roda Rocky III+

USER MANUAL

The information, instructions and descriptions in this manual are updated and refer to the pertaining notebook.

The manufacturer reserves the right to make changes to the contents of this manual without further notice. Proprietor and manufacturer disclaim any warranty as to direct or indirect damage arising from errors, omissions or deviations between the notebook and the information in the manual.

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Conventions

This manual is divided into individual chapters with interdependent contents. If you have experience with the use of computers, you may skip individual chapters or directly look up the respective keywords.

Some of the explanations and figures contain references marked with the symbol ⇨; they contain further information on the respective topics.

Figure and table numbers correspond with the page you are on. If a page contains several figures or tables, they are marked a, b, c, etc.

Keys and key combinations are written in square brackets, e.g., [Ctrl] + [Alt] +[F1] means that you must press the control, Alt and F1 keys simultaneously.

Note

Notes contain important information in connection with the directly related text or chapter.

Attention

You will find the Attention notes where data loss or notebook damage may be the result of non-compliance with this note.

Warning

Warnings inform you that personal damage or damage to the notebook or individual components thereof may be the consequence of carelessness or non-compliance with the respective warning.

Electromagnetic Compatibility (EMC) and safety instructions

Federal Communications Commission Statement:

This equipment has been tested and found to comply with the regulations for a class-B digital device pursuant to Part 15 of the FCC Rules. These regulations are designed to provide protection against harmful interference in a resistent installation.

This equipment generates, uses and emits high-frequency radiation and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication devices. There is no guarantee that interference will not occur in particular devices. If this notebook causes interference to radio or television reception, which can be determined by switching the notebook on and off, the user should implement the following measures:

- re-align the antenna

- increase the distance between the notebook and the receiver

- connect the notebook with another circuit

- consult the dealer or an qualified radio/TV technician.

Regulatory information / disclaimer

Installation and use of this notebook must be in accordance with the instructions in this manual. Any changes or modifications made to this notebook (including the antennas) that have not been approved by the manufacturer may affect the notebook's functionality and proper operation.

The manufacturer is not responsible for any interference caused due to the unauthorized use of this notebook or due to the substitution of cables and other equipment. It is the responsibility of the user to correct any such interference. The manufacturer and its authorized resellers or distributors do not assume liability for violation of government regulations arising from non-compliance with these guidelines.

Important note

FCC RF Radiation Exposure Statement: This equipment also complies with FCC RF Radiation Exposure Limits under uncontrolled environment. This device and its antenna must not be located in the proximity of other antennas or transmitters.

CE

Products with the CE symbol comply with both the regulations for Electromagnetic Compatibility (89/336/EEC) and the Low-Voltage Directive (73/23/EEC) issued by the

Commission of the European Union.

Compliance with these directives implies conformity with the following European Norms:

EN 55022 (CISPR 22)

EN 55024 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-3-2, EN61000-3-3)

EN 60950 (IEC950) Product safety

Declaration of Conformity

Notebook roda Rocky III+ (RK886) and power supply for roda Rocky III+ (RK886):

The above products in the version we have introduced to the market comply with the regulations of the following European guidelines, including all amendments:

73/23/EWG (Low-Voltage Directive), amended by 93/68/EWG, 73/23/EEC (Low-Voltage Directive), amended by 93/68 EEC, 89/336/EWG (Electromagnetic-Compatibility Directive), amended by 92/31/EWG; 93/68/EWG 89/336/EEC (Electromagnetic Compatibility), amended by 92/31/EEC; 93/68/EEC; 98/13/EEC.

The product has been marked with the CE symbol.

The device has been exclusively designed for operation with Rocky III+ with an internal vehicle adapter in connection with the power-supply unit contained within the delivery scope of the notebook.

All cables used for external connection of additional devices (e.g., printers, modems, etc.) must be shielded in accordance with EMI regulations and connected with the respective additional devices.

UL / TÜV

AC adapter (TÜV encompasses EN60950LVD)

Disposal/recycling

All materials used for manufacturing this notebook are recyclable and environment-friendly. Neither CFC nor similar materials have been used for manufacturing of this notebook.

a.2 Safety instructions

Please dispose of all packaging materials in accordance with the applicable regulations.

Safety instructions

If possible, unscrew the interface cables manually in order to avoid damage to the casing threads.

Module-slot screws (battery, hard disk drive and optical drive) should only be tightened with a coin and NEVER with a screwdriver.

If possible, do not charge the battery in temperatures under 0 °C (32 °F).

Additional safety instructions for devices with radio components

If your notebook has an integrated radio component (wireless LAN, Bluetooth or UMTS), please follow these safety instructions when using your notebook:

Switch off the notebook when in a hospital, operation room or near medical electronic systems, since the radio waves transmitted by the radio component can impair the operation of these medical devices.

If the radio component cannot be switched off, remove the battery or disconnect the power supply.

Switch off the radio component when on an airplane, unless leaving it on has been expressly allowed.

Switch off the radio component in blasting areas and in the vicinity of blasting operations.

Data traffic via a wireless connection can lead to unauthorized persons receiving the data.

Travelling with the notebook

Travel preparation

Secure important data from the hard disk drive.

Switch off the radio component (wireless LAN/Bluetooth/UMTS) for data-safety reasons. Data traffic via a wireless connection can lead to unauthorized persons receiving the data.

Travelling abroad

When travelling abroad, make sure that the mains adapter can operate with the local line voltage. If not, obtain the respective mains adapter for your notebook. Do not use any other voltage transformers!

Make sure that the local voltage and the specifications for the line cable are compatible. If not, purchase a line cable that is compatible with the local voltage. The respective line cable is available as an accessory. Do not use any connection adapters for electronic devices to connect the notebook.

Inquire with the respective authorities of the country of destination whether you may operate your notebook with the integrated radio component in the respective country (see also "CE identification," page a.2).

You may need a country-specific phone adapter (available as an accessory).

Transporting the notebook

Remove all data carriers (e.g., CD or DVD) from the drives.

End the standby mode and shut down the device properly.

Disconnect the mains adapter and all peripherals from the notebook.

Prior to transporting the notebook, remove all ExpressCards in order to avoid damage.

Close the interface covers.

Use an appropriate notebook casing when transporting the device; this casing is available as an accessory and offers sufficient space for additional components.

Cleaning the notebook

Switch off the notebook, pull the power plug of the mains adapter from the electrical outlet and uninstall the battery.

Clean the notebook with a water-damp cloth. You may use a mild glass cleaner for the screen: spray a small amount of the glass cleaner onto a soft, lint-free cloth and carefully wipe the screen with the cloth.

Do not use strong or caustic cleaners.

Battery maintenance and use

Remove batteries from the notebook if you do not use them over a long period of time.

Do not touch damaged or leaking Lithium-Ion batteries with bare hands.

Exchange the battery only with a battery of the same or a comparable type recommended by the manufacturer. Dispose of used batteries in compliance with the manufacturer's instructions.

Note that incorrect handling of the battery used in this notebook may lead to fire or explosion.

Do not disassemble the battery, do not expose it to temperatures above 100 °C (212 °F) and do not burn it.

Properly dispose of used batteries.

Warnings concerning the battery

Incorrect handling of batteries may lead to physical damage, severe injury or death. Hence, we strongly request you follow this advice:

Do not attempt to disassemble, repair or otherwise manipulate the battery. The battery may overheat and ignite. Discharge of caustic alkaline solution or other electrolytes from the battery may result in fire or injury.

Do not short-circuit the battery by touching both connectors with a metal object. Short circuits may result in fire or other damage to the battery leading to injury.

Do not charge the battery in a way other than described in this manual. Do not connect the battery with an electric outlet or vehicle cigarette lighter.

Only use the battery supplied with the notebook or a battery approved by the manufacturer. Voltage and polarity of the connecting contacts may vary between batteries.
The use of an inadequate battery may lead to smoke or fire or to the battery exploding or igniting.

Do not expose the battery to high temperatures, such as close to a heater. This may result in the battery igniting, exploding or discharging caustic liquids, which could result in injury. In addition, it could lead to battery failure or functional battery interruptions resulting in data loss.

Dispose of batteries in accordance with local regulations for hazardous waste.

Warning

Avoid eye, skin and clothes contact with caustic electrolytic liquids from a battery.

Immediately switch off the notebook, disconnect the mains adapter and remove the battery in any of the following events:

If you notice unusual smells, high heat dissipation, discoloring or deformation of the battery. Do not use the notebook until it has been checked by Customer Service. Otherwise, the result may be smoke, fire or battery explosion.

Keep the battery out of reach of children.

Attention

Do not dispose of batteries in regular domestic waste. Return them to your dealer or bring them to a recycling center so that resources may be reused and environmental damage is avoided. Cover the connectors with adhesive tape to avoid a short circuit resulting in the battery igniting or exploding.

Make sure to insert the battery properly and securely. Otherwise, it could fall out and cause injury.

Charge the battery in an ambient temperature between 0 and 45 °C (32 and 113 °F). Otherwise, battery performance could decrease and shorten the battery lifecycle, or the electrolytic liquid could discharge.

CONTENTS

Table of contents Table of contents Table of contentsTable of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of contents Table of con-

1. Introduction

2. Commissioning

3. Operational basics

4. Power supply and energy management

5. BIOS setup

6. Driver software

A. Annex

Introduction

Introduction**Introduction**
IntroductionIntroduction
Introduction**Introduction**
IntroductionIntroduction
Introduction**Introduction**
IntroductionIntroduction
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IntroductionIntroduction
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IntroductionIntroduction
Introduction**Introduction**
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Introduction**Introduction**
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Introduction

The Rocky III+ notebook allows the operation under extreme environmental conditions. All interfaces and slots are covered separately. The casing is equipped with rubber bumpers and provides a maximum of protection against shock, vibration, dust and humidity. The technical details are listed in the Annex.

Checking the standard scope of delivery

The following lists the standard scope of delivery for the notebook.

Please use this list to check the package contents for completeness. Contact your dealer if one or more of the following listed items is not contained in the package.

- power cable
- external power-supply unit
- driver CD
- notebook
- battery (may be installed).

The following pages provide you with an overview of the notebook's main operation elements and connections.
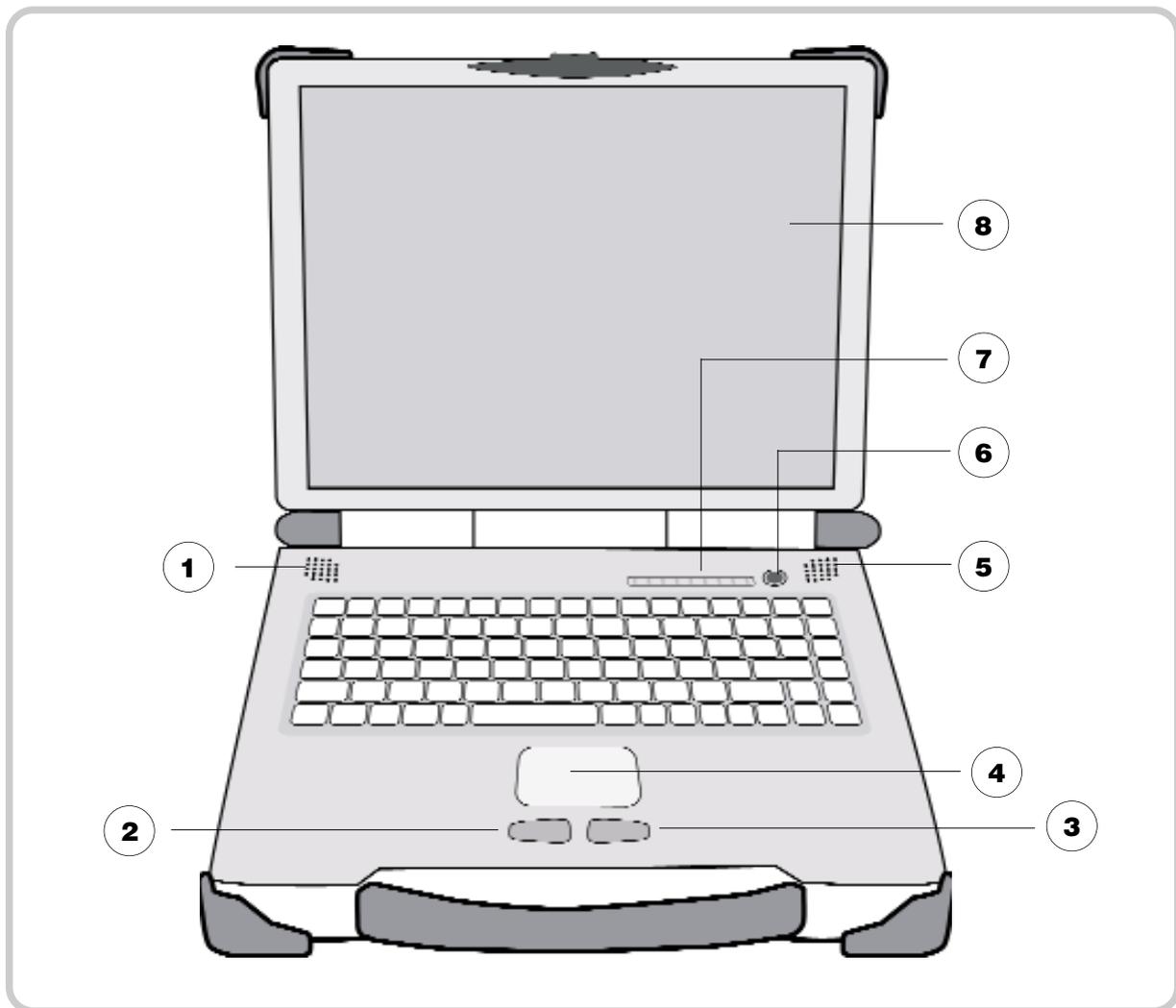
Front view with open screen

Fig. 1.2: Front view

(**1**) Left integrated loudspeaker

(**2**) Left touch pad key (corresponds to the left mouse button)

(**3**) Right touch pad key (corresponds to the right mouse button)

(**4**) Touch pad (⇨ page 3.6)

(**5**) Right integrated loudspeaker

(**6**) Power-on button

(**7**) LED indicators (⇨ page 1.3)
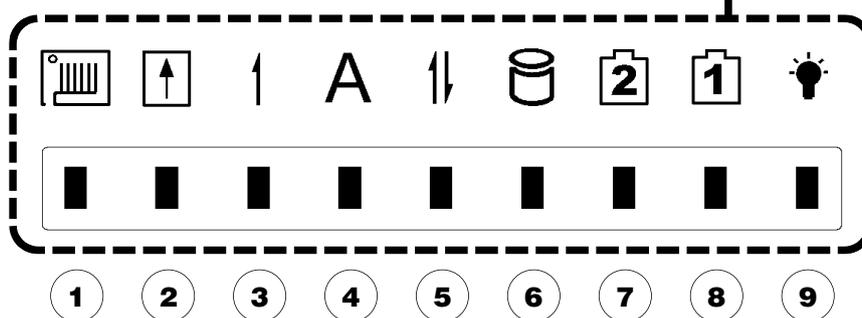
(**8**) LCD screen

LED indicators
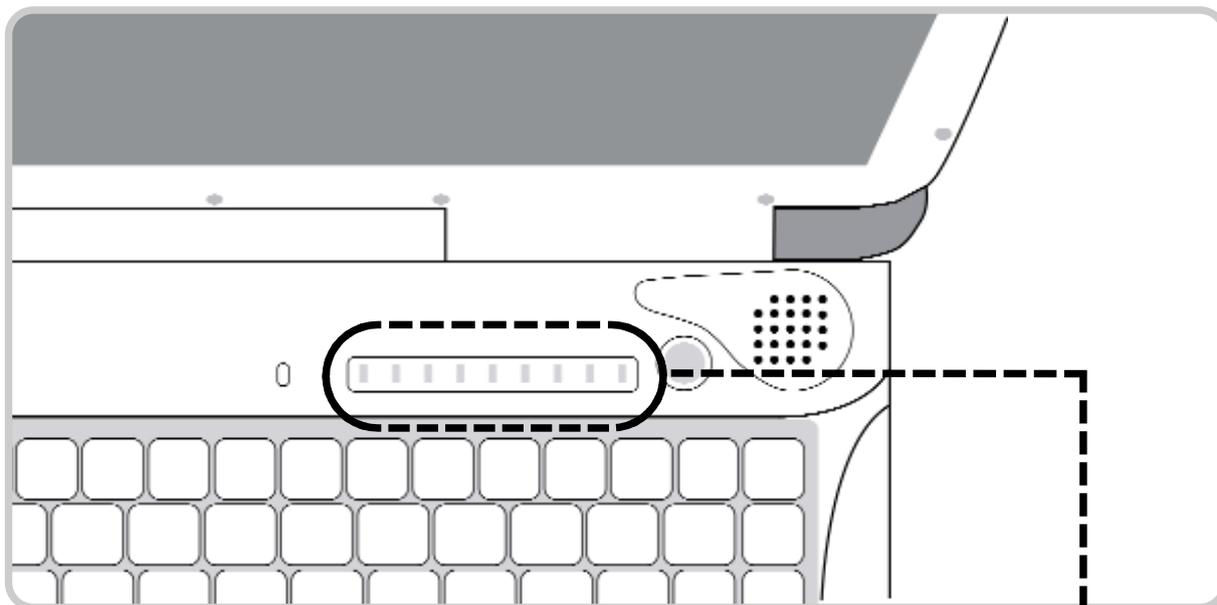
Fig. 1.3: LED indicators

(1) WLAN indicator

(2) PCMCIA card indicator

(3) Num Lock indicator (⇨ page 3.2)

(4) Caps Lock indicator (⇨ page 3.3)

(5) Scroll Lock indicator (⇨ page 3.4)

(6) HDD-in-use indicator

(7) Indicator for secondary battery charge status (in the CD-ROM or FDD slot)

(8) Indicator for primary battery charge status
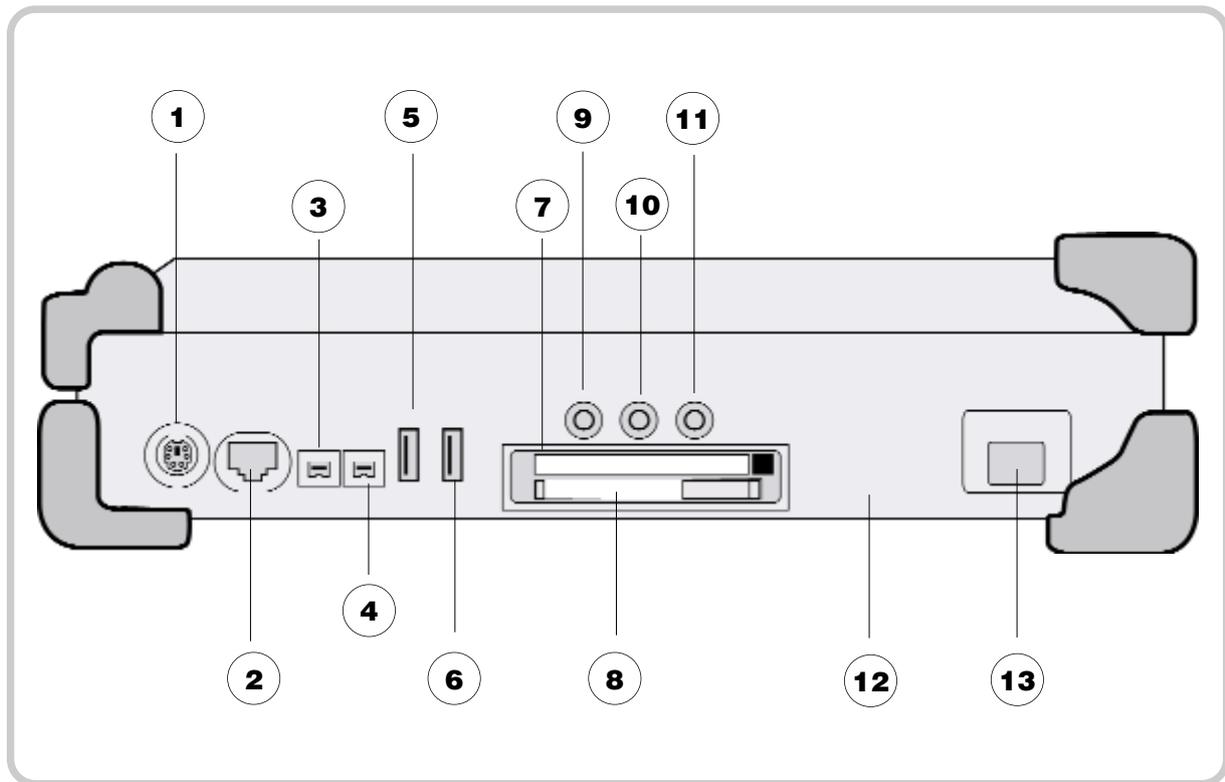
(9) Power indicator

