Windows by pressing [Alt] + [F4]. If the fault persists after closing the program, use the key combination for switching the screen output (see "Key combinations", Page 28) to switch over to the notebook's LCD screen. Change the following setting: <ul style="list-style-type: none"> ▶ Set the screen resolution: Set the screen resolution as described in the documentation for your operating system. ▶ Select monitor: Select monitor 1 or 2 as described in the documentation for your operating system.

The notebook cannot be started

Cause	Troubleshooting
The battery is dead.	<ul style="list-style-type: none"> ▶ Charge the battery. <p>or</p> <ul style="list-style-type: none"> ▶ Connect the AC adapter to the notebook.
The power adapter is not connected correctly.	<ul style="list-style-type: none"> ▶ Check whether the AC adapter is connected correctly to the notebook. ▶ Switch the notebook on.

The notebook stops working

Cause	Troubleshooting
Notebook is in energy saving mode.	<ul style="list-style-type: none"> ▶ Leave energy saving mode.
An application program has caused the malfunction.	<ul style="list-style-type: none"> ▶ 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.	<ul style="list-style-type: none"> ▶ Charge the battery. <p>or</p> <ul style="list-style-type: none"> ▶ Connect the AC adapter to the notebook.

The printer does not print

Cause	Troubleshooting
The printer is not switched on.	<ul style="list-style-type: none"> ▶ 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.	<ul style="list-style-type: none"> ▶ 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.	<ul style="list-style-type: none"> ▶ 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 wireless connection to a network does not work

Cause	Troubleshooting
The wireless component is disabled.	<ul style="list-style-type: none"> ▶ Switch the radio component on (see "Switching the wireless components on and off", Page 38).
The wireless component is enabled. Despite this, the wireless connection to a network does not work.	<ul style="list-style-type: none"> ▶ Check whether the radio connection is switched on via the software. ▶ Further information on using the radio component can be found in the help files.

Error messages on the screen

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



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

Error message/cause	Resolution
<p><i>CMOS battery bad</i></p> <p>If the error message occurs repeatedly, the buffer battery in the notebook is flat.</p>	<ul style="list-style-type: none"> ▶ Contact your sales outlet or our customer service centre.
<p><i>System CMOS checksum bad - default configuration used</i></p> <p>The system configuration information is incorrect.</p>	<ul style="list-style-type: none"> ▶ Switch the notebook off. ▶ Switch the notebook on. ▶ Press the function key [F2] to access the <i>BIOS Setup</i>. ▶ In the <i>BIOS Setup</i>, select the <i>Exit</i> menu. ▶ Select the entry <i>Load Setup Defaults</i>. ▶ Select <i>OK</i> and press the Enter key.
<p><i>Extended memory failed at offset: xxxx Failing Bits: zzzz zzzz</i></p> <p>When testing the extended memory an error has resulted at the address xxxx.</p>	<ul style="list-style-type: none"> ▶ Check whether the additional memory module has been inserted correctly.
<p><i>Failure Fixed Disk n</i></p> <p>The settings of the hard disk drive are incorrect.</p>	<ul style="list-style-type: none"> ▶ Start the <i>BIOS Setup (Primary Master submenu)</i> and select the correct settings.
<p><i>Keyboard controller error</i></p>	<ul style="list-style-type: none"> ▶ Switch the notebook off with the ON/OFF button. ▶ Wait 3 - 5 seconds and switch on the notebook again.
<p><i>Keyboard error</i></p>	<p>If you are using an external keyboard:</p> <ul style="list-style-type: none"> ▶ Check the connection and reboot the notebook.

