IMPORTANT INFORMATION

This device (notebook PC and AC adapter) conforms to the relevant safety regulations for information processing equipment and electronic office machines for use in an office environment and in a mobile environment as well.

If you are unsure whether you should set up the system in the planned environment, please contact your nearest sales center or our Service center.

Read the following information carefully. Follow all warnings and instructions, also those marked on the product.

General
Safety Instructions

- Condensation can form if the device is brought in from a cold environment. Before switching on the device, you should wait until the device has acclimatized and is completely dry.
- When setting up your device, please observe the information regarding environmental conditions and system specifications in the appropriate chapters of this operating manual.
- Slots and openings in the device and its accessories are provided for ventilation to protect the product from overheating. To ensure proper ventilation, do not operate the device on a soft surface (e.g. carpet, bed, sofa, etc.) that can block or cover these openings. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
- This device is equipped with a safety-tested power cable and should only be connected to a properly grounded wall outlet.
- When travelling, make sure that the power cable of the device conforms to the safety requirements of the country and is certified in that country as well.
- The ON/OFF button does not disconnect the device from AC line voltage. You must unplug the device to completely disconnect it from AC line voltage.
- Only the AC adapter included in the delivery should be used to operate the notebook PC.

- Ensure that the power socket on the AC adapter or the grounded wall outlet is easily accessible.
- Be sure to route the cables in such a way that they do not represent a hazard (e.g. stumbling danger) and so they will not be damaged.
- Never connect or disconnect data transmission lines during a thunderstorm.
- Protect the device and its accessories from dust, humidity, and temperature extremes (e.g. direct sunlight).
- Take care to prevent foreign objects (e.g. bracelets, paper clips, etc.) or liquids from entering the device (danger of electric shock, short circuit).
- Only authorized personnel should repair the device. Unauthorized opening of the device and improper repairs can pose a great danger to users (electric shock, possible fire).
- If the LCD screen is damaged (e.g. glass broken), do not allow any escaping liquid to come into contact with skin, mucous membranes (eyes, mouth). Do not inhale vapors. – Clean parts of the body and clothing that have already come into contact with such liquids with plenty of water and soap.
- In emergencies (e.g. if the housing, controls, or power cable are damaged, or if liquid or foreign objects have entered the device), immediately turn off and unplug the device and contact your sales center or our Service center.

Safety Instructions for Transporting the Device

- Never grip the device at its opened LCD display when you carry it. For transport, make sure that the notebook is completely closed.
- If the battery pack is removed, do not carry the device by holding it at the battery receptacle.
- Protect the device from severe shocks. Whenever possible, use the slipcase supplied with the notebook to carry it.
- Protect the device from temperature extremes (e.g. exposure to sunlight in a car). Refer to the ´Technical Data´ section of this manual for details about ambient temperature specifications.

Safety Instructions for Cleaning the Device

- Switch the system off, disconnect the AC adapter, and remove the battery pack before you clean the notebook PC.
- Only a service technician should clean the interior of the notebook.
- Do not use scouring powder or any cleaning agents which dissolve plastics. Do not use liquid or aerosol cleaners.
- Take care to prevent any liquids from entering the device.
- Make sure not to block the ventilation slots on the notebook or on the display.

Use a soft, dry cloth to clean the outside surfaces of the notebook. If the notebook is still dirty, dip a cloth in water containing a mild detergent and wring it out well, then use it to clean the exterior of the notebook.

You can use disinfectant wipes (available in drug stores) to clean the keys.

- Do not allow the disinfectant wipes to be in contact with the keys for longer than 5 minutes, and do not leave the wipes on the housing after you are finished cleaning.
- Use a soft, damp, lint-free cloth to clean the display screen, then use a soft dry cloth to dry it.

Safety Instructions for the Lithium Battery (Backup Battery)

- This notebook contains a Lithium battery which maintains the date and time of the built-in clock and other system data in memory if the AC line voltage is disconnected. Only authorized personnel should replace this backup battery.
- Danger of explosion may occur if the battery is improperly replaced.

Safety Instructions for the Nickel Metal Hydride (NiMH) Battery

- To prevent damage to the NiMH battery pack, high-speed charging is automatically interrupted if the ambient temperature falls below 5 °C or exceeds 35 °C. Thus, we recommend that you charge the battery only if the ambient temperature is within this specified range.
- Use the battery only for this notebook.
- Take care not to drop the battery pack or otherwise damage its housing. A short circuit in the battery can result in overheating and possibly cause a fire.
- Never interconnect the positive and negative terminals of the battery.

Environmental Protection Instructions for Battery Disposal

In the interest of environmental protection, please follow these instructions:

- Dispose of used-up Nickel Cadmium (NiCd) batteries, Nickel Metal Hydride (NiMH) batteries, and Lithium batteries properly, at appropriate special-purpose collection sites in your country.
- Never put batteries of any type or any chemical specification to normal (house) garbage/refuse disposal.