Left-side view

Fig. 1.4: Left-side view

(**1**) PS/2 connector for external mouse/keyboard

(**2**) Ethernet RJ45 (optionally: FiberOptic 100MB or 1GB)

(**3**) FireWire 1394

(**4**) FireWire 1394

(**5**) USB 2.0

(**6**) USB 2.0

(**7**) PC card type II slot

(**8**) PC ExpressCard slot (optionally: PC card type II)

(**9**) Line-out

(**10**) Line-in

(**11**) Microphone-in (Mic-in)

(**12**) Optional customized port (2 x serial RS232/RS422/RS485)

(**13**) Modem connector RJ11(optionally: LAN RJ45, FiberOptic 100MB or 1GB)
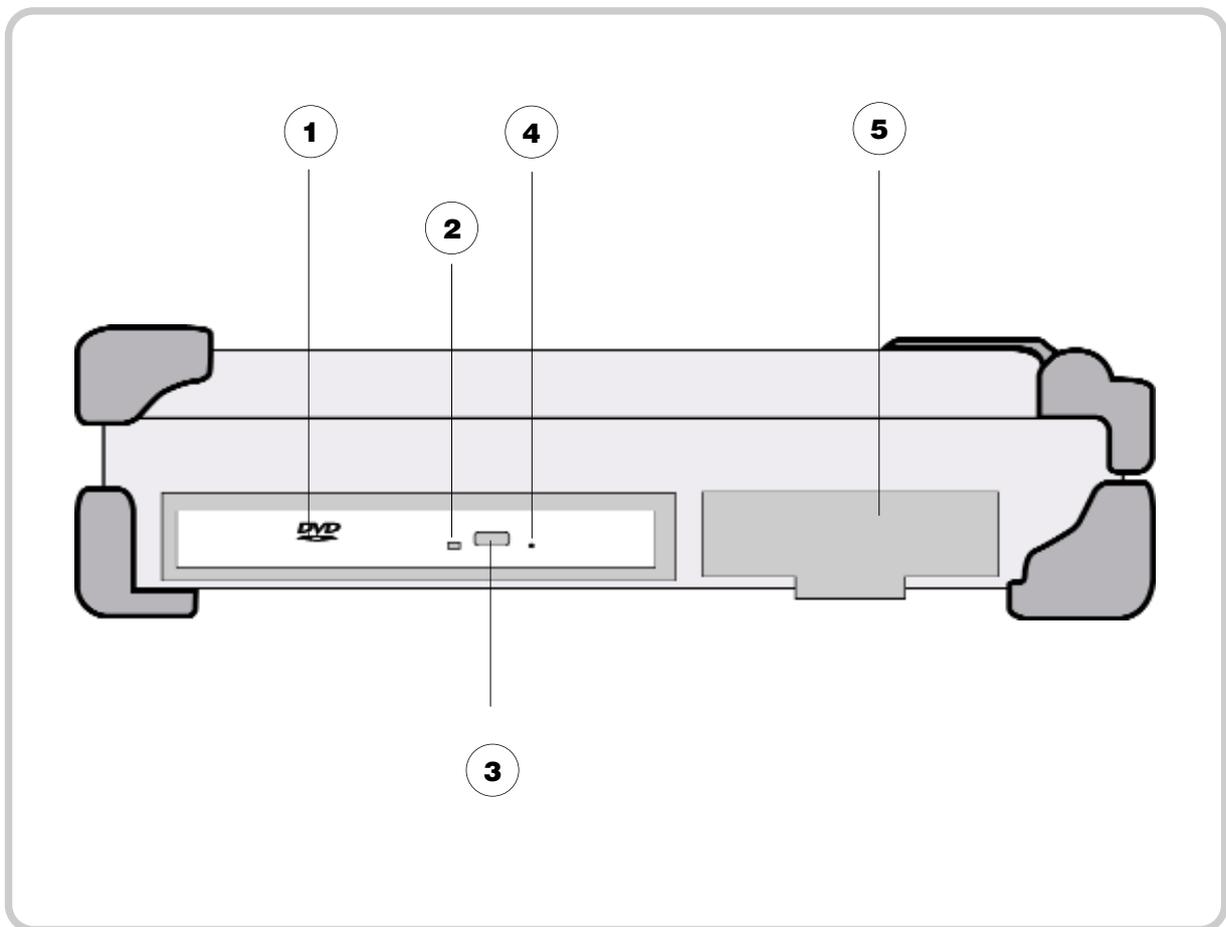
1.4 Introduction

Right-side view

Fig. 1.5: Right-side view with DVD drive

(1) DVD drive (optionally: DVD-RW, Dual Drive, secondary battery, FDD)

(2) DVD-in-use indicator

(3) DVD-eject button

(4) DVD-emergency-eject slot
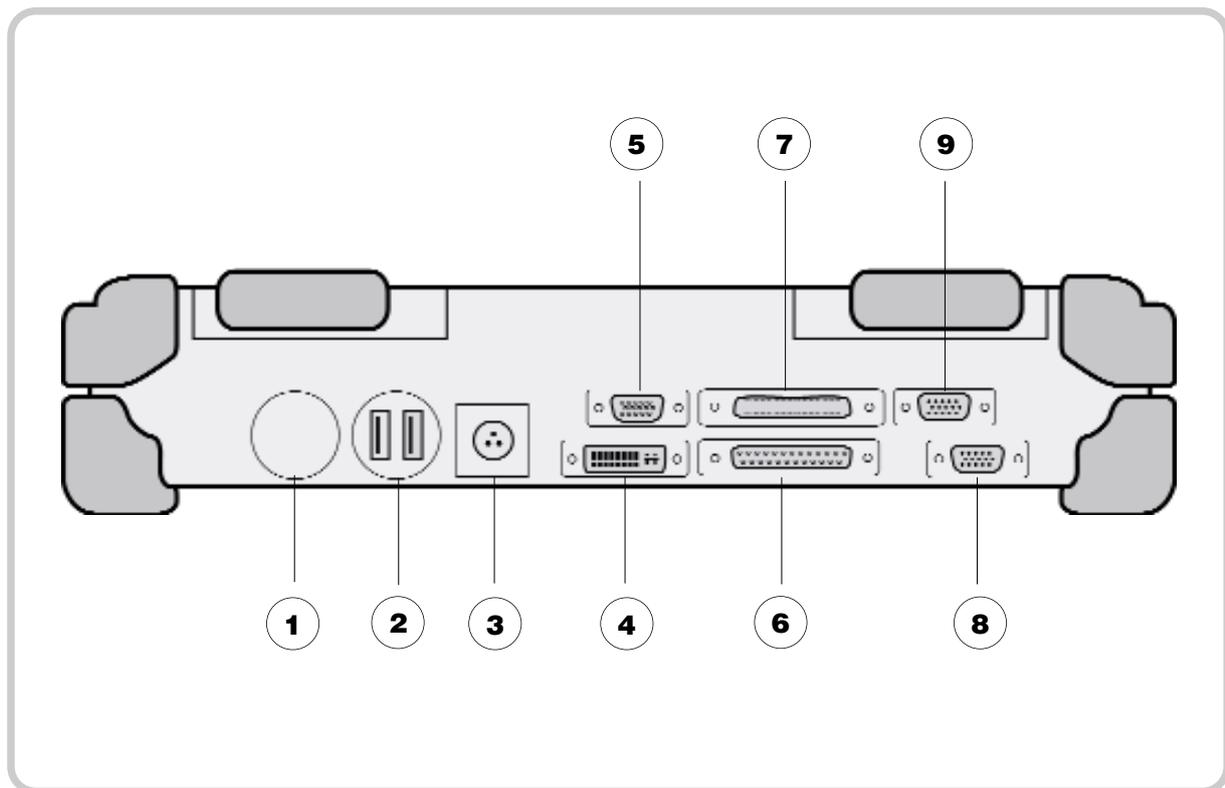
(5) Exchangeable hard disk drive

Interfaces rear side

Fig. 1.6: Interfaces rear side

(**1**) Optional customized connector (e.g., military connector)

(**2**) Optional customized connector (e.g., 2 x USB 2.0)

(**3**) Line adapter connector 2-pin industry (optionally: 3-pin military connector)

(**4**) DP DVI connector

(**5**) VGA connector for external screen

(**6**) Parallel interface (for printer or external diskette drive connection)

(**7**) Docking-station port

(**8**) First serial interface (COM1)

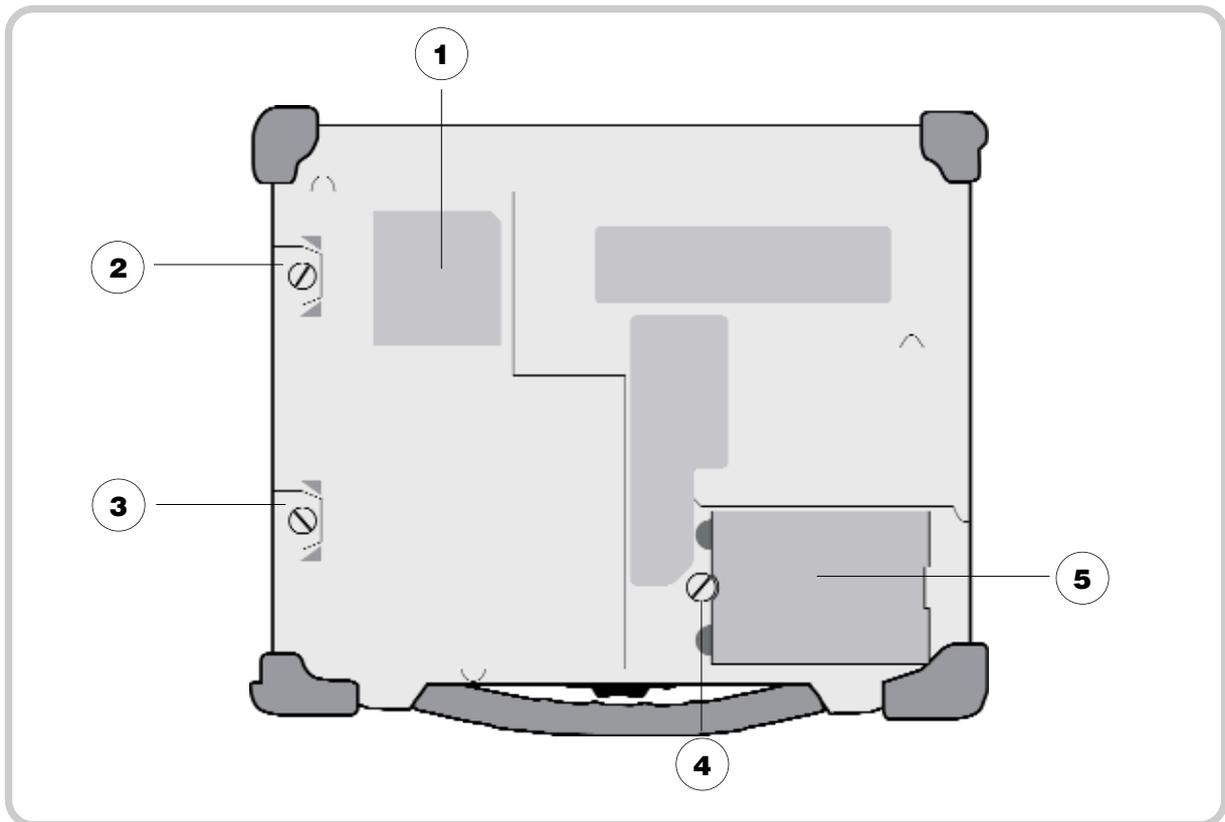(**9**) Second serial interface (COM2)

Bottom view

Fig. 1.7a: Bottom view

(1) Device-type label

(2) Module-slot screw for exchangeable hard disk drive

(3) Module-slot screw for DVD-RW drive / secondary battery

(4) Module-slot screw for primary battery

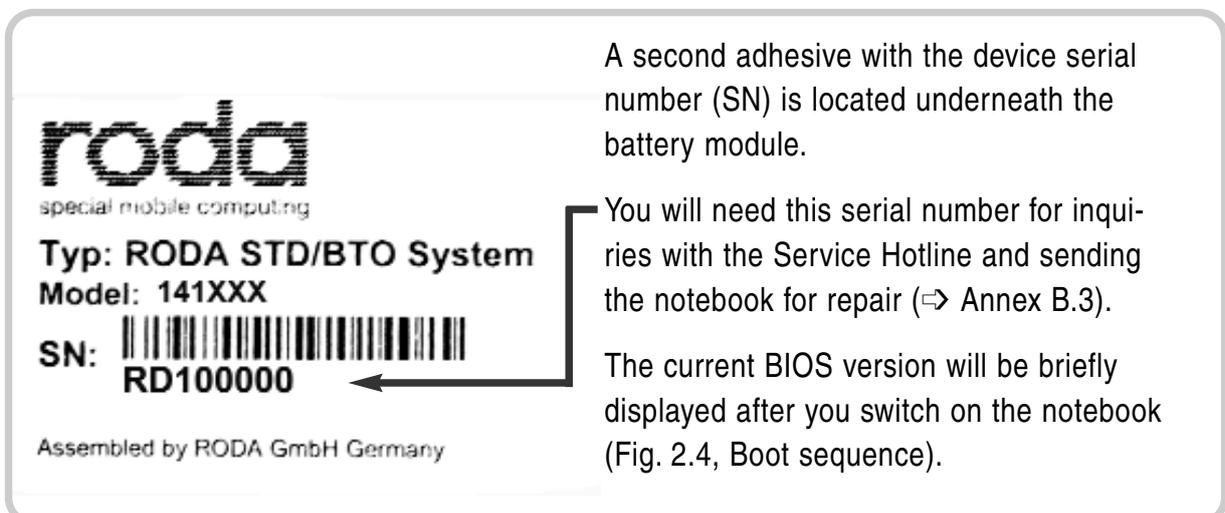(5) Primary battery and adhesive with device serial number (underneath the battery)

A second adhesive with the device serial number (SN) is located underneath the battery module.

You will need this serial number for inquiries with the Service Hotline and sending the notebook for repair (⇨ Annex B.3).

The current BIOS version will be briefly displayed after you switch on the notebook (Fig. 2.4, Boot sequence).

Fig. 1.7b: Adhesive with serial number

CommissioningComm

Preparing the notebook for commissioning

Remove the notebook from the packaging and set it on a surface with the bottom side facing up.
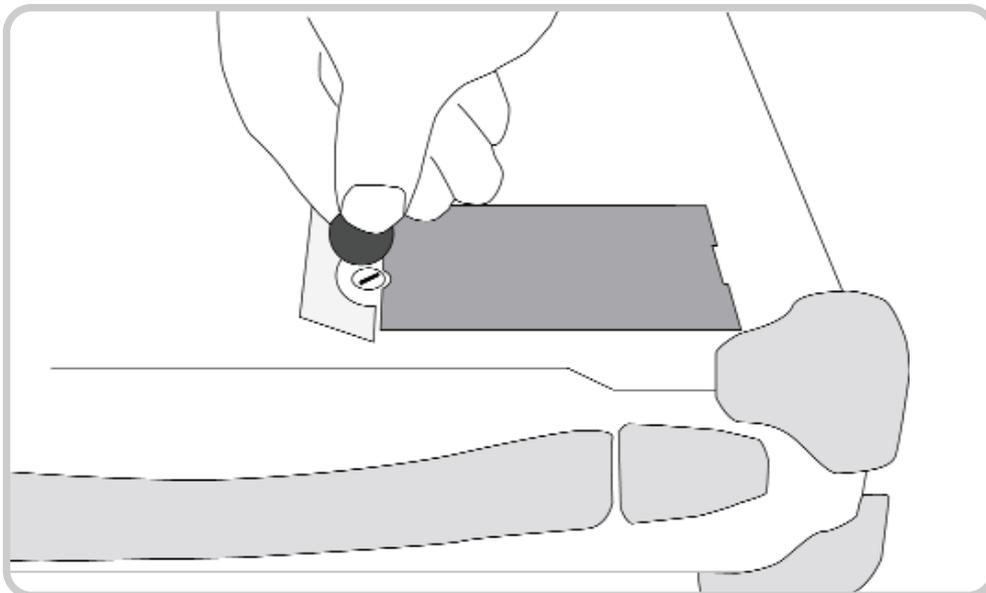
Fig. 2.1a: Opening the battery screw

Use a coin to turn and open the battery-module slot screw so that you can remove the battery and the plastic insulator underneath it.
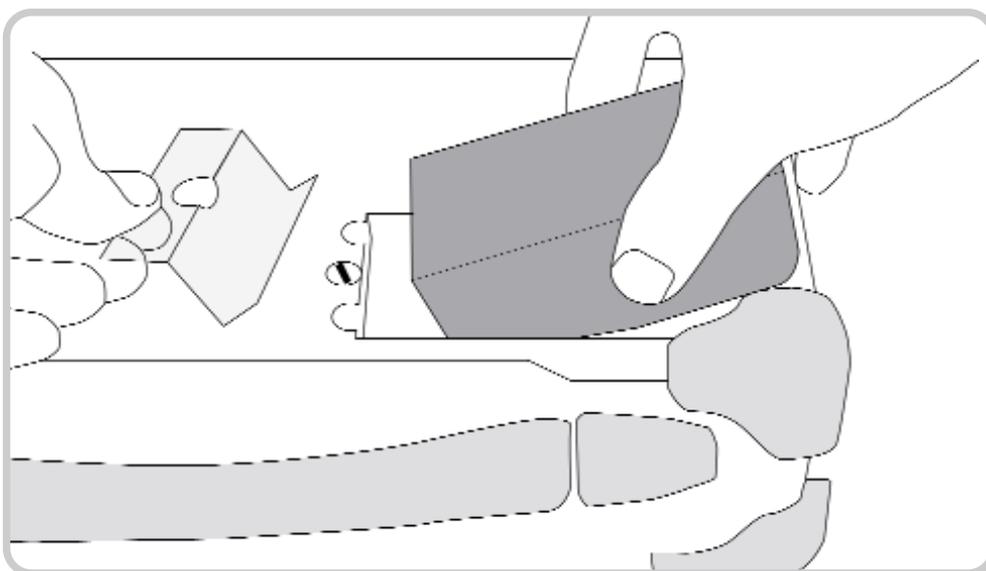

Fig. 2.1b: Removing the insulator

Remove the insulator, re-insert the battery module and tighten the safety screw. Mind the leveling of the screw so that the battery cannot fall out.