Error message/cause	Resolution
<i>nn Stuck key</i>	▶ Make sure that no key is pressed.
<i>Operating system not found</i>	<ul style="list-style-type: none"> ▶ Check in the <i>BIOS Setup</i> whether your hard disk has been set correctly. ▶ Make sure that the operating system is installed on the corresponding drive.
<p><i>Press <F1> to resume, <F2> to SETUP</i></p> <p>This error message appears if an error occurs during the self-test before starting the operating system.</p>	<ul style="list-style-type: none"> ▶ Press the [F1] function key to start the operating system. ▶ Press the function key [F2] to access the <i>BIOS Setup</i>.
<p><i>Previous boot incomplete - Default configuration used</i> Due to an error during the previous system boot, default values were used for certain settings. Check the settings in the BIOS Setup.</p>	▶ Press the [F1] function key when prompted to do so.
<i>Real time clock error</i>	▶ Contact your sales outlet or our customer service centre.
<i>nnnnK Shadow RAM failed at offset: xxxx Failing Bits: zzzz</i>	▶ Contact your sales outlet or our customer service centre.
<i>System battery is dead - Replace and run SETUP</i>	▶ Contact your sales outlet or our customer service centre.
<i>System cache error - Cache disabled</i>	▶ Contact your sales outlet or our customer service centre.
<i>System timer error</i>	▶ Contact your sales outlet or our customer service centre.

Technical data

LIFEBOOK

Ambient conditions	
Operating temperature	41°F – 95° F / 5 °C – 35 °C
Dimensions	
Width x depth x height	12.99 in x 9.06 in x 0.36 in / 0.61 in / 330 mm x 230 mm x 9.2 mm /15.5 mm (without rubber feet)
Weight	Approx. 3.15 lbs / 1.43 kg
Main memory	
Slots	2 GB onboard memory plus 1 slot 204-pin DDR3L SDRAM PC3L-12800 for 2 GB, 4 GB or 8 GB RAM modules, max. 10 GB memory



The data sheet for the device provides further technical data. You will find the data sheet on your device or on the Internet at ["http://solutions.us.fujitsu.com"](http://solutions.us.fujitsu.com).

Rechargeable battery

	4-cell rechargeable battery
Rated capacity	45 Wh

AC adapter

Electrical data	
Primary	65 W
Rated voltage	100 V – 240 V (automatic)
Rated frequency	50 Hz – 60 Hz (automatic)
Secondary	
Rated voltage	19 V
Max. rated current	3.42 A

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

Manufacturer's notes

Disposal and recycling

You can find information on this subject on your notebook or on our website ("http://solutions.us.fujitsu.com/www/content/products/trade-in_program/").

Recycling your battery

Over time, the batteries that run your mobile computer will begin to hold a charge for a shorter amount of time; this is a natural occurrence for all batteries. When this occurs, you may want to replace the battery with a fresh one*. If you replace it, it is important that you dispose of the old battery properly because batteries contain materials that could cause environmental damage if disposed of improperly.

Fujitsu is very concerned with environmental protection, and has enlisted the services of the Rechargeable Battery Recycling Corporation (RBRC)**, a nonprofit public service organization dedicated to protecting our environment by recycling old batteries at no cost to you.

RBRC has drop-off points at tens of thousands of locations throughout the United States and Canada. To find the location nearest you, go to "www.RBRC.org" or call 1-800-822-8837.

If there are no convenient RBRC locations near you, you can also go to the EIA Consumer Education Initiative website "<http://EIAE.org/>" and search for a convenient disposal location.



Remember – protecting the environment is a cooperative effort, and you should make every effort to protect it for current and future generations.

* To order a new battery for your Fujitsu mobile computer, go to the Fujitsu shopping site at "www.shopfujitsu.com" in the US or "www.fujitsu.ca/products/notebooks" in Canada.

** RBRC is an independent third party to which Fujitsu provides funding for battery recycling; RBRC is in no way affiliated with Fujitsu.

Declarations of Conformity

This device complies with Part 15 of the FCC rules. Operations are subject to the following two conditions: (1) This device may not cause harmful interference, (2) This device must accept any interference received, including interference that may cause undesired operation.

Regulatory notices

FCC Notices

NOTICE:

Changes or modifications not expressly approved by Fujitsu could void this user's authority to operate the equipment.