Danish

ADVARSEL! Beskyt miljøet. Brugte NiCd/NiMH-og Lithium batterier må ikke blandes med almindeligt affald. Skal afleveres i batteri opsamlingsbokse eller på kommunens affaldsplads.

Swedish

VARNING! Explosionsfara vid felaktig batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruksjon.

Finnish

VAROITUS! Soujellaksesi luontoa ole hyvä ja toimita käytetty NiCd/NiMH-tai Litium-akku paristojen tai ongelmajätteiden keräyspisteeseen.

Norwegian

Av hensyn til naturen, ber vi deg kaste brukte Nikkel batterier (NiCd/NiMH) og Lithium batterier i nærmeste retur container for batterier.

European CE Certification

CE This device meets the requirements of EC Directive 89/336/EWG "Electromagnetic Compatibility".

All other devices connected to this product must have RFI suppression in accordance with BMPT Directive 1046/84 / 243/91 or EC Directive 89/336/EC. Products meeting these requirements are accompanied by a certificate issued by the manufacturer and carry the CE symbol.

In Germany, products not complying with these requirements can be operated only after special authorization has been granted by the BZT.

Important Notes for U.K.

Warning! This apparatus must be earthed for your safety!

To ensure safe operation the three-pin plug (not for U.K.) must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe.

For your safety, if you have any doubt about the effective earthing of the power point, consult a qualified electrician.

Warnings

- Disconnect the mains plug from the supply socket when not in use
- This equipment is not designed for connection to an IT power system
- Care must be taken to ensure that the integrity of the PELV (Protective Extra Low Voltage) system is maintained when interfacing to other parts of equipment takes place.

Important Notes for U.S.A. and Canada

The power cable for this device must satisfy the safety requirements of the country where the device is used. It must also have been approved for use in this country.

For use in the United States and Canada, the power cable must be UL listed and CSA labelled.

If the device is mounted on a desk or table, cable types "SVT" or "SJT" must be used.

If the device stands on the floor, only cable type "SJT" may be used.

The power cable must be selected according to the power draw for your device. The following table lists the possible power cables for your device.

Cable type	Conductor type	Maximum rated current of device
SJT	AWG18	10 A
	AWG16	12 A
	AWG14	12 A
SVT	AWG18	10 A
	AWG17	12 A

Attachment Plug Cap:

Moulded on having NEMA 5-15P configuration for 120 V units and NEMA 6-15 P configuration for 240 V units.

FCC Class B Radio Frequency Interference Statement

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 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:

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

Notice 1:

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

Canadian Department of Communications

Regulatory Statement

This apparatus does not exceed Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Réglement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Table of Contents

List of Figures

List of Tables

Chapter 1

Getting Started

This chapter introduces the SCENIC 4N notebook system and gives first-time operating instructions.

1.1 Overview

The SCENIC 4N is a notebook PC based on an SL Enhanced i486 SX processor with a 33 MHz clock speed. Combining performance, versatility, and a host of advanced power management features, this notebook helps you work with unmatched productivity and reliability.

The system has 4 MB of RAM, expandable to 8 or 12 MB. It also comes with a 1.44-MB diskette drive and an easy-to-upgrade 2.5-inch high capacity hard disk. Bundled software which is pre-installed on the hard disk includes MS-DOS, Windows for Workgroups, and SCENIC 4N System Utilities (e.g. VGA display drivers). Operating software for PCMCIA cards is supplied on a separate diskette that comes along with the system.

Modules such as keyboard, hard disk, and battery pack are all designed to be easy to install and remove. The trackball, centrally located on the palm-rest, makes it easy to control cursor movement under the Windows environment.

Another important feature is the high-performance graphics display. The SCENIC 4N has a monochrome or color LCD. The monochrome notebook SCENIC 4N has a 9.5-inch (24-cm) non-glare TSTN monochrome LCD displaying high-contrast gray scale images. The color notebook SCENIC 4NC uses a DualScan STN 9.5-inch (24-cm) color LCD providing excellent display quality and brilliant colors.

The SCENIC 4N video subsystem supports an external multi-frequency VGA monitor with the following resolutions: 640 x 480 in 256 colors, 800 x 600 in 256 colors, and 1024 x 768 in 16 colors. With the monochrome model, you can perform simultaneous operation of your LCD and the external VGA monitor, an advantage for giving presentations. With simultaneous display, you can control the presentation from the monochrome LCD and at the same time face your audience. You can even connect an LCD projection panel for large-audience presentations.