Connecting the notebook

Place the notebook on a stable surface.

Connect the line cable (1) with the power-supply unit (2) and plug the plug into the electrical outlet. The green LED (4) will illuminate as soon as the power-supply unit is connected with the outlet, regardless whether the connection with the notebook has been successful.
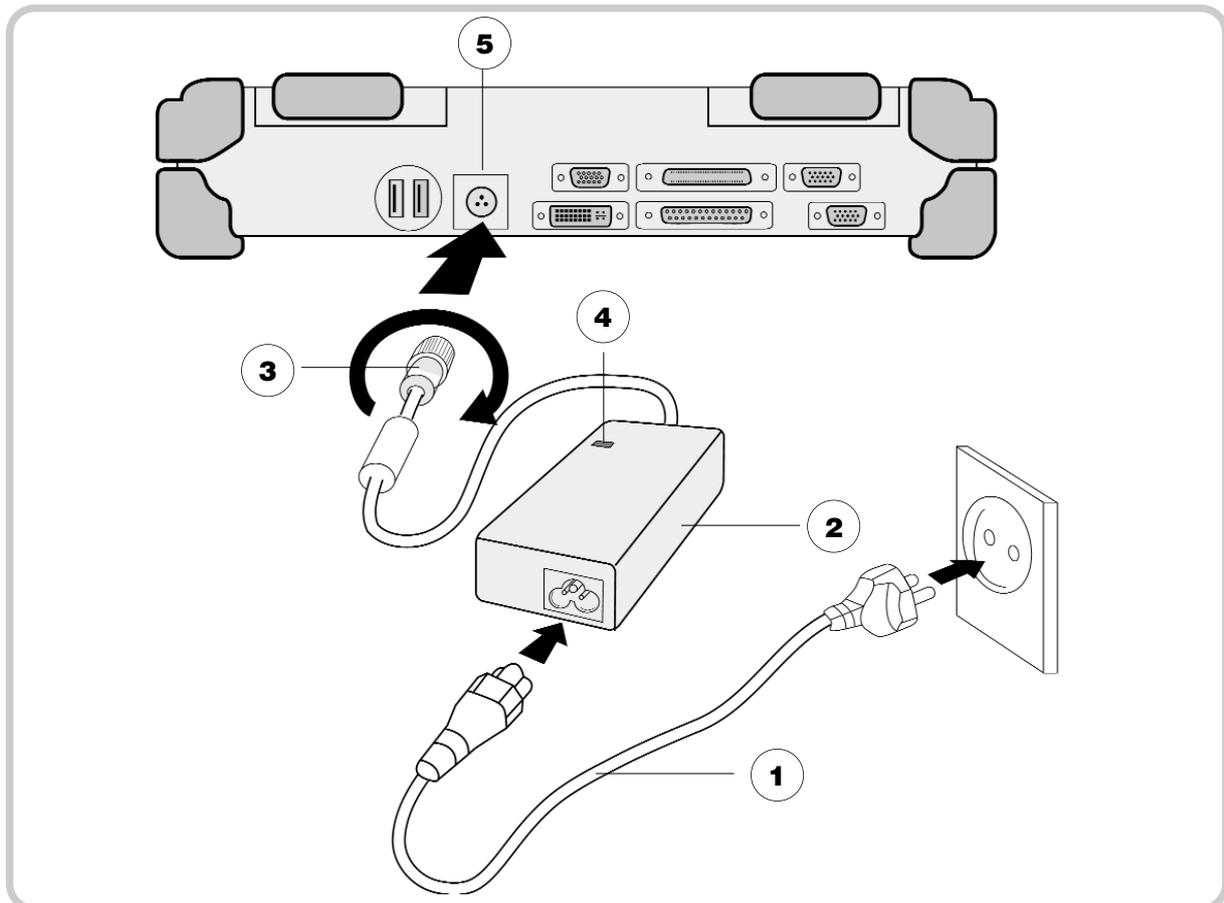

Fig. 2.2: Connecting the notebook

Plug the DC plug (3) of the power-supply unit into the DC input (5) of the notebook and tighten the knurled screw. The battery-charge lamp on the notebook will also illuminate (⇨ Fig. 1.3).

Charge the notebook for at least 10 minutes.

> **Note**
>
> The enclosed line cable complies with the specifications of the country in which the notebook was purchased. Please ensure that the line cable has been approved for the country in which the notebook will be used. Find further information on country-specific power-plug versions in the Annex.
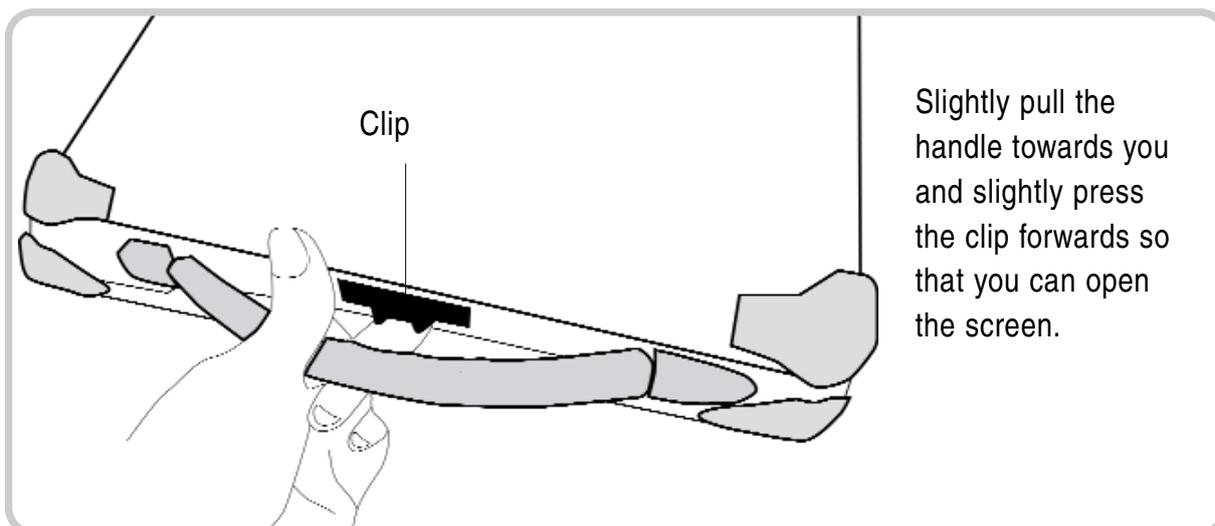
Opening and switching on the notebook

Clip

Slightly pull the handle towards you and slightly press the clip forwards so that you can open the screen.

Fig. 2.3: Opening the notebook

Switching on the notebook

Switch the notebook on by pressing the power-on button (⇨ Fig. 1.2) for approx. 1 to 2 seconds.

Note

In temperatures under 0 °C (32 °F), the notebook may not boot immediately. The system will create a signal while the notebook is heating up. After 13 to 15 minutes, the notebook will have reached its minimum temperature and boot automatically.

If required, you may skip the heating-up phase by pressing the power-on button for about 10 seconds; the system will then boot immediately. However, it cannot be guaranteed that all components will function seamlessly with this power-on method.
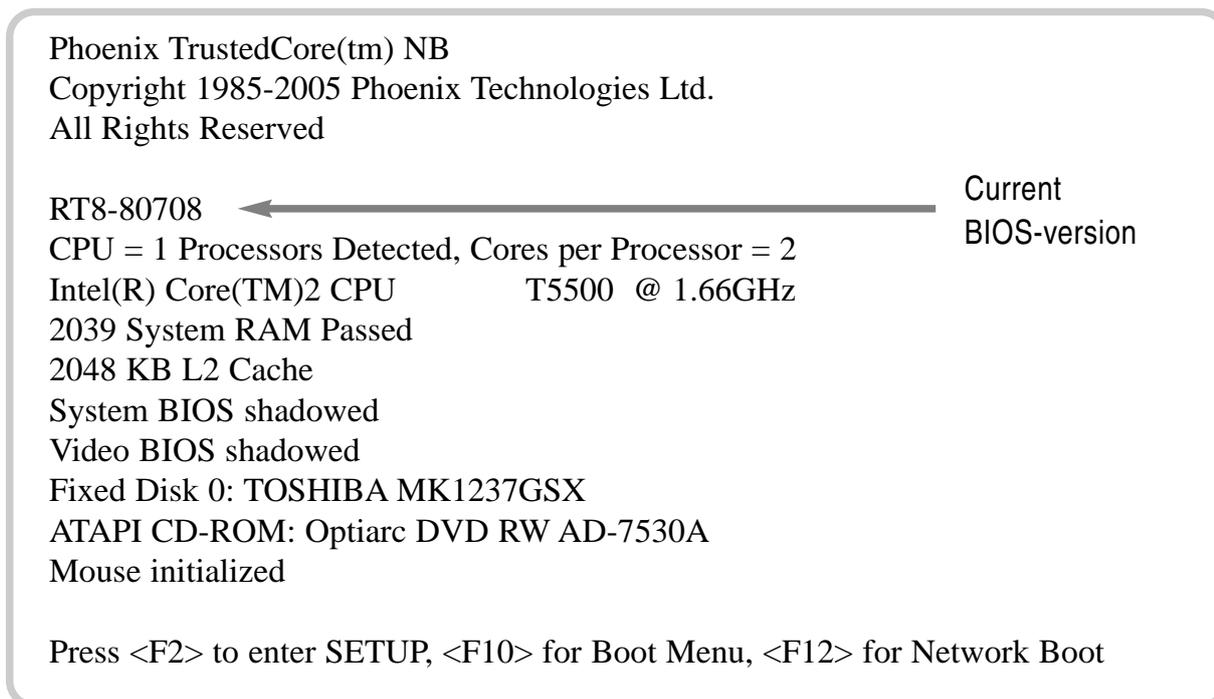
Power-On Self Test (POST)

```
Phoenix TrustedCore(tm) NB
Copyright 1985-2005 Phoenix Technologies Ltd.
All Rights Reserved

RT8-80708              ◄───────────────────────        Current
                                                        BIOS-version
CPU = 1 Processors Detected, Cores per Processor = 2
Intel(R) Core(TM)2 CPU          T5500  @ 1.66GHz
2039 System RAM Passed
2048 KB L2 Cache
System BIOS shadowed
Video BIOS shadowed
Fixed Disk 0: TOSHIBA MK1237GSX
ATAPI CD-ROM: Optiarc DVD RW AD-7530A
Mouse initialized

Press <F2> to enter SETUP, <F10> for Boot Menu, <F12> for Network Boot
```

Fig. 2.4: Boot sequence

Shortly after the switching on the notebook, a series of information will be displayed on the screen. You may now press [F2] to start the BIOS setup of the notebook. As an alternative, by pressing [F10], you can activate the boot menu. Find further information on this topic in the "BIOS setup" chapter.

The system will now run a Power-On Self Test (POST). During this test, the main notebook components are checked:

- processor
- memory
- interrupt controller
- keyboard
- inputs and outputs
- DMA controller, clock unit and video controller.

As part of this self test, the current hardware configuration is compared with the system's configuration data stored in the battery-based CMOS-RAM. In addition, all hardware components are routinely checked. If during the power-on self test a deviation from the current configuration and/or a hardware error is detected, the notebook will automatically ask you with a message to start the Setup service program (⇨ chapter 5).

Installing the Windows operating system

When you switch on the notebook for the first time, the Microsoft Windows XP start screen will appear.

Follow the instructions on the screen.

Note

When switching on the notebook for the first time, the enclosed software will be installed and configured. Since this process may not be interrupted, you should allow some time for it and should leave the notebook connected to the line voltage via the mains adapter. During installation, you may only reboot the notebook when requested to do so!

Adjusting screen brightness

You can adjust LCD display brightness to your needs with the following key combinations:

- Increase brightness: [Fn] + [F4]

- Reduce brightness: [Fn] + [F3]

Switching off the notebook

There are different ways to switch off the notebook:

Shut down via the operating system

- If required, save all input data on the hard disk drive or another data carrier.

- With the mouse, click on the Windows start symbol in the lower left-hand corner of your screen or press

- Then, click on "Shut down" and, again, on the "Shut-down" symbol.
  The system will now shut down.

Shut down via the power-on button

If required, save all input data on the hard disk drive or another data carrier.

Now, press the power-on button (⇨ page 1.2) on the notebook for approx. 1 second. The system will shut down in a controlled manner.

Depending on the energy settings of your operating system, pressing this button may also put the notebook in idle state or standby mode. Find further information on this topic in the "Power supply and energy management" chapter.

Shut down via the key combination   [Fn] + [F8 ⏻]
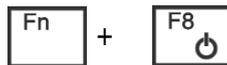
With key combination [Fn] + [F8], you may put the notebook either in idle state or standby mode (⇨ page 4.7). Find further information in the "Power supply und energy management" chapter.

Shut down by closing the notebook

You may set your notebook's energy management for the system to go into standby mode or idle state when you close the notebook. Find further information on this topic on page 4.8.

Automatic shut down with an almost discharged battery

If the battery is almost fully discharged, the system will go to idle state as a standard. Find further information on this topic in the "Power supply und energy management" chapter.

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Keyboard

The keyboard is divided into four logical sections:

- alphanumeric keys

- function keys

- cursor-control and -processing keys

- other control keys
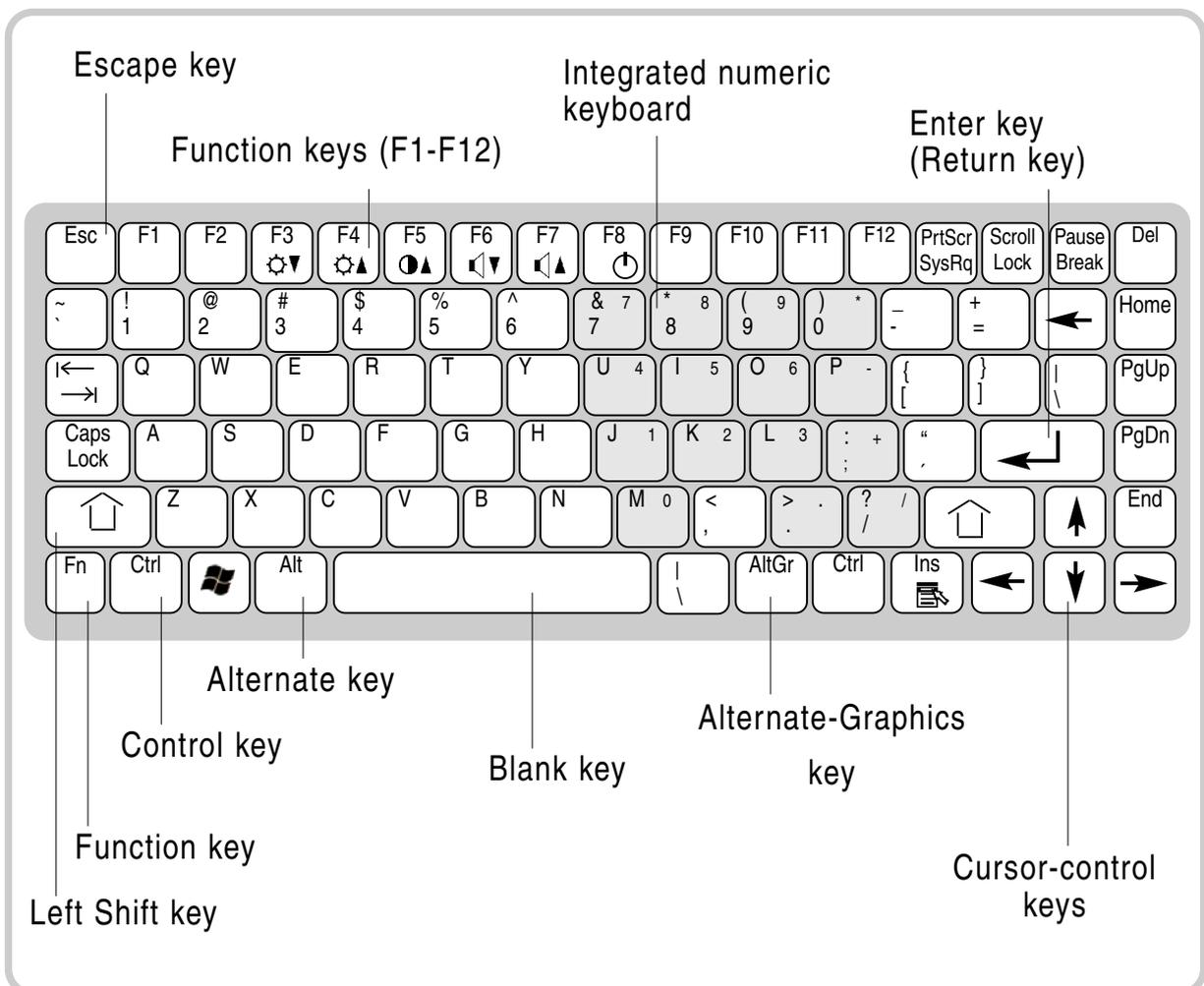
Fig. 3.1: Keyboard, US version

Integrated numeric keypad

Due to limited space, the numeric keypad for number entries and cursor settings on a note-book keyboard is integrated in the alphabetic keys. Use the Num Lock key to switch from normal entry to number entry.

Num Lock key

Activates and deactivates the numeric keypad. When activated, the Num Lock LED is illuminated (⇨ Fig. 1.3, pos. 3)

Fn (Function key)

The Fn key works in combination with another key and executes the following functions:

[Fn] + [F3]	reduces brightness
[Fn] + [F4]	increases brightness
[Fn] + [F5]	turns on keyboard backlight (optional)
[Fn] + [F6]	reduces volume
[Fn] + [F7]	increases volume
[Fn] + [F8]	activates idle state/standby mode (⇨ page 4.7)
[Fn] + [F9]	switches to external screen/LCD/both screens
[Fn] + [Num,Pad]	activates the integrated number pad and then switches to alphanumeric entry when the Fn key is pressed

Alphanumeric keys
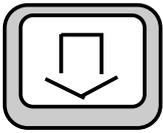
Caps Lock (lock key to enter capital letters)

By pressing this key once, the keyboard switches to capital-letter entry. At the same time, the Caps Lock LED (⇨ page 1.3) illuminates for control. Press the key again, and the keyboard will switch to normal entry.

Shift

If you hold one of the two Shift keys while pressing another alphanumeric key, you can enter a capital letter or the upper character in multiple key allocation. If you previously activated the switch to capital letters via the Caps Lock key, you can enter small letters in combination with the Shift key.

Ctrl (Control) and Alt (Alternate)

In general, the Ctrl (Control) and Alt (Alternate) keys are only used in combination with another key, i.e., they are not used for entering characters. If you hold down the Ctrl or Alt keys while pressing another key, you can execute different functions, depending on the application. Find detailed information on the program-specific functions of these keys in the respective software documentation.