Notice to Users of Radios and Television

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet that is on a different circuit than the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

DOC (Industry CANADA) notice

Radios and Television

This Class B digital apparatus meets all requirements of Canadian Interference-Causing Equipment Regulations.

CET appareil numérique de la class B respecte toutes les exigence du Règlement sur le matériel brouilleur du Canada.

UL Notice

IMPORTANT SAFETY INSTRUCTIONS

This unit requires an AC adapter to operate. Only use UL Listed I.T.E. adapters with an output rating of 19 VDC, with a minimum current of 3.42A (65W). The correct output rating is indicated on the AC adapter label. Refer to the illustration below for the correct AC Adapter output polarity:



When using your notebook equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

SAVE THESE INSTRUCTIONS

For Authorized Repair Technicians Only



CAUTION:

For continued protection against risk of fire, replace only with the same type and rating fuse.



WARNING:

Danger of explosion if Lithium (CMOS) battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

FCC Regulatory information

Federal Communications Commission statement

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of this device.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from the one the receiver is connected to.
4. Consult the dealer or an experienced radio/TV technician for help.

Regulatory Notes and Statements

Radio device, health and authorisation for use

Radio-frequency electromagnetic energy is emitted from the wireless devices. The energy levels of these emissions, however, are far much less than the electromagnetic energy emissions from wireless devices such as mobile phones. Radio devices are safe for use by consumers because they operate within the guidelines found in radio frequency safety standards and recommendations.

The use of the radio devices may be restricted in some situations or environments, such as:

- on board an airplane, or
- in an explosive environment, or
- in situations where the interference risk to other devices or services is perceived or identified as harmful.

In cases in which the policy regarding use of radio devices in specific environments is not clear (e.g., airports, hospitals, chemical/oil/gas industrial plants, private buildings), obtain authorization to use these devices prior to operating the equipment.

Regulatory Information/Disclaimers

Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license. This device complies with Part 15 of FCC Rules, as well as ICES 003 B / NMB 003 B. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesirable operation.

Modifications not expressly authorized by Fujitsu may invalidate the user's right to operate this equipment.

ENERGY STAR Compliance



Your Fujitsu system is an ENERGY STAR qualified mobile PC. By choosing a computer with the latest energy-saving technology, you're helping to preserve our environment for future generations. ENERGY STAR is a joint program of the U.S. Environmental Protection Agency, U.S. Department of Energy, Natural Resources Canada, and other governments around the world helping us save money while protecting the environment through energy efficient products and practices. With energy costs and global warming top-of-mind for consumers, Fujitsu is committed to offering solutions that help consumers conserve energy and improve the quality of our environment.

Sleep Mode:

You will notice that your computer is initially set so that the display turns off after 15 minutes of user inactivity, and the computer goes into Sleep mode after 20 minutes of user inactivity. When going into Sleep mode, the computer also reduces the speed of any active Ethernet network links. To "wake" the computer from Sleep mode, press the Suspend/Resume Button.

Energy saving benefits:

Fujitsu ENERGY STAR qualified mobile PCs use about half as much electricity as standard equipment – saving half in utility costs. But more than that, ENERGY STAR also makes a difference for the environment. Did you know that the average house can be responsible for twice the greenhouse gas emissions as the average car? That's because every time you flip on a light switch, run your dishwasher, or turn on your PC, you use energy, which means more greenhouse gas emissions from power plants. So the more energy we can save through energy efficiency, the more we help to reduce greenhouse gases and the risks of global warming.

To learn more about the important ENERGY STAR program, visit: "www.energystar.gov".

To read about how Fujitsu is supporting Sustainable Management along with several other environmental activities, visit the Fujitsu Corporate Citizenship page at: "<http://www.computers.us.fujitsu.com/www/content/aboutus/environmental/environment.php>".

Appendix

Image Backup and Recovery Procedures

Thank you for purchasing a Fujitsu computer. Fujitsu is committed to bringing you the best computing experience with your new system.