Alt Gr (Alternate Graphics):

This key is used in combination with those keys that have another symbol printed on them in the upper right-hand corner (⇨ page 3.8)
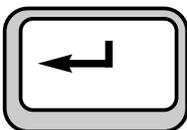
Enter

This key is used to confirm an entry or command. On the DOS level as well as in text-processing programs, the cursor is positioned in the first column of the following line. The Enter key function is similar to the carriage return function on a typewriter. Depending on the software used, the Enter key has special functions which are explained in detail in the respective manuals.
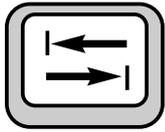
Tabulator

The tabulator moves the cursor by a defined number of characters to a certain position to the right (tab stop) or vice versa in connection with the Shift key. This key's function also depends on the program currently installed. Find further details in the respective documentation.

Function keys

The top row of the keyboard houses 12 function keys (F1 through F12) which have different functions, depending on the application program.

Escape

Within application programs, this key is frequently used to interrupt a program step or command.
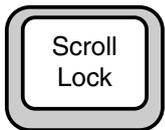
Scroll Lock

This key locks the cursor; the screen shot is moved by pressing the direction keys. If this function is activated, the Scroll Lock LED is illuminated.

Pause

This key stops the program. Press any key to continue.

Print Screen

On the DOS level, the current screen contents are transmitted to the printer.

Insert

The function of this key depends on the application program used. In text-processing programs, you can switch between the insert and the overwrite mode by pressing this key. In the insert mode, the existing characters are shifted when you enter new characters; in the overwrite mode, all new characters overwrite the existing characters.

Del

Delete (Del) key

This key deletes the character directly to the right of the cursor position.

←

Backspace

This key moves the cursor one position to the left while deleting one character.

↑ ↓
← →
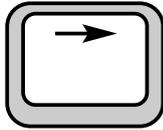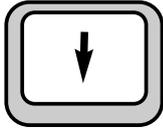
Cursor keys

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

PgDn ↓ PgUp ↑
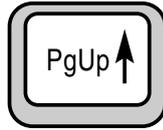
These keys move the cursor one page up or down.

Home

Home

This key moves the cursor to the first position in the line.

End

End

This key moves the cursor to the last position in the line.

Start key (Windows XP)

The start key is used to call the Windows start menu.

Start key (Windows Vista)

The start key is used to call the Windows start menu.

Menu key

The menu key calls the menu for the marked object.

Multiple key allocation

To enter this character,
hold down the Shift key,
then press this key:

To write this character,
press the Num Lock key,
then press this key:

To enter this cha-
racter, only press
this key:

To enter this character, hold
down the Alt Gr key, then
press this key:

(8
8 [
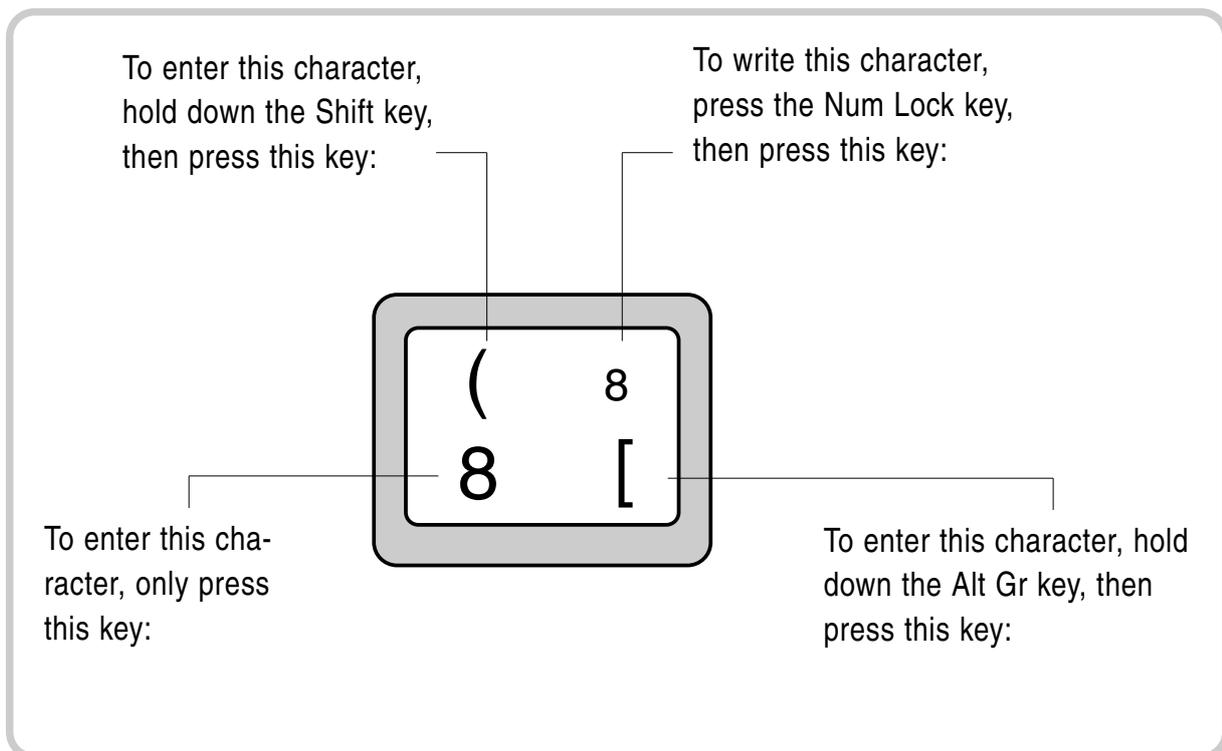
Fig. 3.6: Multiple key allocation

Using the touch pad

A touch pad's functions are equivalent to those of a mouse. The touch pad is made up of a touch field - the actual touch pad - and two other keys, just as with a conventional mouse. The two keys to the left and right of the touch pad correspond to the left and right mouse buttons.

Note

Even though this notebook has been designed for use under rugged conditions, you should always keep the touch pad as clean and dry as possible.

In general, touch pads are sensitive to the touch. The touch pad integrated in this notebook is pressure-sensitive and has been designed for rugged use in extreme environments.

Touch pad functions

Moving the cursor:
With your finger, tip on the surface of the touch pad and move your finger in the desired direction. It is irrelevant on which part of the touch pad you start the movement.
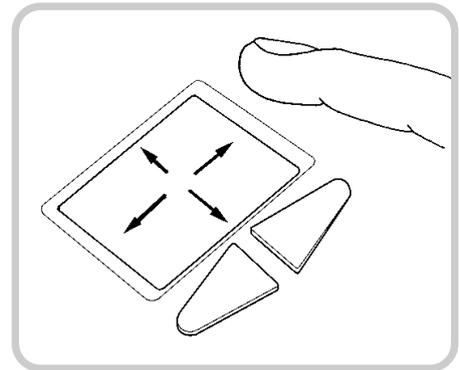
One-time click:
Click the left mouse button or briefly tip on the touch pad once.
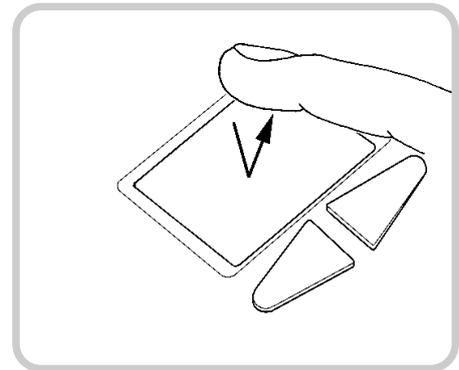
Double click:
Briefly click the left mouse button twice or briefly tip on the touch pad twice.
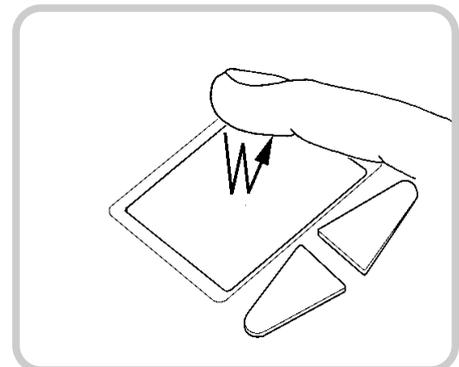
Click and hold:
Hold down the left mouse button while moving your finger on the touch pad in the desired direction or briefly tip on the touch pad twice and leave your finger on the touch pad after the second click. Now, move your finger in the respective direction.

Operational basics 3.7
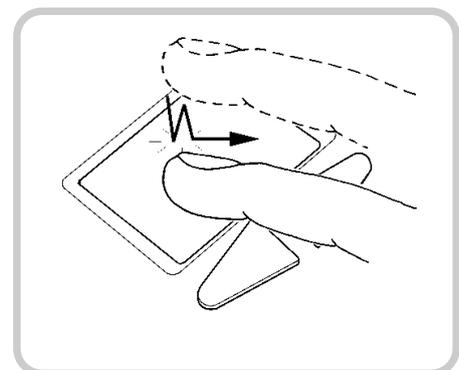
TFT screen

As a standard, the notebook is equipped with a TFT color screen with a 1024 x 768-pixel resolution.

Optionally, a 1400 x 1050-pixel resolution is available.

> **Note**
>
> For technical reasons, TFT screens are manufactured for specific resolutions. Optimal and sharp-cut displays can only be guaranteed with the resolution the respective TFT screens have been designed for. If you select a screen resolution other than the one defined in the specifications, the result may be an unclear display.

Pixel error

In accordance with state-of-the-art production technology, screen displays with absolutely no errors cannot be guaranteed. A small number of constantly bright or dark pixels may appear. The maximum admissible number of faulty pixels is set down in the international norm ISO 13406-2 (Category II).

Pursuant to ISO 13406-2 (Category II), in a 1014 x 768-pixel resolution, a maximum of 4 pixels and an additional 5 sub-pixels may be defective, i.e., in total, 17 faulty sub-pixels. This number corresponds to approx. 0.0007% of all sub-pixels.

Screen settings

Setting the resolution in Windows XP

In the "Resolution" field under Start -> (Settings) -> System control -> View -> Settings, you can change the settings for the screen resolution.

Setting the resolution in Windows Vista

Under the Start -> (Settings) -> System control -> Display and adjustments -> Adjust screen resolution, you can change the screen resolution.

Setting the font size in Windows XP

In the "Font size" field under Start -> (Settings) -> System control -> View -> Display and designs, you can select between a larger and a smaller font size.

Working with several screens

With the multi-screen function in the Windows XP and Vista operating systems, you may choose to divide the display of your Windows desktop onto two separate screens. When an external analog screen (VGA output) or a digital screen (DVI connector) is connected, the internal LCD screen and the connected external screen jointly assume the function of displaying the desktop.

Exchangeable hard disk drive

This notebook is equipped with an exchangeable 2.5" SATA hard disk drive with 120GB capacity as a standard. This hard disk drive is installed in an exchangeable casing and additionally protected against dust and impact.

You may, at any time, replace this hard disk drive with a higher-capacity drive. To do so, please contact your contract dealer.
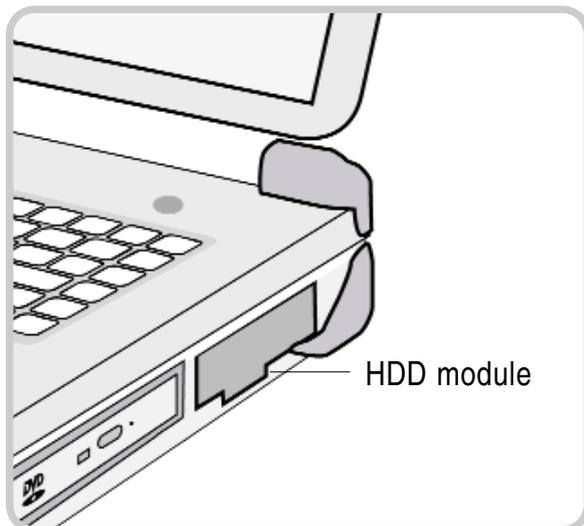
Fig. 3.10a: View with HDD module
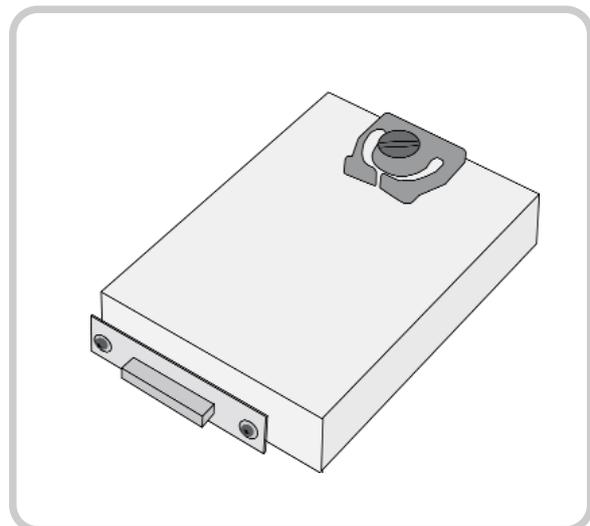
Fig. 3.10b: Uninstalled HDD module

Find information on how to exchange the hard-drive modul from page 3.18 (⇨ Installing and uninstalling notebook modules) onwards.

Optical drive

As a standard, the front right-hand slot of your notebook houses the exchangeable DVD drive which has been implemented as an IDE ATAPI drive. A DVD/CD-RW and DVD-RW drive is also available.

Optionally, you may equip this slot with a secondary Lithium-Ion battery, a secondary hard disk drive, a 3.5" diskette drive or a Dual Drive, i.e., a combination of DVD drive and 3.5" diskette drive.

The following formats are supported:

- 12cm CD/DVD

- CD-ROM

- Audio CD

- CD-I

- Video CD
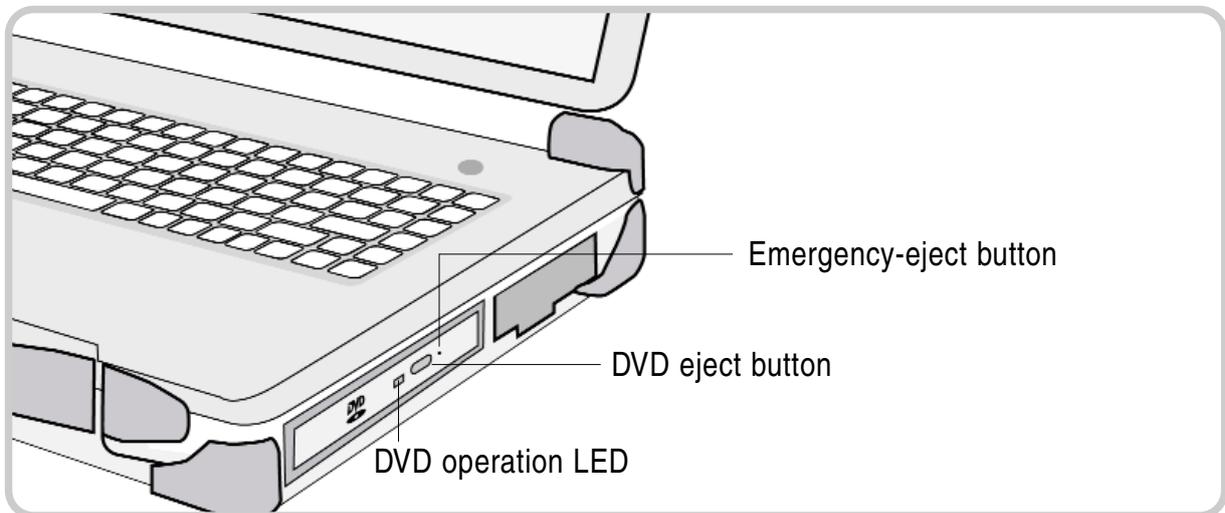
Fig. 3.11: DVD drive

Inserting discs
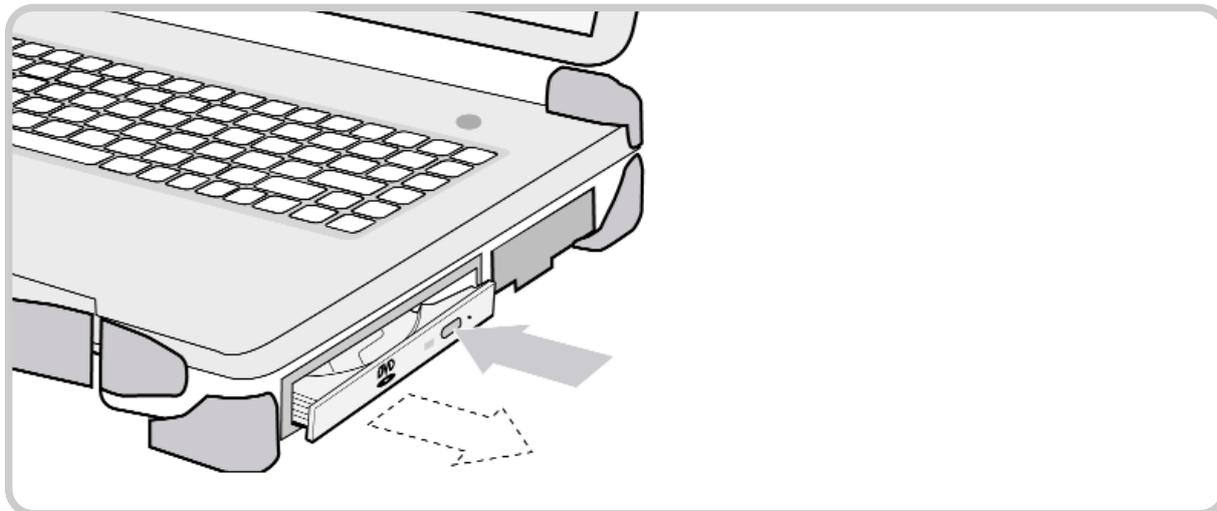
Fig. 3.12a: DVD drive

Please follow these steps with your notebook switched on:

- From the front, press the DVD eject button. The drive will slightly come forward.

- Fully pull out the tray.
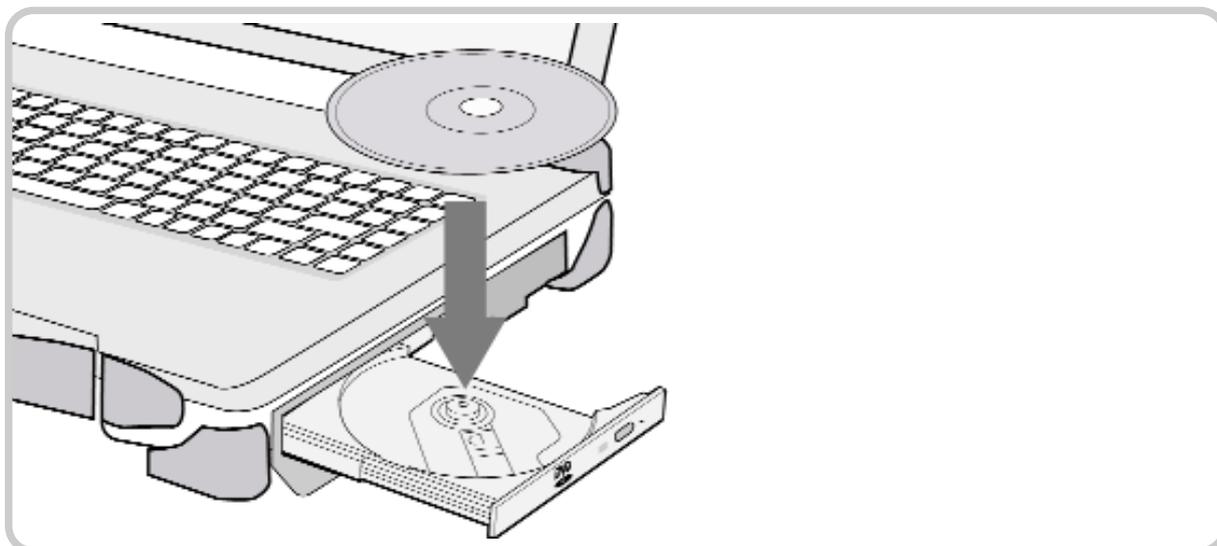
Fig. 3.12b: Inserting a disc

- Insert a CD/DVD with the written side facing up on the tray and carefully press down the CD/DVD in its center until it locks onto the cylinder.

- Now, push the CD/DVD tray inwards until it locks.

- The illuminated LED on the tray signals data access to the CD/DVD by the notebook.

Opening the DVD drive via the emergency-eject opening

In casing of power loss or mechanical disturbances to the optical drive, you can remove the CD/DVD manually.
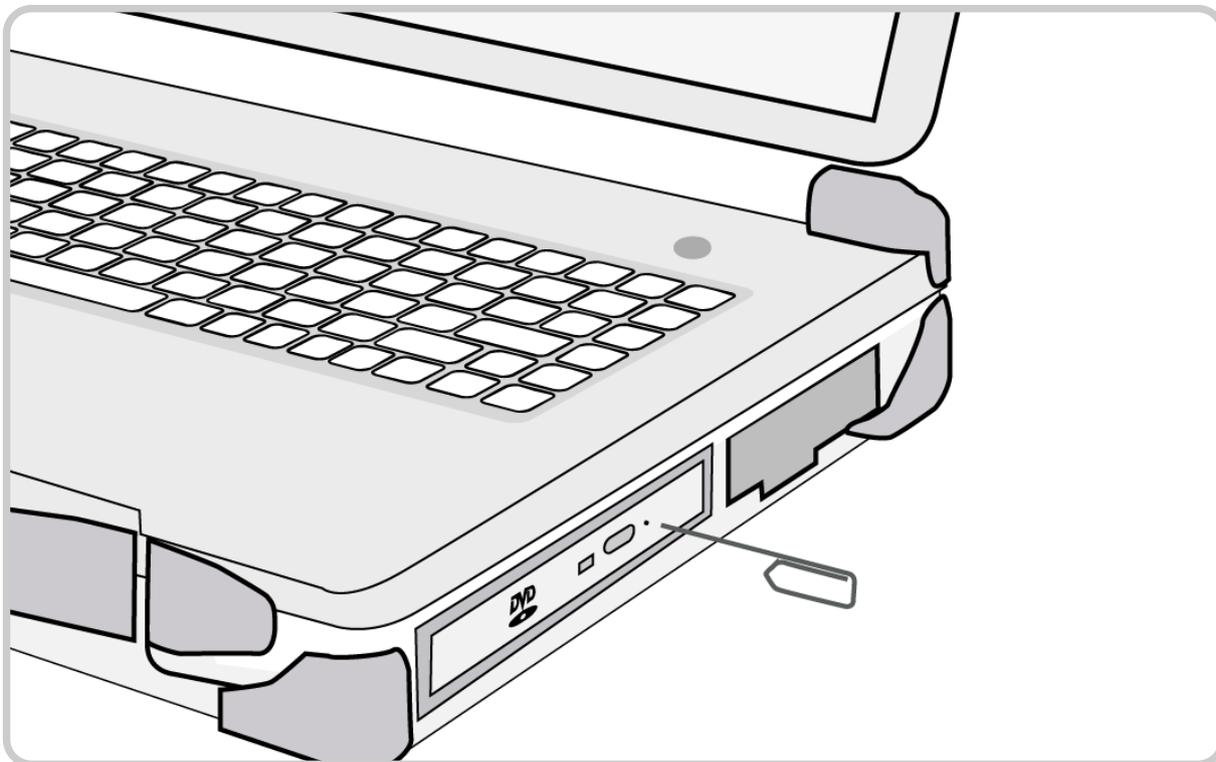
Fig. 3.13: Emergency disk eject

Follow these steps to open the drive slot when your notebook is switched off or in case of a disturbance:

- Press a pen or wire (e.g., a paper clip) hard into the emergency-eject opening so that the tray pops out easily.

- Fully pull out the tray and remove the disc.

- Press the tray until you it locks.

PC card and ExpressCard slots

As a standard, the notebook is equipped both with a Universal ExpressCard slot and a conventional PC card (PCMCIA card) slot.
Optionally, the notebook is available with two identical PC card slots.
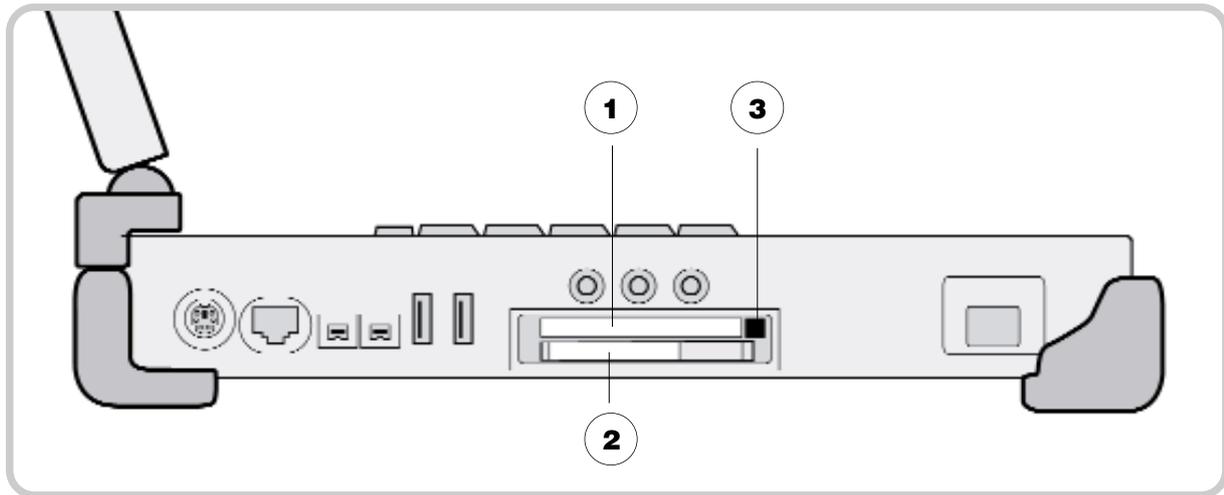
Fig. 3.14a: PC card connector

(1) Top slot: for inserting a PC card type II

(2) Bottom slot: for inserting an ExpressCard (optional: PC card type II)
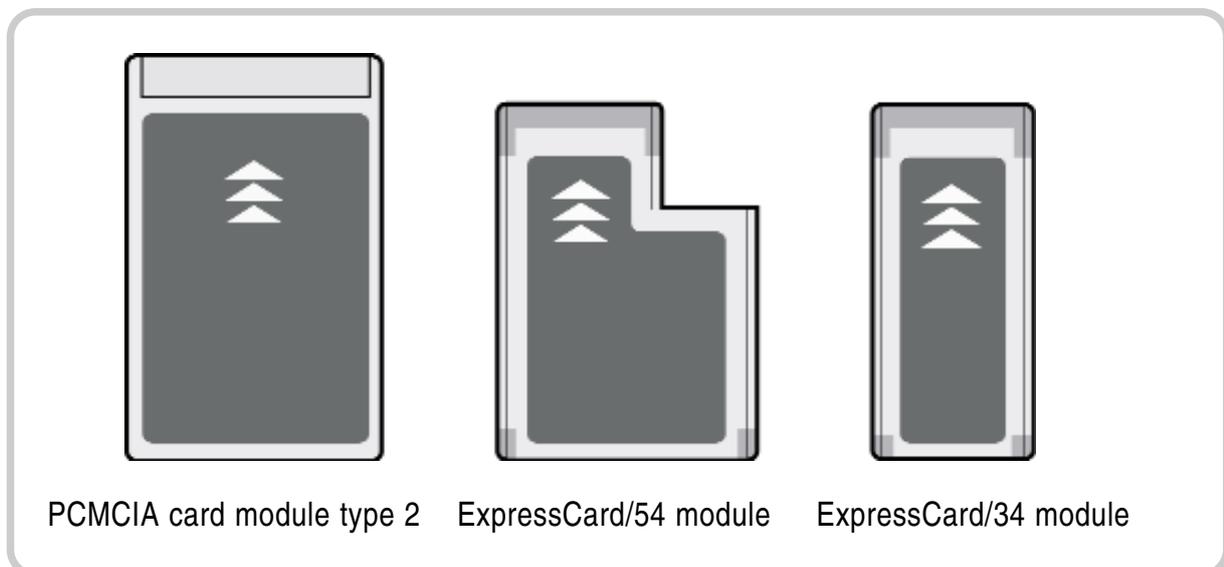
(3) PC card eject button

Supported formats:

PCMCIA card module type 2   ExpressCard/54 module   ExpressCard/34 module

Fig. 3.14b: PC card formats

3.14 Operational basics

Inserting a PC card

With your notebook switched on, carefully insert the card in the slot with the correct side facing up (see note on the card). As soon as you feel slight resistance, fully press the card into the slot. The following signal informs you that the card has been recognized. Mind the notes on the screen. It may be necessary to install driver software for the card to function correctly. Find further information in the PC card manual.
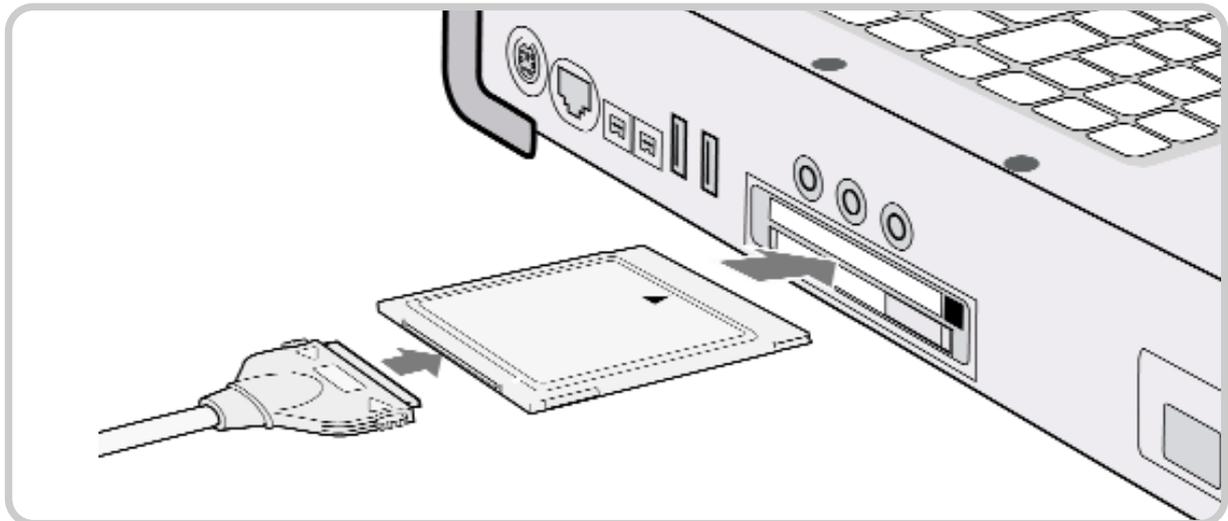

Fig. 3.15: PCMCIA connector

Removing a PC card

Before removing the card manually, you must prepare the software in order to avoid disturbances. You do not have to follow these steps if you remove the card with your notebook switched off.

1. Double click on the "Securely remove hardware" symbol in the task bar; the "Securely remove hardware" dialog field will open.

2. Select the hardware to be removed.

3. Click "End." The "Stop hardware device" dialog field will open.

4. Make sure that the device can be securely removed from the system.

5. Click "OK." You will see a message telling you that the component can be securely removed.

6. Click "Close" to close the "Securely remove hardware" window.
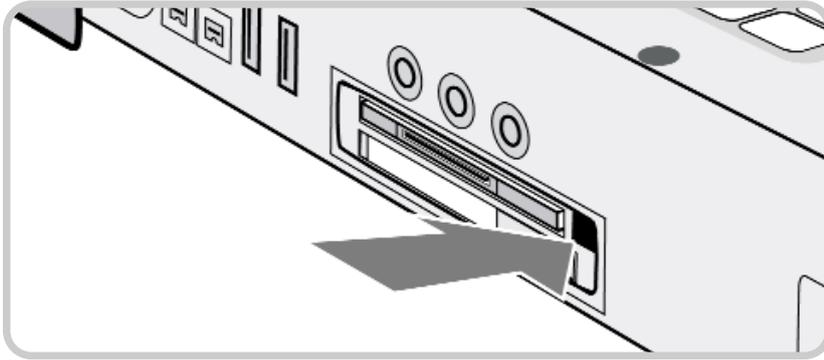
Ejecting a PC card

Fig. 3.16a: PCMCIA connector

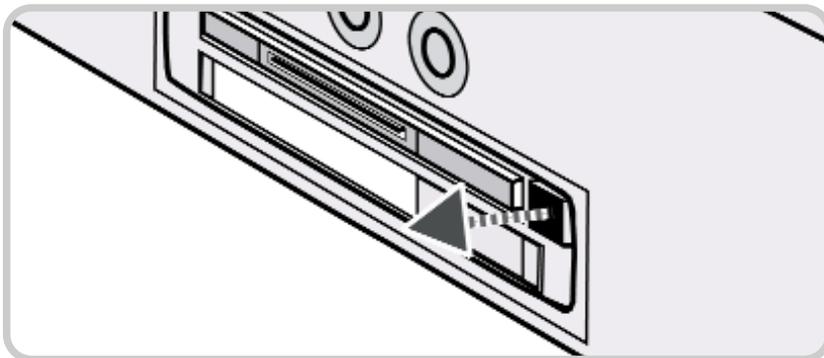Slightly press the eject button inwards so that it pops out.

Fig. 3.16b: PCMCIA connection

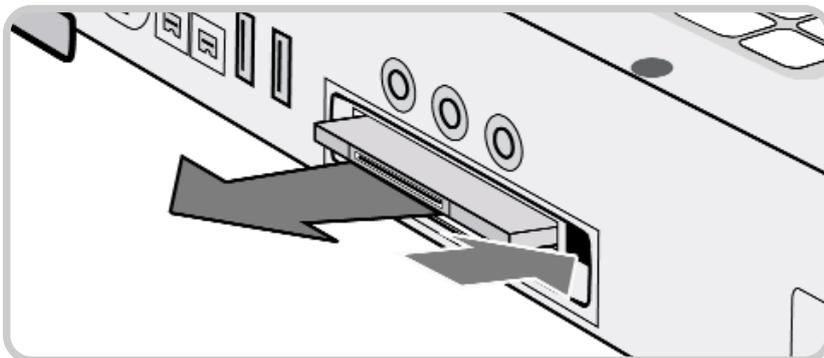Press the eject button hard inwards so that the card pops out a bit.

Fig. 3.16c: PCMCIA connection

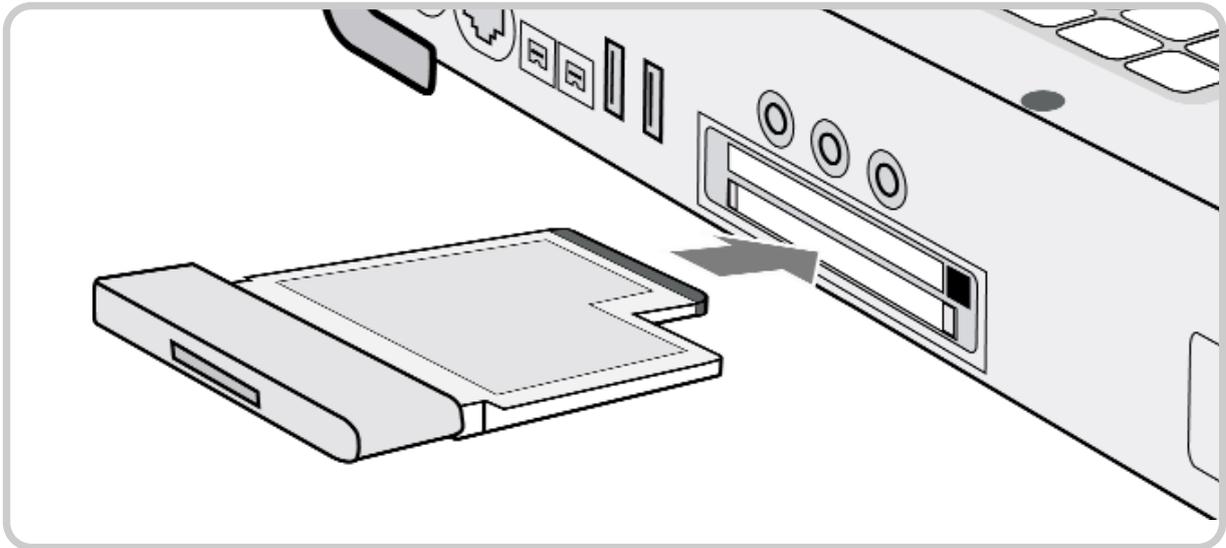Now, fully pull out the card.

3.16 Operational basics

Inserting an ExpressCard

Fig. 3.17: ExpressCard slot

Installing an ExpressCard

With the notebook switched on, carefully insert the ExpressCard in the bottom slot. As soon as you feel slight resistance, fully press the card into the slot. Find further information in your ExpressCard manual.

Removing an ExpressCard module

Since the ExpressCard sticks out from the slot when inserted, an eject button is not required.

In order to avoid problems, follow the steps described on page 3.15 (Removing a PC card) to securely remove the hardware.

Then, pull the card from the slot. If you removed it properly, you will hear a high-pitched signal followed by a lower signal.

Attention

Some PC cards and ExpressCards heat up when used for a longer time, which may cause errors or unstable operation of the respective notebook.

Do not remove the PC card if the notebook is in idle state or standby mode (⇨ page 4.7).