It is very important that you create DVD copies of your Recovery Image and Bootable Disk before beginning to use your system. To do so, follow the instructions in the “Creating a Backup of Bootable Disk and Recovery Image” section of this document.

It is also important that you create a copy of the software that is essential for your system to access the internet (hereafter called “essential access software”) to external writable media or an external drive. To do so, follow the instructions in the “Creating a Backup of the System-Specific Software Drivers”.

Creating a Backup of Bootable Disk and Recovery Image

When you purchased your new system, a copy of the recovery image was loaded into a hidden partition on your hard disk drive. Having a copy of the recovery image available to you means that in the event of system failure, you will be able to restore it and re-install the essential access software using Fujitsu Software Auto Installer.

To make a copy of the recovery image to DVD disks, you will need three or four blank disks to create the copy. After creating the copy, be sure to label the disks and keep them in a safe place to ensure they do not get damaged.



Note: If your system does not have an internal writable DVD drive, connect your system to an external drive* before beginning the following steps.

1. Launch *System Restore and Recovery* from the desktop icon. It will allow you to create the Bootable Disk and the Recovery Image Disk Set.
2. On “Step 1: Select the Bootable Disk from the list”:
 - a. Select a media type.
 - b. Notice the number of disks that are needed for the set.
 - c. Click *Next* to proceed.
3. On “Step 2: Confirm your Recovery Disk”, click *Next*.
4. On “Step 3” follow the on-screen instructions to make the disk or disk set, then click *Start*. It takes approximately 20 minutes to make one disk.
5. On “Step 4”, when the disk creation is completed, a message appears. Click *Finish* to exit the program.
6. Repeat Step 1: Select *Recovery Disk* from the list and repeat the above steps 2(a), 2(b), 2(c), 3, 4 and 5.

* DEPENDING UPON YOUR OPTICAL DRIVE AND MEDIA FORMAT USED, SOME MEDIA TYPES MAY BE INCOMPATIBLE FOR CREATING IMAGE BACKUPS.

Creating a Backup of Essential Access Software

When you purchased your new system, a “Fujitsu Software Extractor” shortcut was loaded to “C:\Fujitsu\Drivers\AutoInstaller”. This shortcut allows you to save the software driver packages along with the extracted Auto Installer software package to a selected location. It is recommended that you save these packages to writable media or an external drive. This ensures that in the event of system failure you will be able to re-install the essential access software.

1. Open the C:\Fujitsu\Drivers\AutoInstaller\ folder
2. Run “Fujitsu Software Extractor” as an Administrator
 - a. Right-click on Fujitsu Software Extractor.
 - b. Select the “Run as Administrator” option from the menu that is displayed.
3. The default save location is C:\Fujitsu\ AutoInstaller\ Drivers\. You can change the location by clicking on the *Browse* button and selecting your preferred location.

Note: It is recommended that you change the default location and save the software packages to the external writable media or drive.

4. Click on the *Save Packages* button.
5. Fujitsu Software Extractor copies the zipped software packages and Readme files, and extracts the Auto Installer folder to the selected location.



Note: The extracted Auto Installer will later be used to install the software automatically on the system in the event of generic image restoration when the software is not pre-installed in the image.

RECOVER YOUR SYSTEM WHEN THE HARD DRIVE IS STILL ACCESSIBLE

Using the Recovery and Utility Tools

The Recovery and Utility tools consist of a variety of tools that will help you recover your recovery image and system images, and delete the data from your hard disk.

Methods for accessing the utilities

Recovery and Utility Tools are preinstalled in a hidden partition by the factory, or they can be accessed by using the bootable disk.



Note: The Recovery and Utility tools may be deleted from your hard disk drive if you modify the partitions. If that occurs, you will not be able to use the hidden partition for booting to Recovery and Utility Tools, but you will still be able to boot from the Bootable Disk.