Installing and uninstalling notebook modules

This notebook is designed in a modular manner, which allows you to remove and exchange the main components.
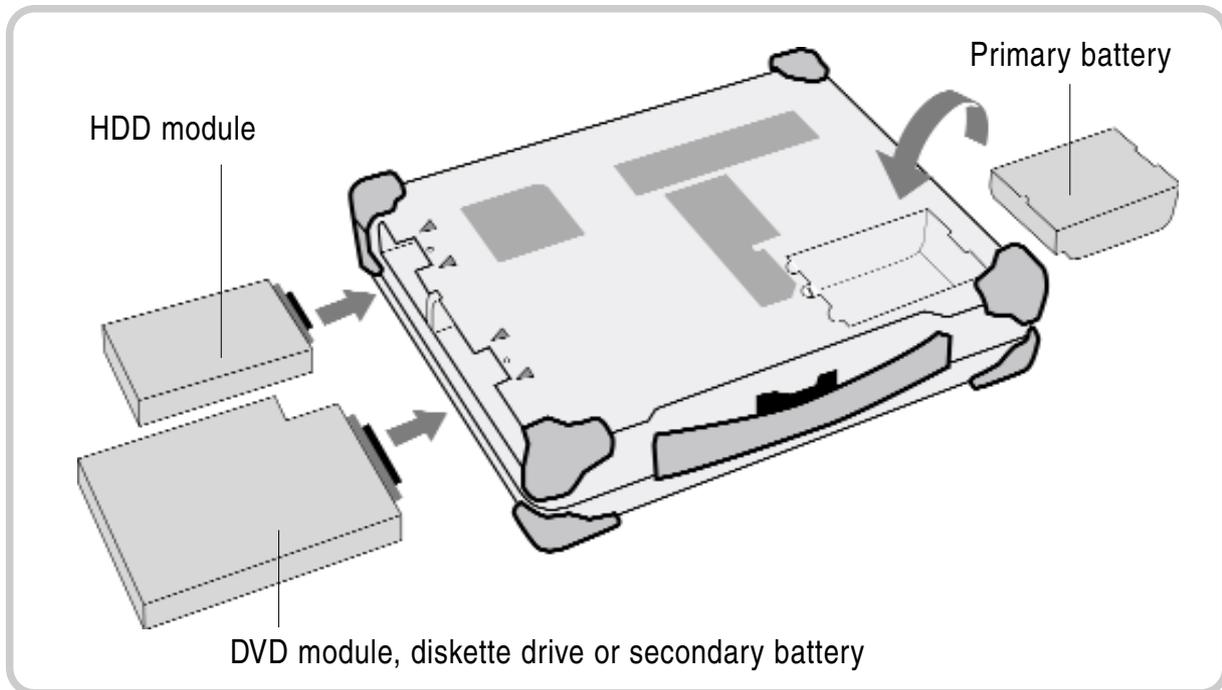

Fig. 3.18: Notebook modules

You may choose between several optional additions and modules for this notebook. Find further information on this topic in the Annex (⇨ page A.4).

Preparing for module removal

Before starting to remove one or more modules, you should take the following preparatory measures:

- If the notebook is switched on, save your work and shut down the notebook properly.

- Pull all the connections, including the power-supply cable.

- Close the notebook and place it on a surface with the top part facing down.

Attention

When removing or exchanging modules, make sure that the notebook is neither in idle state nor in standby mode (⇨ page 4.7). Otherwise, it cannot be guaranteed that all components function properly.

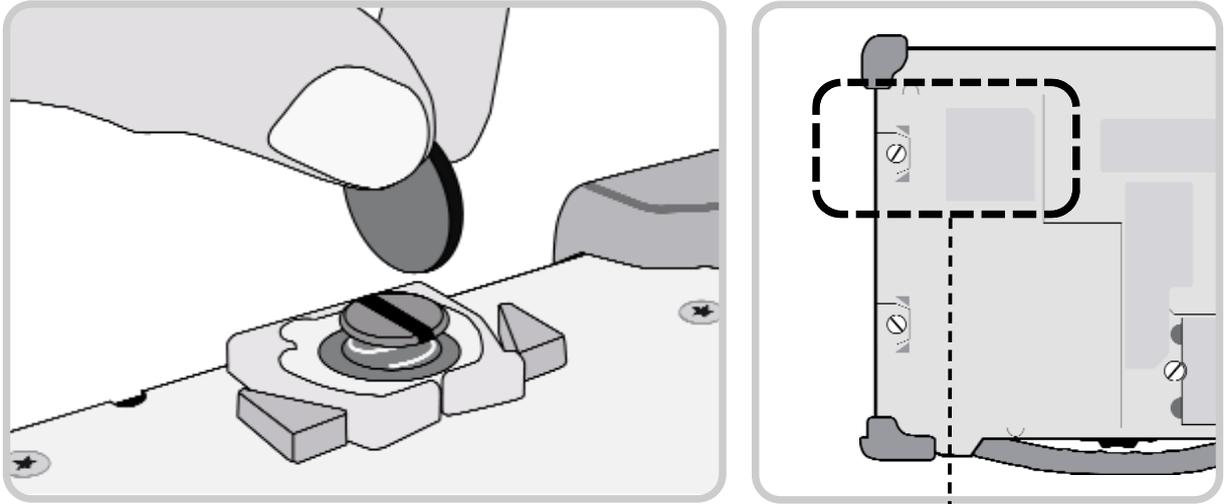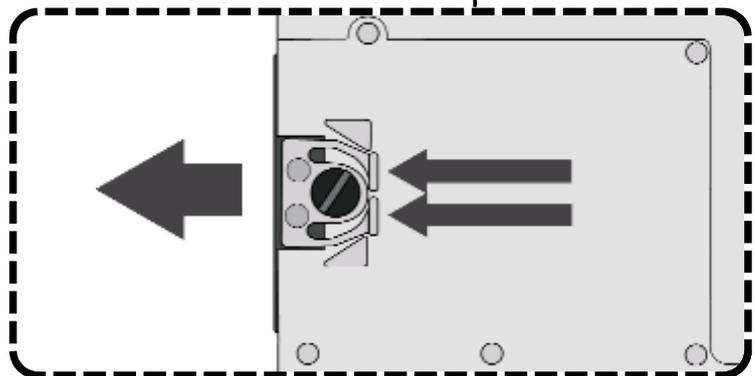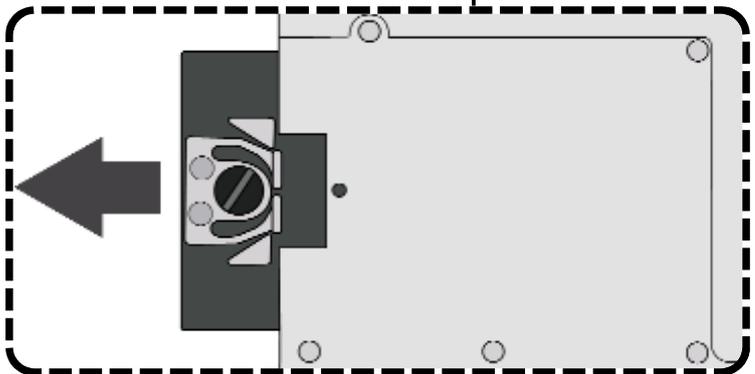**Removing and installing modules**

Fig. 3.19: Module removal

With a coin, turn the module slot screw out, until resilience makes it pop up.

Press the plastic clip outwards for the module to pop out.

Fully pull out the module from the slot.

Insert the new module into the vacant slot and press carefully until it locks. Make sure that the clip is fully locked in the plastic triangles.

Then, re-tighten the screw.

Removing the primary battery

For removing the battery, you only need to loosen the bottom screw. You may then directly remove the module. Find further details on battery removal in the "Commissioning" chapter (⇨ Preparing the notebook for commissioning, page 2.1)
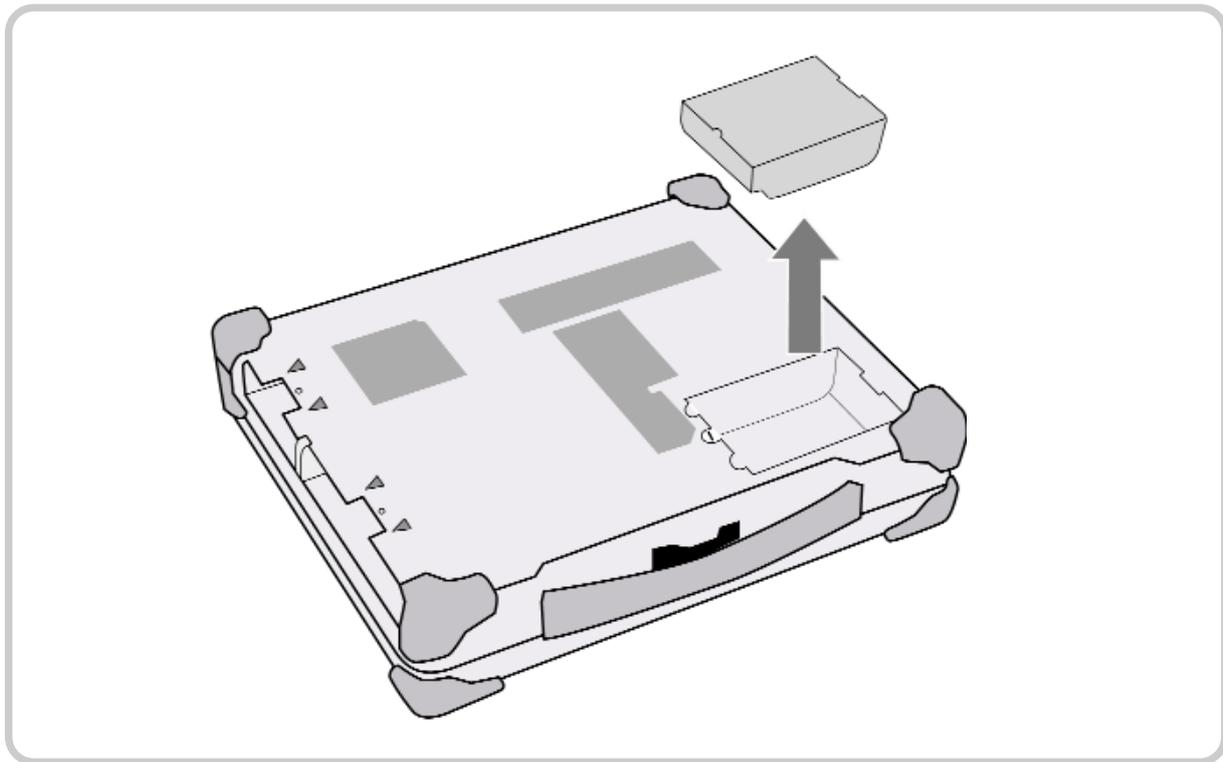

Fig. 3.20: Removing the primary battery

Note

You may only remove and/or exchange the modules discussed in this section. Removing other casing parts, covers, screws, etc. will result in the notebook not sealing properly and, hence, in warranty forfeiture. Opening or making changes to the notebook, including memory extension, RTC battery exchange, etc., may exclusively be carried out by qualified persons at the respective repair centers.

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Power supply for the notebook

The notebook may be power supplied either via the mains adapter or the integrated battery. Optionally, a DC/DC converter (⇨ page 4.9) is available; it can be used to operate the note-book via a vehicle or similar battery.

This chapter also provides you with information on which energy resources to use the most effectively and on battery charging. In addition, you will find information on battery-energy saving as well as on notebook behavior in low and critical battery charge state.
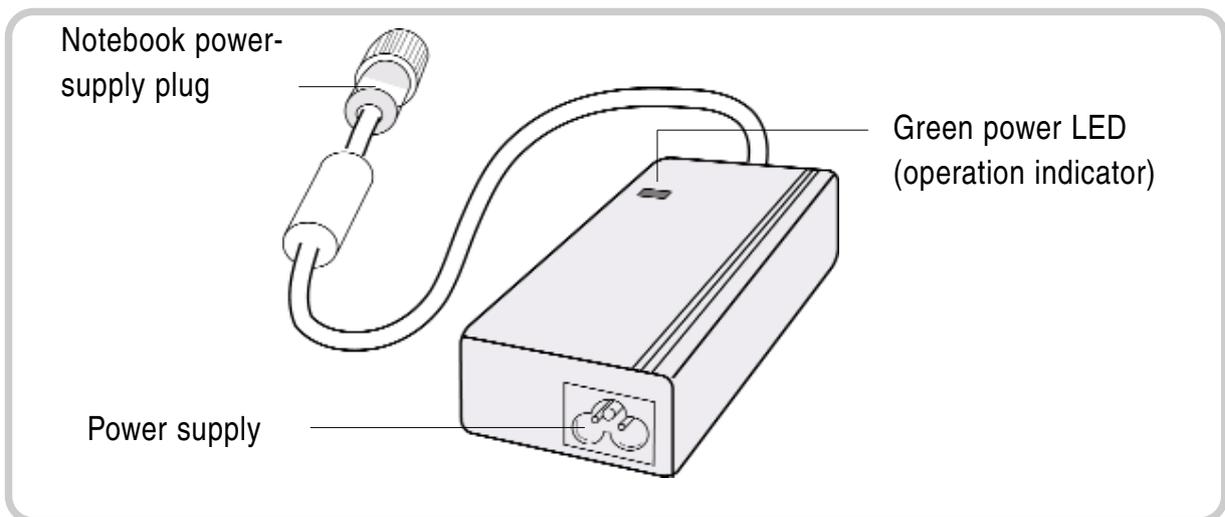
Fig. 4.1: Mains adapter

The enclosed mains adapter automatically adjusts to the line voltage of the respective coun-try. Make sure you have the correct country-specific power-plug version (⇨ page C.1 in the Annex).

The mains adapter supplies the connected notebook with power and charges the integrated Lithium-Ion battery. The green operation LED illuminates as soon as the adapter is connec-ted with the power line, regardless whether the adapter is connected with the notebook.

Note

For power supply to the notebook, only use original manufacturer parts provided for this notebook. Otherwise you may cause damage to the notebook and/or externally connected peripherals. Moreover, the manufacturer's warranty will forfeit when you ignore these instructions.

Battery operation

The exchangeable Lithium-Ion battery is the notebook's main power source when the mains adapter is not connected. As a standard, the notebook is equipped both with a primary and a real-time clock (RTC) battery.

You may choose to purchase an additional battery for longer, power-line-independent operation. This additional battery can be inserted in the DVD-drive slot.

RTC battery

The RTC (Real Time Clock) battery provides power to the integrated real-time clock and the calendar even when the notebook is switched off and not connected with the mains adapter. In addition, the RTC battery is responsible for maintaining the system settings in BIOS (⇨ chapter 5). The RTC battery is also charged via the connected mains adapter. In order to avoid losing system settings when the notebook is not used for a longer period of time, you should connect the notebook with the mains adapter for a few hours at least once a month. When commissioning the notebook, please make sure that date and time settings are correct; otherwise, you will need to adjust them. Find further information on this topic in chapter 5 (⇨ BIOS setup).

> **Note**
>
> If required, the RTC battery installed in the notebook should only be replaced by authorized service staff, since it requires opening the notebook.

Primary battery

The notebook's primary battery is made up of 9 Lithium-Ion cells. Before the battery is operated for the first time, the protective insulator must be removed (⇨ page 2.1), and the battery must be fully charged.

Charging the battery

After connecting the notebook with the mains adapter and power line (⇨ page 2.2), the battery will charge. The notebook can either be switched on or off during this process. The notebook's charge indicator (⇨ page 1.3) is illuminated until the battery is fully charged. Upon completion of the charge process, the indicator LED will switch off. You may now use the notebook without power-line supply.

As an accessory, you may also purchase an external charger to charge up to two batteries outside of the notebook at the same time.

Note

Please read and understand the instructions on battery maintenance and use as well as the safety instructions at the beginning of this documentation.

Monitoring battery capacity

If the notebook operates with the battery, you may monitor the remaining battery energy as follows in the Windows operating system:

Click on the "Battery" symbol in the task bar or, in Windows system control, on the "Energy" symbol.

The following window will inform you on the charge status of the integrated battery/batteries.

Fig. 4.3: Battery charge status indicator

<u>Battery - Warnings</u>

The notebook is equipped with acoustic and optical warnings to inform you when battery capacity is coming to an end. These warnings should tell you to store your work as soon as possible in order not to lose any data.

> **Note**
>
> The following information refers to the standard settings in the Windows XP operating system. If another operating system is installed, the energy settings may not function properly. This particularly applies to Windows NT and operating systems that are not Windows-based.

<u>Warning with low battery-charge state</u>

If the remaining battery power drops under 10% of the overall capacity, the notebook will inform you about this situation as follows in the standard settings:

> • A one-time signal will sound.

> • A text will be displayed that warns you of low battery-charge state.

The notebook will remain switched on. At this time, you should immediately store your work, since battery power will last for another 5 to 10 minutes only.

<u>Warning with critical battery-charge state</u>

If the remaining battery power has reached a rest capacity of 5%, the notebook will automatically carry out the following measures in the standard settings:

- A one-time signal will sound.

- A text will be displayed that warns you of critical battery-charge state.

- The notebook will switch to idle state (⇨ page 4.7).

If you have not done so, you must now connect the notebook with the mains adapter or replace the low battery with a fully charged one.

If you switch on the notebook after the automatic shutdown, note that the battery will only allow operation for a very short time. During the last minutes of battery power, the battery-charge state indicator will indicate this critical state.

Note

Battery performance and lifecycle depend on a number of factors, such as ambient temperature, age, number of charge and discharge cycles, etc. You may extend the battery's lifecycle by disconnecting the notebook from the electrical outlet at least once a month and operating it in battery mode until the battery is fully discharged. Then, re-connect the notebook with the mains adapter.

Using the energy-saving modi

If you operate the notebook with a battery, you may choose to use different energy-saving functions in order to extend operation time. Among other things, the duration of the battery depends on the following factors:

- processor type and CPU clock frequency

- screen brightness

- LCD switch-off

- frequency and duration of access to the hard disk and optical drives

- initial battery-charge status

- usage intensity of connected and inserted additional devices, such as USB devices or ExpressCards that are powered via the battery.

Setting the energy-saving functions

Windows XP

Under Start -> System control -> Performance and maintenance -> Energy options, you can set the notebook's energy-saving functions.

Windows VISTA

Under Start symbol -> System control -> Mobile PC -> Energy options, you can set the notebook's energy-saving functions.

You can configure the notebook so that, e.g., the hard disk drive or screen shuts down after a defined period of time.

In addition to the regular operation mode, in which different devices may be shut down, the notebook has two different energy-saving levels: standby mode and idle state.

Standby mode

If you wish to briefly interrupt your work, you may switch off the notebook without closing the application. In standby mode, the LCD screen is switched off, the hard disk drive shuts down and the processor is clocked to a very low frequency. The notebook's RAM continues to be supplied with energy so that all information remains in the RAM. When you turn the notebook back on, you can continue your work where you left off.

Idle state

When the idle state is activated, all data in the notebook's RAM and the information on the screen are stored on the hard disk drive. Thereafter, the notebook shuts down. Depending on the open programs, this process may take a few seconds.

> **Note**
>
> Activating the standby mode will save energy, when you switch the notebook on and off frequently.
>
> You can also save energy by closing the screen when the keyboard is not in use or when you briefly interrupt your work.

Manually activating standby mode and idle state

To activate these two modi, you have the following options:

- key combination [Fn] + [F8]
- press the power-on button for approx. 1 second
- close the notebook

The notebook's behavior when using either of the above options will depend on the energy-option settings for your notebook.

The standard settings in Windows XP provide for the following configuration for the notebook:

- press keys [Fn] + [F8]:   the notebook will switch to idle state

- briefly press the power-on button: the notebook will shut down in a controlled manner

- close the notebook: the notebook's backlight will switch off; no other measure will be implemented

Allocation to the individual functions may be defined and changed in the Windows XP operating system:

- Click Start -> System control -> Energy options.

- Select the "Extended" folder in the "Energy-option characteristics" window.

- Define the required settings.

The following table shows all the options for customer-specific allocation:

Action	Press [Fn] + [F8]	Power switch	Close
Reaction			
Ignore	x	x	x
Request process selection	x	x	
Switch to standby mode	x	x	x
Switch to idle state	x	x	x
Shut down notebook	x	x	

Important notes on the energy-saving modi

If you do not use the notebook for a long period of time, end the energy-saving mode and switch off the notebook.

If the notebook is in energy-saving mode, do not

- connect external devices

- disconnect the notebook from external devices

- switch the notebook on as long as the installed battery is empty

- insert or remove PC cards or ExpressCards.

4.8 Power supply and energy management

Vehicle adapter

Optionally, you may power supply the notebook via a tempered vehicle adapter that is available as an accessory. This adapter is responsible both for continuous power supply to the notebook and for charging the battery/batteries in the notebook.

Vehicle adapter technical data

Input voltage: 16 - 34V

Output voltage: 19V +/- 0.2V

Output current: 4.2/4.75 A at <20 °C (68 °F)
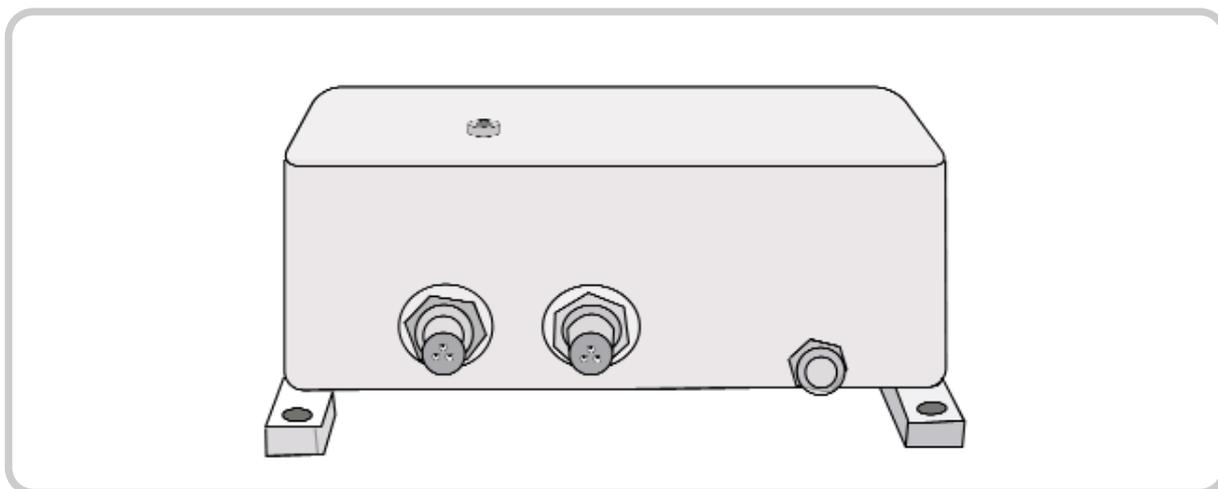
Fig. 4.9: Tempered vehicle adapter DC/DC

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BIOS setup

The BIOS setup serves to set and change important system information, such as time, date, hard disk drive type, DVD drive, passwords, interfaces, etc. All parameters are saved in the CMOS-RAM and may be changed upon demand. The CMOS-RAM is power supplied via the RTC battery so that these settings are maintained, even if the notebook is switched off and disconnected from the power-supply unit.

The settings may only be defined via the keyboard. When you first receive the notebook, the standard settings will have been defined.

Starting the BIOS setup

- Start the notebook (switch off/on or reboot).

- Wait for the following information to be displayed in the bottom-most line on the screen:

"Press <F2> to enter SETUP, <F10> for Boot Menu, <F12> for Network Boot."

- Now, press function key [F2] to go to Setup.

- If a password has been installed, enter it and press Enter.

BIOS setup menu

The BIOS setup is made up of the following menus:

Main: system settings for time, date, hard disk and other drives

Advanced: parameter settings for interfaces, etc.

Security: creation of passwords and safety-function settings

Boot: configuration of the boot order

Exit: end the BIOS setup

<u>Using the menu and changing the settings</u>

Key command	Function description
[F1]	call the Help menu
Cursor keys left/right	select the respective menu
Cursor keys up/down	select the individual sub-items
[F5] bzw. [+]	switch to the previous value
[F6) bzw. [-]	switch to the next value
ENTER	call a sub-menu, if available
[F9]	upload the system's standard settings
[F10]	save the changes and leave the Setup
ESC	leave the Setup

Note

Please note that in the Setup mode, the system uses the English keyboard definition, even if a German keyboard layout is available.

5.2 BIOS setup

Main setup


```
               Phoenix TrustedCore(tm) Setup Utility

  Main    Advanced    Security    Boot    Exit
┌───────────────────────────────────────────────┬──────────────────────────┐
│                                                │   Item Specific Help     │
│  System Time:         [00:07:04]               ├──────────────────────────┤
│  System Date:         [06/12/2008]             │                          │
│                                                │  <Tab>, <Shift-Tab>, or  │
│  Legacy Diskette A:   [1.44/1.25 MB  3½"]      │  <Enter> selects field.  │
│                                                │                          │
│ ▶ IDE Channel 0 Master  [TOSHIBA MK1237GSX-(S1)]│                         │
│ ▶ IDE Channel 0 Slave   [None]                 │                          │
│ ▶ IDE Channel 1 Master  [Optiarc DVD RW AD-7530A-(]│                      │
│ ▶ IDE Channel 1 Slave   [None]                 │                          │
│                                                │                          │
│  System Memory:       640 KB                   │                          │
│  Extended Memory:     2086912 KB               │                          │
│                                                │                          │
└───────────────────────────────────────────────┴──────────────────────────┘
  F1   Help  ↑↓  Select Item  -/+  Change Values   F9   Setup Defaults
  Esc  Exit  ←→  Select Menu  Enter Select ▶ Sub-Menu  F10  Save and Exit
```

Fig. 5.3: BIOS setup

System-Time / System-Date

Use these two parameters to set the current system date and time.

The system automatically detects and uses the following parameters:

Legacy diskette A: displays size and format of the installed diskette drive

IDE Channel 0 Master: displays type of installed HDD

IDE Channel 0 Slave: N/A

IDE Channel 1 Master: displays the installed optical drive

IDE Channel 1 Slave: N/A

System memory: displays size of system memory

Extended memory: displays size of extended memory

Advanced setup


```
            Phoenix TrustedCore(tm) Setup Utility
  Main   Advanced   Security   TPM State   Boot   Exit

                                         ┌─────────────────────┐
                                         │  Item Specific Help │
                                         ├─────────────────────┤
  Legacy USB Support:        [Enabled]   │                     │
  Summary screen:            [Disabled]  │                     │
  QuickBoot Mode:            [Enabled]   │  Enable support for  │
  Extended Memory Testing    [None]      │  Legacy Universal Serial │
  IGD - Boot Type:           [VBIOS Default] │ Bus             │
  PS/2 Mouse                 [Auto Detect] │                   │
  PCI Express - Root Port 1: [Enabled]   │                     │
  USB - Device 29, Function 7: [Enabled] │                     │
  Passive Cooling Trip Point: [79  C]    │                     │
  Processor Power Management [Enabled]   │                     │
  ▶ SIO SMC227 CONFIGURATION              │                     │
                                         │                     │
                                         └─────────────────────┘

  F1   Help    ↑↓  Select Item   -/+   Change Values   F9   Setup Defaults
  Esc  Exit    ↔   Select Menu  Enter  Select ▶ Sub-Menu  F10  Save and Exit
```

Fig. 5.4: Advanced setup

Legacy USB support: enables or disables functions of all USB interfaces.
Options: enabled (default), disabled

Summary screen: displays system configuration when booting.
Options: disabled (default), enabled

Quick boot mode: enables or disables the fast-boot mode in which certain tests are skipped.
Options: enabled (default), disabled

Extended Memory Testing: determines the type of tests to be performed on the extended memory (> 1MB).
Options: none (default), normal, Just zero it

IGD-boot type: selects the screen to display the video signal during booting.
Options: VBIOS Default, CRT, LFP,CRT+LFP, TV, LFP+SDVO, EFP, TV-SDVO, CRT+LFP+SDVO, CRT+EFP

PS/2 mouse: configures the PS/2 connector used for the touch pad and any external PS/2 mouse connected.
Options: Disabled: disables any PS/2 mouse, but leaves IRQ12 open for manual allocation of

other devices.

Enabled: enables the PS/2 mouse connector, regardless whether or not a mouse is connected.

Auto Detect: enables the PS/2 mouse only if available.

PCI Express Root Port 1: configures the Express Port.

Options: enabled (default), auto, disabled

Enabled: port is always enabled.

Disabled: port is always disabled.

Auto: enables the port only enabled if a card is found.

Note: If Root Port 1 is disabled, Root Ports 2 through 4 will also be disabled.

USB Device 29, Function 7: enables or disables USB 2.0 functionality.

Options: enabled (default), disabled

Disabled: throttles data-transfer speed for USB1 compatibility. This measure is required, e.g., in the event of problems with peripherals with very long USB cables. Throttling data-transfer speed could solve this problem.

Passive Cooling Trip Point: sets a temperature threshold for the CPU to be throttled to avoid overheating.

Options: settings from 15 to 119 °C (59 to 246 °F) in steps of 8 °C; default = 79 °C (174 °F)

Processor Power Management:

Options: Disable, GV3 only, C-States, Enable (default).

SIO SMC227 Configuration: configures all National 393 SIO devices. Press Enter to go to another Advanced Setup in which you can also define settings (see next page).

Advanced-2 setup
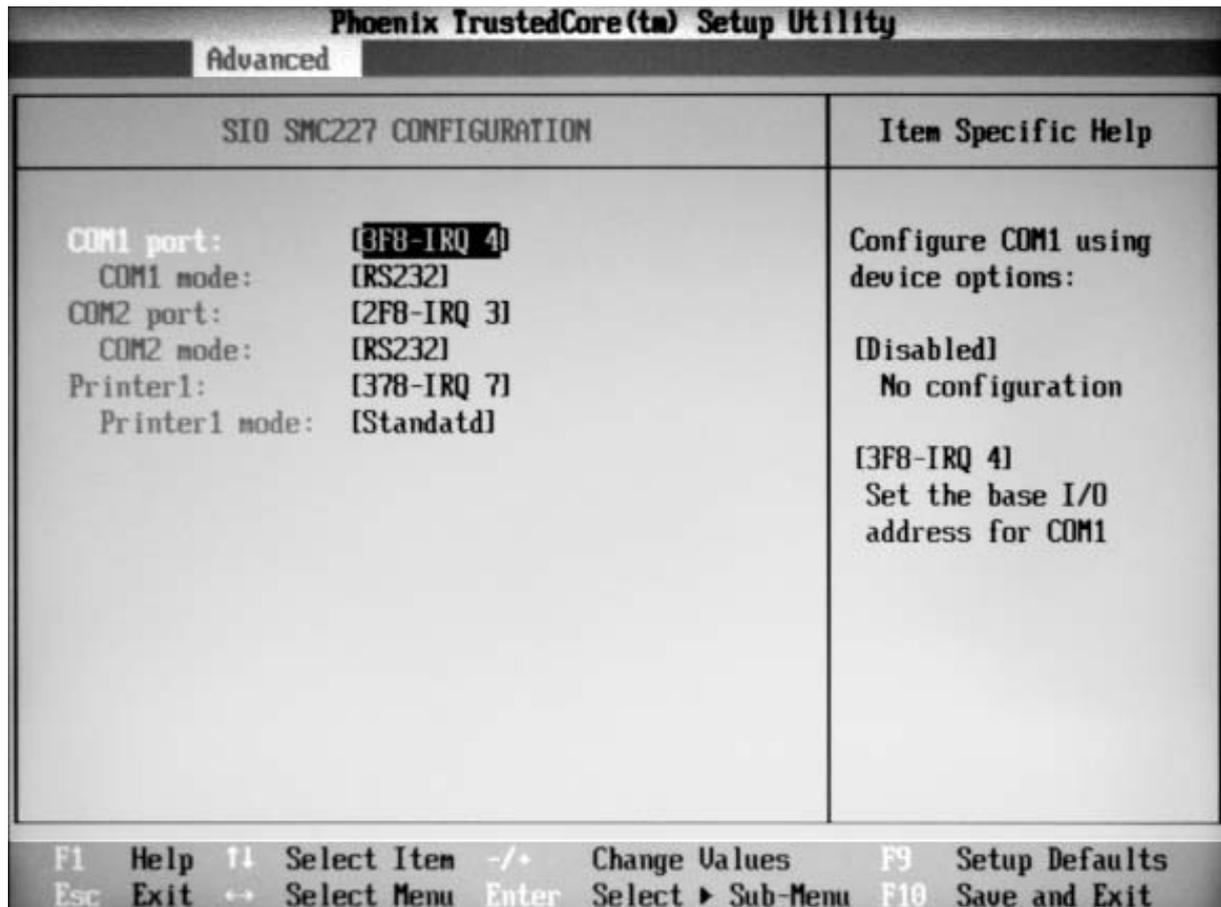
Fig. 5.6: Advanced-2 Setup

COM1 port: configures the COM1 port and defines its base I/O address.
Options: 3F8-IRQ 4, disabled

COM1 mode: defines the COM1 port operation mode, if enabled. If an optional touch screen is installed, this value is set to TTL1. In this case, the COM1 port will be disabled.
Options: RS232, TTL1

COM2 port: configures the COM2 port and defines its base I/O address.

COM2 mode: defines the COM2 port operation mode, if enabled.
Options: RS232, TTL2

Printer1: configures the parallel port and defines its base I/O address.
Options: 378-IRQ 7, disabled

Printer1 mode: defines the parallel port operation mode, if enabled.
Options: standard (default), ECP, EPP. If ECP is defined, DMA1 or DMA3 may be selected.

5.6 BIOS setup

Security setup

```
            Phoenix TrustedCore(tm) Setup Utility
   Main     Advanced    Security      Boot      Exit

                                            ┌──────────────────────┐
                                            │  Item Specific Help  │
                                            ├──────────────────────┤
   Processor Serial Number  [Disabled]      │                      │
   Set Supervisor Password  [Enter]         │ Controls detection of│
   Set User Password        [Enter]         │ Processor Serial No. │
   Fixed disk boot sector:  [Normal]        │ System must be reset or│
   Diskette access:         [Supervisor]    │ restarted from power-on│
   Password on boot:        [Disabled]      │ for settings to take │
                                            │ effect.              │
   USB Interface:           [Enabled]       │                      │
   AC97 Audio Interface:    [Auto]          │                      │
   AC97 Modem Interface:    [Auto]          │                      │
   Cardbus/1394 Interface:  [Auto]          │                      │
 ► RF Security Control:                     │                      │

   F1  Help   ↑↓  Select Item   -/+  Change Values    F9  Setup Defaults
   Esc Exit   ↔   Select Menu   Enter Select ► Sub-Menu F10 Save and Exit
```

Fig. 5.7: Security setup

Processor Serial Number: enables or disables detection of the processor serial number. System must be rebooted for changes to take effect.
Options: disabled, enabled

Set Supervisor Password: defines a password for access to the system's BIOS (setup utility). Press Enter to display a dialog window in which to enter the password.

Set User Password: used to create a user password. Press Enter to display a dialog window in which to enter the password.

Note

If a password has been defined, memorize it or write it down in a secret place. If you forgot the password, the password can only be deleted by a service technician. This service will not be covered by general warranty.

Fixed Disk Boot Sector: enables or disables the write protection for the hard disk drive boot sector to protect it against viruses. Requires a password for the FDISK function or a format commande to be executed when booting.
Options: normal (default), write protect

Diskette access: enables access to diskette drives.

Password on boot: enables or disables the command for password entry. Ths function requires prior creation of the supervisor password.
Options: disabled (default), enabled

USB interface: enables or disables the USB functions available in the device.
Options: enabled (default), disabled

AC97 audio interface: enables or disables the integrated AC97 audio card.
Options: auto (default), disabled
Auto: AC97 will be enabled, if available.
Disabled: AC97 audio card will be disabled, regardless of its availability.

AC97 modem interface: enables or disables the integrated AC97 modem.
Options: auto (default), disabled
Auto: AC97 modem will be enabled, if available.
Disabled: AC97 modem will be disabled, regardless of its availability.

Cardbus/1394 interface: enables or disables the CardBus and the 1394 interface.
Options: auto (default), disabled

RF security control: press Enter to individually enable or disable the functions for WLAN, GPRS, GPS and Bluetooth.

Boot setup
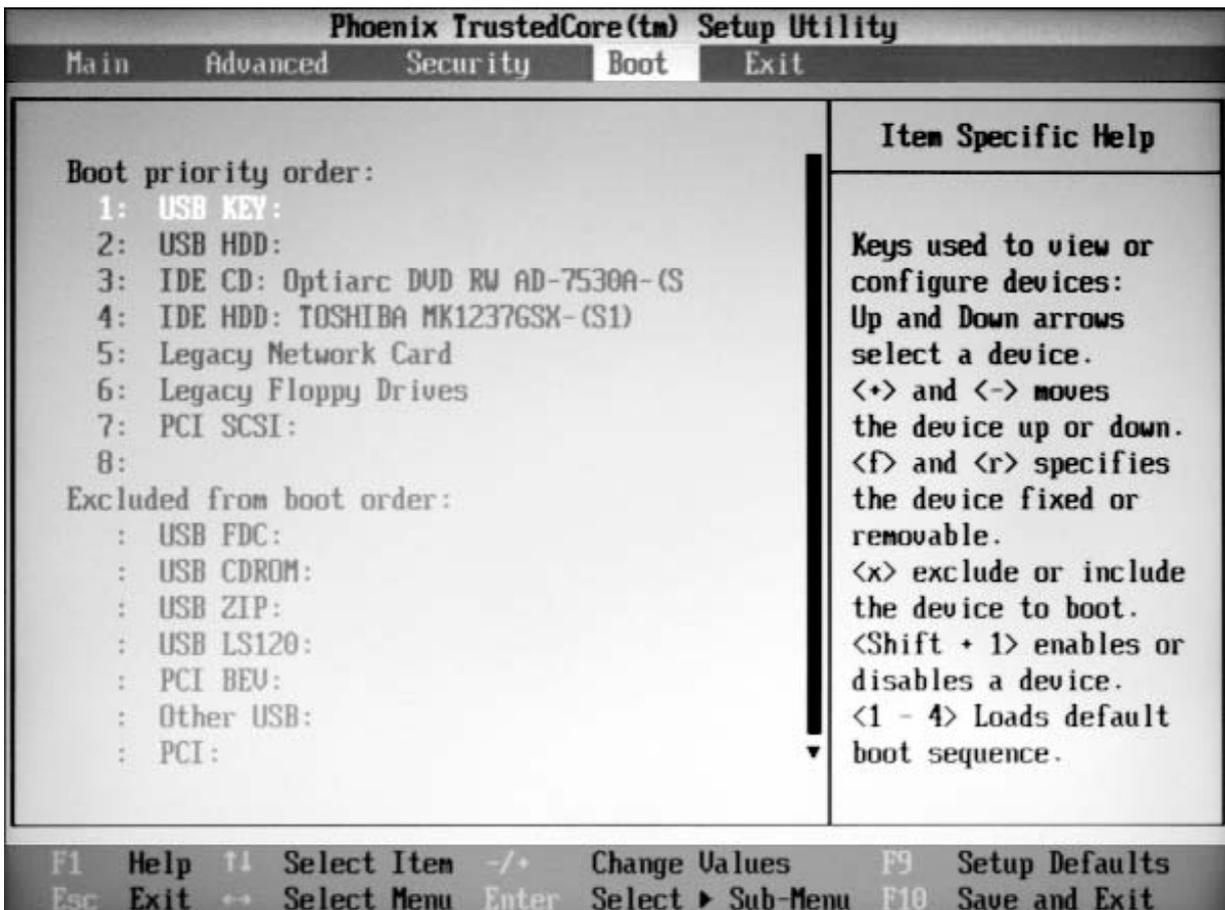
Fig. 5.9: Boot setup

Boot priority order: defines the order of the devices that are accessed during system boot.