Determining whether Recovery and Utility is pre-loaded

1. Turn on or reboot your system. When the Fujitsu logo appears, press the **F12** key.
2. Use the **Tab** key to get to the Application Menu.
3. Check whether the Recovery and Utility option is present. If it is not present, it means that the utility must be used from the Bootable Disk. Proceed to “Running Recovery and Utility from the Bootable Disk” if Recovery and Utility is unavailable.

Running Recovery and Utility from hard disk

1. Turn on or reboot your system. When the Fujitsu logo appears, press the **F12** key.
2. Use the **Tab** key to get to the Application Menu.
3. Cursor down to *Recovery and Utility* and press the **Enter** key.
4. Choose your language, if necessary. Select *Recovery and Utility* to proceed.
5. Three tool options appear: *Diagnostics*, *Recovery*, and *Utility* (refer to the Recovery and Utility tools section below for instructions on how to use these tools).
6. If this was successful please skip the next step and go to “Recovery and Utility tools.”
7. If this was NOT successful, please go to the next step.

Running Recovery and Utility from the Bootable disk

To verify/change the boot-up priority (rather than booting-up from the hard drive or an external media drive), perform the following steps:

1. Power on your system. When the Fujitsu logo appears on the screen, press the **F12** key.
2. Insert the bootable disk into the drive tray.
3. Highlight the CD/DVD option from the Boot menu, then press **Enter**.
4. Click *OK*.
5. Select CD/DVD boot mode: UEFI Mode, if applicable, and then press **Enter**. While the files are being loaded from the disk, the Fujitsu logo screen will appear followed by a progress bar at the bottom of the screen.

Recovery and Utility tools



Note: Recovery and Utility tools may not be available on your system depending on the region from which the system was shipped.

Diagnostics tool: The Diagnostics tool is designed for use by IT professionals. It is not likely you will need to use this tool. If you should need to use this tool, perform the following steps:

1. Press the *Diagnostics Tool* button to start the Diagnostics tool.
2. Read the note, and then click *OK*.
3. Choose one or more of the following options for diagnostics on the Fujitsu Hardware Diagnostics Tool window: CPU, Memory, Display, Hard Disk, CD/DVD/BD, Floppy Disk, Keyboard, and Mouse.
4. Click the *Option* button in the Tool menu to specify how many times the tool should run diagnostics on each selected component.
5. Press *Execute* to start the Diagnostics tool.
6. After the execution is completed, the selected components are circled in red to indicate that they have been diagnosed and the result dialog window opens. Click *Close* to close the window.
7. Click *End* to close the Diagnostics tool, and then click *Yes* to confirm the end of diagnostics session.

Recovery tool: The Recovery tool contains two options:

- Restore C Drive: Restore recovery image (only C: drive)
- Restore Full Hard Drive: Restore recovery image (full hard drive).

You can use these tools to restore the Recovery Image from the hidden partition, and perform a full hard drive recovery. Please refer to instructions above for details on how to create a Recovery Image.

Restore the Recovery Image from Hidden Partition

1. Click [Restore C: drive] from Recovery and Utility tools
2. The progress bar is followed by “Restore Recovery image (only C: drive)” screen confirming that the Image will be restored to the C: drive. Click *Next*.
3. Read the instruction screen and select *Agree*, then click *Next*.
4. Click *OK* to acknowledge the warning message to restore recovery image to the C: drive.
5. When the progress bar appears, wait for the process to complete.
6. Click *Finish* when the process completes; the computer will restart to Windows.
7. Follow the steps listed in the “Auto Installation support for software packages from hidden partition” section.
8. Download FSDM (Fujitsu Software Download Manager) from the support site and download all the software applicable to the model and OS using FSDM.
9. Follow the steps listed in “Auto Installation support for software packages downloaded from support website” section.

RECOVER YOUR SYSTEM WHEN THE HARD DRIVE IS NOT BOOTABLE

Restore the Recovery Image for Full Hard Drive

Follow the steps in the “Recovering your Recovery Image using Recovery and Utility (for new hard drive or non-bootable hard drive)” section. You will need the Bootable Disk and the Recovery Disk Set for this task.