Excluded from boot order: defines the devices to be excluded from boot order.

Exit setup
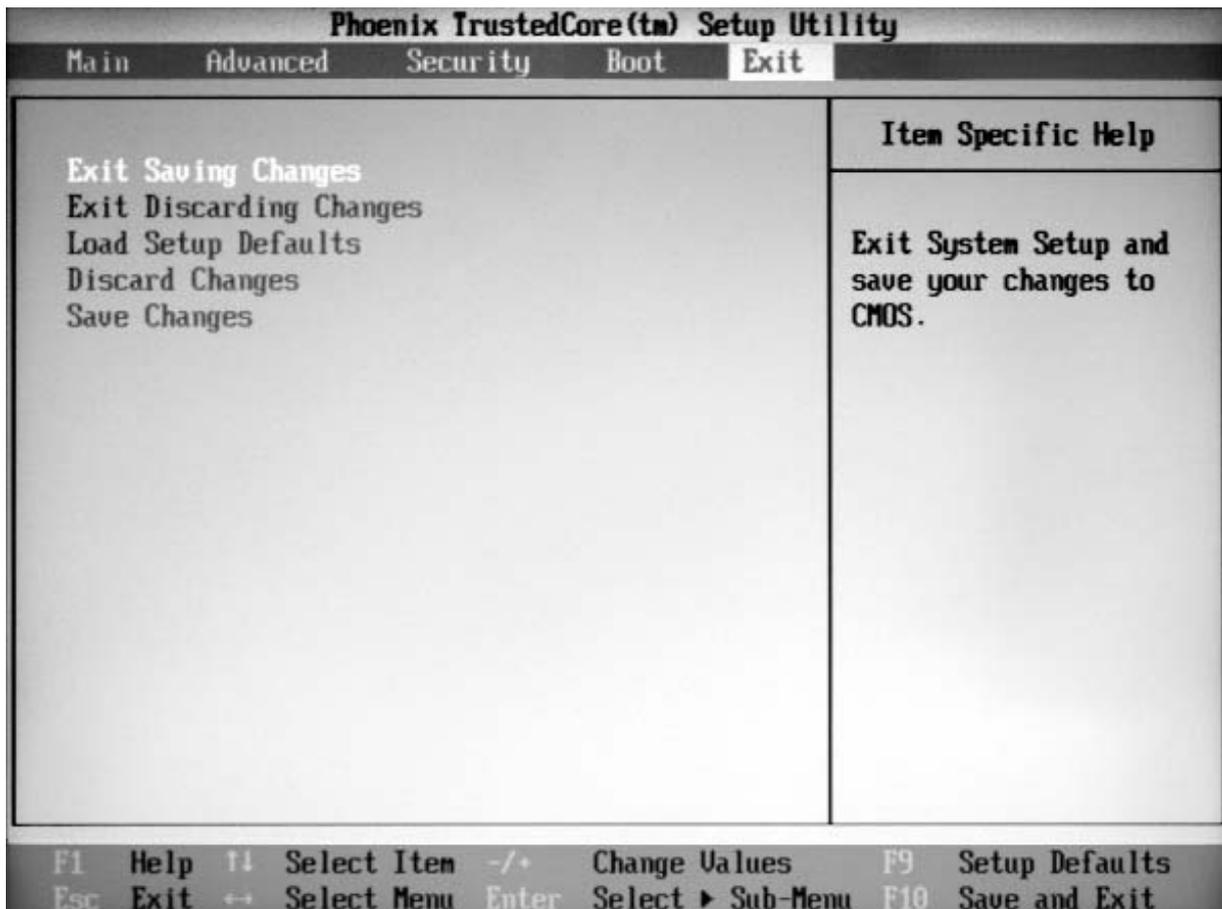
Fig. 5.10: Exit setup

Exit Saving Changes: saves changes and ends the Setup.

Exit Discarding Changes: discards all changes and ends the Setup.

Load Setup Defaults: loads default settings (except for date and time).

Discard Changes: discards the changes and loads original settings.

Save Changes: saves changes.

5.10 BIOS setup

DriverSoftwareDriverSoftw

DRIVER SOFTWARE

Note: Most device drivers are available in Windows 98/2000/ME/XP. Only if the default driver does not work properly will you need to install it from the enclosed CD.

The utility CD includes most drivers for the devices installed in the notebook. Contact your dealer if any driver is missing or does not work properly upon installation. Please read the readme file on the driver CD for your notebook before starting to install new drivers.

Chip set Windows WINXP/WIN2000/WIN98SE/ME driver installation:

Select the directory RK8EX-RF8EX-DR8EX\Drivers\Chipset\2kXpVista..., then start infinst_autol.exe and follow the prompt to complete the installation.

VGA driver installation for Windows 98SE/2000/ME/XP:

Insert the driver CD into the DVD drive. Select the directory RK8EX-RF8EX-DR8EX\Drivers\VGA\,Intel_945GM\2kXP32 and start win2k_xp1429.exe. Follow the prompt to complete the installation. After rebooting the system, you can set the correct color depth and resolution under "Properties of display" under Systems control.

Standard resolution:	1024 x 768 pixels
Settings for SXGA+ screen (optional):	1400 x 1050 pixels

The following table lists the setting options for the internal display (LCD) and external screen (CRT) or the external digital screen via the DVI output.

Performance of the VGA utility display

Resolution & color depth	LCD	RGB	LCD + RGB
640x 480x 16-bit color depth	O	O	O
640x 480x 24-bit color depth	O	O	O
640x 480x 32-bit color depth	O	O	O
800x 600x 64K color depth	O	O	O
800x 600x 24-bit color depth	O	O	O
800x 600x 32-bit color depth	O	O	O

1024x 768x 16-bit color depth	O	O	O
1024x 768x 24-bit color depth	O	O	O
1280x 1024x 16-bit color depth	O*	O	O*
1280x 1024x 24-bit color depth	O*	O	O*
1280x 1024x 32-bit color depth	O*	O	O*
1600x 1200x 16-bit color depth	O*	O	O*
1600x 1200x 24-bit color depth	O*	O	O*
1600x 1200x 32-bit color depth	O*	O	O*
2048x 1536x 16-bit color depth	O*	O	O*
2048x 1536x 24-bit color depth	O*	O	O*
2048x 1536x 32-bit color depth	O*	O	O*

* by scrolling

This table lists the standard displays. The system also supports standard modi with lower resolution and color.

USB 2.0 driver

Windows 98SE/2000/ME/XP driver installation:

The USB 2.0 drivers for the Rocky III+ notebook must only be installed in Win2K and Win 98SE/ME. You will find the files required for the USB 2.0 update on the utility CD.

Touch screen driver

Enter the BIOS setup and set the COM1 port as "TTL1." Then, stop the automatic installation and manually install the driver by starting the file RK8EX...\Drivers\Touchscreen\DP9000\2kXpVista3264\PentMount...\setup.exe.

DVD drive

In Windows 98SE/2000/ME/XP, the DVD drive does not require a driver. Other operating systems may require installation of the respective driver.

6.2 Driver software

PCMCIA driver in Windows 98SE/2000/ME/XP

The driver is automatically installed in Windows, except for Windows 98SE where you will need to manually install it. After Windows 98SE has detected a new PCMCIA card, the driver must be updated from the CD: click Start -> System control -> System -> Device manager -> PCMCIA adapter -> Card bus.

Audio driver in Windows 98SE/2000/ME/XP

Insert the driver CD into the DVD drive. Click WDM_A400.exe in the directory RK8EX...\Drivers\Audio\2kxp_3264. The installation wizard will guide you through installation.

LAN driver

Drivers for the 98SE/2000/ME/XP operating systems are available in the directory RK8EX..\Drivers\PCIe_1GLAN. For installation, start the device manager in your operating system, select the network adapter and the respective card for the correct operating system. Then, click "Driver update." Follow the prompt on the screen up to installation completion.

Mini PCI-E Intel 3945ABG WLAN driver

Insert the driver CD into the DVD drive. Click v11.1.0.5_xp32.exe in the directory RK8EX...\Drivers\PCIe_Intel WLAN\2kXp32 and follow the prompt to complete the installation.

Fax-card/modem-card drivers

Insert the driver CD into the DVD drive. Click setup.exe in the directory RK8EX...\Drivers\MDC\mdc_w2kxp and follow the prompt to complete the installation.

Bluetooth driver

Insert the driver CD into the DVD drive. Click setup.exe in the directory RK8EX...\Drivers\BLU-BC4\2kxp\BlueSoleil_(Standard) and follow the prompt to complete the installation.

AnnexAnnexAnnexAnnex
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exAnnexAnnexAnnexAn
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exAnnexAnnexAnnexAn
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Technical data

Processor

Intel® Core 2 Duo Mobile T5500, 2MB shared Level2 Cache, 1.66GHz, FSB 667MHz

Memory

1GB - 4GB DDR2 RAM

Hard disk drive

120GB, Serial ATA, exchangeable

Diskette drive (not contained in scope of delivery)

3.5" floppy drive, connectable externally via the parallel port as a single drive

Optical drive

DVD drive

LCD screen

15.1" TFT active matrix display, 1024 x 768 pixels, 16.7 m colors
or, optionally, 15.1" TFT active matrix display, 1400 x 1050 pixels, 16.7 m colors

Graphic card

224MB SMA (max.) Intel Graphics Media Accelerator 950 (GMA 950), Integrated 256-bit, 400MHz Core 3D/2D, Dynamic Video Memory Technology (DVMT)
Optionally: Nvidia Geforce 7600 Go or Nvidia Geforce 8400 Go

Keyboard

integrated German keyboard with integrated numeric keypad

Pointing device

Touch pad, PS/2 pressure-sensitive (resistive), external mouse can be connected

Sound card

AC97 sound, 16-bit, stereo loudspeakers

Interfaces

2 x USB 2.0 (on the back for mouse/keyboard)
1 x parallel on Sub-D, 25-pole
2 x RS-232 on Sub-D, 9-pole
2 x IEEE 1394 (FireWire)
1 x PS/2
1 x 120-pin docking connector
1 x VGA (on Sub-D, 3 lines, 15-pole)
1 x DVI-D on DVI-I with USB (in Dual-Link version for remote function)
3 x audio: micro-in, speaker-out, line-out
1 x PC card-slot type II
1 x ExpressCard (PCIe)
1 x LAN Ethernet 10/100/1000 Mbit on RJ45
1 x DC-in MIL

Battery

Integrated, rechargeable Lithium-Ion battery, capacity: 7200mAh,
secondary Lithium-Ion battery, exchangeable, can be integrated in DVD-drive slot (operating
time: 140 or 280 minutes), not contained in scope of delivery

Power Supply

Secondary voltage: 19V DC
Operating voltage: 100 to 250V, 50 to 400Hz
External DC/DC power-supply unit, VG-compliant pursuant to VG 96916 part 5
AC/DC power-supply unit

System heater

-21 °C, max. heating time until operational: 10 minutes
-31 °C, max. heating time until operational: 26 minutes (extended temperature range)

A.2 Annex

Power consumption

Operating: 30W, max. (heating operation): 68W

Measurements and weight

Width x Height x Depth	340 x 64 x 284 mm (wihout rubber bumpers)
Weight	5.5kg incl. battery and optical device

Casing	magnesium/aluminum

Certifications	IP55, MIL-STD 810F, MIL 461

Environmential specifications

Results of the US Military Standard MIL-STD-810 F/EMI/RFI

Height above sea level (Method 500.4 Procedure I, II)	4570m (operating) or 12180m* 12180m (storage)
Ambient temperature (Method 501.4, Procedure I, II) (Method 502.4, Procedure I, II)	-20 to +50 °C (-4 to +122 °F) (operating) -40 to +70 °C (-40 to +159 °F) (storage)
Temperature shock (Method 503.4, Procedure I)	-40 to +70 °C (-40 to +159 °F) (storage) (operating N/A)
Solar radiation (Method 505.4, Procedure I)	Diumal Cycle A1, worldwide deployment (operating and storage)
Rain protection (Method 506.4, Procedure I)	276kPa; 0.5 - 4.5 mm diameter (storage) (operating n/a)
Humidity (Method 507.4, Procedure I)	95% (storage) (operating N/A)
Salt fog (Method 509.4, Procedure I)	5%; 35 °C (95 °F) (storage) (operating N/A)
Explosive atmosphere (Method 511.4, Procedure I)	passed (operating and storage)

Vibration	
(Method 514.5 Category 5)	Tracked Vehicle Vibration
(Method 514.5 Category 14, Prozedur I)	Helicopter Vibration OH58A/C
(Method 514.5 Category 20, Prozedur I)	Comp. Wheeled Vehicle Vibration
	(operating and storage)

Shock	40g; 11ms
(Method 516.5, Procedure I)	(operating and storage)

* only with special HDD casing (not contained in scope of delivery)

Options

- Removable Flash Disk SATA

- LCD screen with SXGA+ (1400x1050) resolution

- NVIDIA GeForce 7600Go Graphics Processor Unit, 256MB high speed DDRII memory dedicated, alternative: NVIDIA GeForce 8400Go

- Touch screen resistive, sunlight readable

- Dual Drive (3-spindel): DVD+FDD internal simultaneously

- CD-RW/DVD-RW drive

- 56K fax/modem MDC

- 2nd LAN card 10/100/1000 MBit

- 4x RS232 external interfaces

- Fiberoptic LAN 100/1000 Mbit

- WLAN card (Intel Pro Wireless 3945ABG 802.11a/b/g)

- GPRS/GSM card (Siemens MC75)

- GPS module (SIRF STAR III)

- Bluetooth module v2.0 class 1/2

- PCMCIA 2 x type II or 1 x type III

- Internal CAN BUS card

- Integrated chip-card reader

- Internal vehicle adapter (direct DC 12-32V input)

- Backlight for keyboard

A.4 Annex

- Extended temperature range up to -30 °C (86 °F) only wiht released HDDs, i.e., Hitachi Endurastar, or with additional heater elements

- Separte mass conduct and/or isolated mass concept for vehicle installation

- Version wiht military round connectors

- MIL-STD 461E certification Ground Navy / Ground Army

- Zone 0 / SDIP 27 Class A

- Zone 1 / SDIP 27 Class B

Accessories

- external 3.5" diskette drive

- secondary battery (11.1V/7200mAh Lithium-Ion battery) > 4 h operating time (exchangeable with DVD drive)

- secondary hard disk drive (exchangeable with DVD drive)

- keyboard protection against dirt, for standard keyboard without backlight

- PC card cover (protection of the PC card connector)

- external vehicle adapter (DC 12-32V input)

- battery charger for primary and secondary batteries

- docking station DockUnder with PCI slot, VGA/DVI interface and internal vehicle adapter

Error messages and troubleshooting

The notebook does not start.

- Please make sure the notebook is properly connected with a power source and switched on. Check whether the line indicator of the mains adapter is active.

- Make sure the battery is properly installed and charged.

- If the notebook is connected with a multiple electrical outlet or an uninterruptible power supply (UPS), make sure that the multiple electrical outlet or the UPS is connected with a power source and switched on.

- If you are using an external screen, make sure it is connected with a power source and switched on. Make sure the regulators for brightness and contrast are correctly set. Find further information on this topic in the manual for the indicator device.

- Disconnect the power-supply cable and remove the battery. Wait for 3 to 5 minutes. Then, re-insert the battery, re-connect the power-supply unit and press the power-on button to switch on the notebook.

A BIOS error occurs when switching on the notebook.

Follow these steps when the message "Press <F1 > to resume, <F2> to setup" appears in the bottom section of the screen:

1. Press [F2].
   The BIOS setup screen will be displayed. If not, reboot the notebook and press [F2] a number of times as soon as text is displayed on the screen.

2. Set the date (month/day/year). Press [Enter].

3. Set the time (hour: minute: second). Press [Enter[.

4. Select "Exit" in the Setup menu, then go to "Exit saving changes."

The notebook will now reboot. Please contact your Service Center should this error occur frequently.

There is no display on the screen, even though the green operation indicator is illuminated.

Follow these steps:

1. Press the power-on button for more than 4 seconds and check whether the power indicator extinguishes. Then, switch the notebook back on.

2. If there is still no display on the screen, disconnect the power-supply unity cable, remove the battery and wait for approx. 1 minute. Then, re-insert the battery, re-connect the power-supply unit and switch the notebook back on.

The notebook or software no longer reacts.

• If the notebook no longer reacts when carrying out a software application, press key combination [Alt] + [F4] to close the application window.

• If key combination [Alt] + [F4] does not work, press key combination [Ctrl] + [Alt] + [Del] to call the task manager. Then, click "Shut down" in the menu and re-boot the system.

• If the notebook does not react to any of the above measures, hold the power-on button until the notebook shuts down.

• Disconnect the power-supply cable and remove the battery.

Attention

When you switch the notebook off with key combination [Ctrl] + [Alt] + [Del] or with the power-on button, you may lose unsaved data.

• Try to re-install the software.

• Contact the software manufacturer or Technical Support.

Service and Support

In the event of repair works that require you to send the notebook to roda Computer GmbH, please follow these instructions:

- Before sending the notebook, clarify with the Service Department whether the problem can be solved without sending the notebook.

- Download the service form for repair works from the roda homepage. You will find this document in pdf format in the service download area at www.roda-computer.com.

- Enter all required data in the service form, including the notebook's serial number (⇨ page 1.7).

- Send the notebook to the following address - if possible, in the original packaging:

  roda Computer GmbH
  Service-Abteilung
  Bredenhop 20
  32609 Hüllhorst Germany

Fig. E.1: Service form

Contact:

roda Service-Center

Fon: +49 (0)5744-944-470

Fax: +49 (0)5744-944-475

E-Mail: support@roda-computer.com

Internet: www.roda-computer.com

Business hours:

Monday - Thursday

08:30 - 12:30
13:00 - 16:30

Friday

08:30 - 12:30
13:00 - 15:00

Overview of the power supply connectors for different countries

Version	Country/region	Technical data
	Europe	220V, 50Hz, 6A
	Switzerland	220V, 50Hz, 6A
	Great Britain	240V, 50Hz, 6A
	Australia	240V, 50Hz, 6A
	North America	240V, 60Hz,10A
	North America	120V, 60Hz, 7A
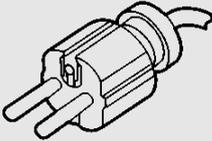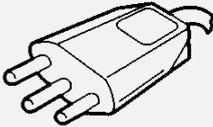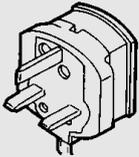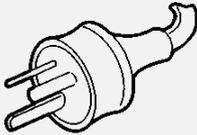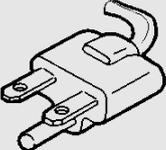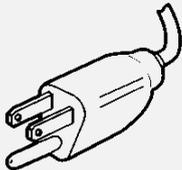
Table C.1: International line-cable connectors

INDEX