Utility tool: If applicable for your region, the Utility tool contains two options: Hard Disk Data Delete and Partition Creation.

The Hard Disk Data Delete utility is used to delete all data on the hard disk and prevent the data from being reused.



NOTE: Do not use the Hard Disk Data Delete utility unless you are absolutely certain that you want to erase your entire hard disk, including all partitions.

To delete hard disk data:

1. Click the *Hard Disk Data Delete* button. The progress bar appears, followed by the EULA screen.
2. Agree to the EULA and click *Next*.
3. Choose the hard disk from which the data should be deleted in the list of hard disks and click *Next*.

The Partition Creation utility is used to change the C: and D: drive partition sizes.

To run this utility: (This is not an option when using Windows 7.)

1. Click the *Partition Creation* button.
2. A progress bar appears, followed by the EULA screen. Agree to the EULA.
3. On the *Recovery Tool - Partition Creation* screen, move the slider to set disk size, and then click *OK*.
4. Click *Yes* in the *Partition Creation* confirmation dialog.



WARNING: It is highly recommended that you send your product to Fujitsu Service to replace a hard drive. A mistake could possibly destroy your computer, your new hard drive or both.

Recovering Your Recovery Image Using Recovery and Utility (for new hard drive or non-bootable hard drive)

If you have installed a new hard drive or your hard drive is not bootable, perform the following steps.



Note: You will need the Bootable disk and Recovery Image disk set for this recovery.

1. Power on your system. When the Fujitsu logo appears on the screen, press the **Enter** key.
2. Insert the bootable disk in your DVD drive, then click *OK*.
3. Highlight the CD/DVD option from the Boot Menu and press **Enter**.
4. Select CD/DVD boot mode: Select *UEFI Mode*, if applicable and press **Enter**. While the files are being loaded from the disk, the Fujitsu logo screen appears followed by a progress bar at the bottom of the screen.
5. Choose your language, if necessary.
6. Three tool options appear: *Diagnostics*, *Recovery* and *Utility*. Select *Recovery*.
 - For Windows 8.1: Select *Restore full hard drive*
 - For Windows 7: Select *Restoring the Factory Image (full hard drive recovery)*
7. Click *Next* to confirm full hard drive restoration. All data on HDD will be deleted.
8. Agree to EULA by selecting *Agree* option and clicking *Next*.
9. Click *Next* on the Recovery Disk Check screen to verify that the bootable disk has been inserted into the optical drive.
10. The *Checking for Recovery Disk* screen appears followed by the prompt to insert the first disk. Click *OK* to continue. Repeat this step for all disks. After all recovery disks have been checked and the check has been completed, click *Next*.
11. Follow the prompt to reinsert the first recovery disk and click *Next*.
12. Click *OK* when you receive the final warning informing you that all data on drive C will be lost. This starts the recovery process.
13. Follow the prompts to insert the next recovery disks and click *OK*.
14. After the copying of the image to the HDD completes the restore process is complete, click *Finish* to restart the system. The computer will restart automatically and then go through the first boot process.
15. Follow the steps listed in "Auto Installation support for essential access software from backup location" section.
16. Download FSDM (Fujitsu Software Download Manager) from support site and download all the software applicable to the model and OS using FSDM.
17. Follow the steps listed in "Auto Installation support for essential access software downloaded from support website."

Installing the Software after the Recovery Image is Restored

Auto-installation support for essential access software from hidden partition

The below listed steps are applicable only in cases in which the recovery image restore and hidden partition contents have not been wiped out.

1. After the recovery image is restored, launch the desktop icon "Fujitsu Software Auto Installer".
2. Double-click on "Fujitsu Software Auto Installer" desktop icon.
3. Click *Yes* on User Account Control Dialog box. This will take some time to process the software packages. A message will be displayed during this time, "Please wait while the content is being processed".
4. If EULA is displayed for Fujitsu Software Auto Installer, accept the EULA, otherwise continue.
5. Then Fujitsu Software Auto Installer user interface will be launched providing ability to auto-install the essential access software on the system.
6. It is recommended that you install all the software in the listed order. You can *Select All*, to install the software in the order listed.
7. Click *Install* to start the installation.
8. After installing all the selected drivers, Installation Results window will be displayed. Click *OK*.
9. "You must restart the system for the settings to take effect. Do you wish to reboot now?" message appears. Select *Yes*.
10. The system will now reboot.
11. You can now connect to the internet and download FSDM (Fujitsu Software Download Manager) from the support site and download all the software applicable to the model and OS using FSDM if they are not downloaded yet.

Auto-installation support for essential access software from backup location

The below listed steps are applicable in cases in which a backup copy was created as mentioned in the section “Creating a Backup of essential access software”.

1. It is important to have the extracted Auto installer software package folder and Readme file in the same location as other software folders. Otherwise auto-installation of the software will not be supported.
2. Inside the Auto Installer software package, launch FjAutoinstall.exe as an Administrator.
3. Click *Yes* on the User Account Control dialog box. This will take some time to process the software packages. A message will be displayed during this time stating, “Please wait while the content is being processed”.
4. If EULA is displayed for Fujitsu Software Auto Installer, accept the EULA, otherwise continue.
5. The Fujitsu Software Auto Installer user interface will be launched providing ability to auto install the essential access software on the system.
6. It is recommended that you install all the software in the listed order. You can “Select All”, to install the software in the order listed.
7. Click the *Install* button to start the installation.
8. After installing all the selected drivers, *Installation Results* window is displayed. Click *OK*.
9. “You must restart the system for the settings to take effect. Do you wish to reboot now?” message appears. Select *Yes*.
10. The system will now reboot.

Auto Installation support for the software downloaded from support website

1. Download FSDM (Fujitsu Software Download Manager) from the support site and download all the drivers applicable to the model and OS using FSDM if they are not downloaded yet.
2. When the software packages are downloaded from web, it is important to download the Auto Installer Software package and the model/language- specific Readme file if you prefer to auto install the software.
3. It is important to have the extracted Auto Installer software package folder and Readme file in the same location as other software folders. Otherwise auto-installation of the software will not be supported.
4. Inside the Auto Installer software package, launch FjAutoinstall.exe as administrator.
5. Click *Yes* on the User Account Control dialog box. This will take some time to process the software packages. A message will be displayed during this time stating “Please wait while the content is being processed”.
6. If EULA is displayed for Fujitsu Software Auto Installer, accept the EULA, otherwise continue.
7. The Fujitsu Software Auto Installer user interface will be launched providing the ability to auto install the software downloaded from support site.
8. It is recommended that you install all the software in the listed order. You can *Select All*, to install the software in the order listed.
9. Click the *Install* button to start the installation.
10. After installing all the selected drivers, the Installation Results window is displayed. Click *OK*.
11. “You must restart the system for the settings to take effect. Do you wish to reboot now?” message appears. Select *Yes*.
12. The system will now reboot.

Downloading Driver Updates

To ensure that you always have the most current driver updates related to your system, you should occasionally access the Fujitsu Software Download Manager (FSDM) utility. The FSDM utility is available from the Fujitsu Support site. FSDM will allow you to view and download a list of the most current drivers, utilities, and applications to determine whether you have the latest versions. To download the FSDM Utility, go to the Support Site: ["http://support.fujitsupc.com/CS/Portal/support.do?srch=DOWNLOADS"](http://support.fujitsupc.com/CS/Portal/support.do?srch=DOWNLOADS).

If you are planning on downgrading, upgrading or changing versions of your operating system during this process please see the User's Guide for more information at ["http://solutions.us.fujitsu.com"](http://solutions.us.fujitsu.com).

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