Advanced power management features such as automatic LCD and hard disk power-down, CPU doze mode, and system standby and suspend modes enable this notebook to conserve battery power. The SCENIC 4N notebook uses Nickel Metal Hydride (NiMH) batteries. NiMH batteries have 10% to 20% higher capacity than Nickel Cadmium (NiCd) batteries and do not pose as an environmental hazard when disposed.

1.2 Unpacking and Checking the Items

Remove all items from the carton and save the packing materials for future use. If any of the following items is missing or not in good condition, contact your dealer or our Service center immediately.

- SCENIC 4N notebook computer (including a battery pack) (◊)
- AC adapter and power cord (◊)
- Carrying bag for the system (slipcase)
- PCMCIA support diskette[1] (German/English)
- SCENIC 4N operating manual (German/English)
- User guide/licence for ´MS-DOS´ (German) (◊)
- User guide/licence for ´Windows für Workgroups´ (German) (◊)
- Guarantee vouchers booklet and software order form

Check for optional accessories, if you ordered any:

- Additional country-specific system pack (see note below)

1 For details about the PCMCIA operating software, refer to the help and docu-mentation files supplied on the diskette. See also section 3.6 of this manual.

- 4-MB or 8-MB RAM module
- Additional battery pack
- Additional AC adapter
- External battery charging holder

NOTE: *The system package is supplied with items specially prepared for use in Germany. These items are marked (◊) in the above checklist. Foreign customers will find an additional system pack containing country-specific items such as key caps, power cord, user manuals (including licence cards), and in some cases, diskettes for installing the operating system software (if not pre-installed on the hard disk).*

1.3 The LCD Display

The monochrome notebook SCENIC 4N uses a non-glare, backlit LCD display. The 9.5-inch (= 24-cm) screen supports text and graphics modes in up to 640 x 480 resolution and up to 64 gray shades for color emulation.

The color notebook SCENIC 4NC uses a DualScan STN color LCD that displays excellent color images. The 9.5-inch (= 24-cm) screen displays 256 vibrant colors in 640 x 480 resolution.

Open the display by pulling out the front latch as shown in Figure 1-1. Lift the display and tilt it to a comfortable viewing position.

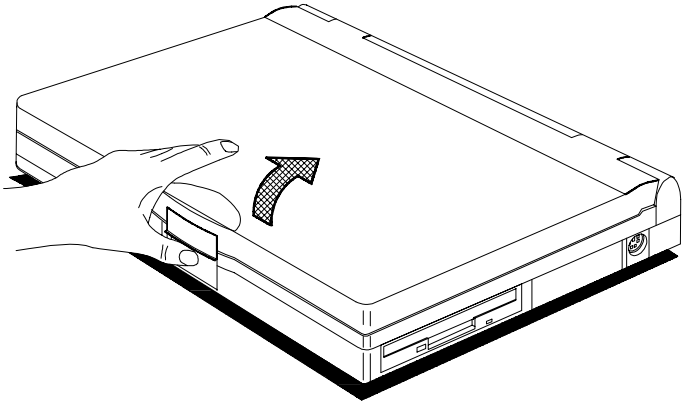

Figure 1-1 Opening the Display

To close the display, fold it down gently until the latch clicks into place.

WARNING! *To avoid damaging the display, do not slam it when closing. Do not place any object on top of the notebook when the display is closed.*

A microswitch, located near the LCD cover hinge, detects the opening and closing of the LCD display. The LCD backlight goes off and the buzzer beeps when you close the display without turning off the system power. Reopening the display turns on the backlight again.

NOTE: *If you connected an external monitor to the system, you can still see the display through the monitor.*

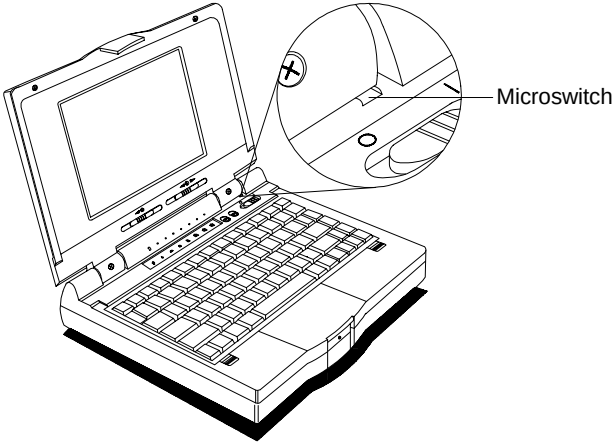

Figure 1-2 Microswitch Location

NOTE: *The LCD power-saving feature turns off the LCD after a preset period of inactivity to reduce power consumption. See Section 4.5.6 for details.*

1.4 Connecting the AC Adapter

The AC adapter accepts input voltage ranging from 100 V to 240 V at a frequency range of 47 Hz to 63 Hz and can thus be used on nearly all national electricity networks.

Figure 1-3 shows how to connect the AC adapter.

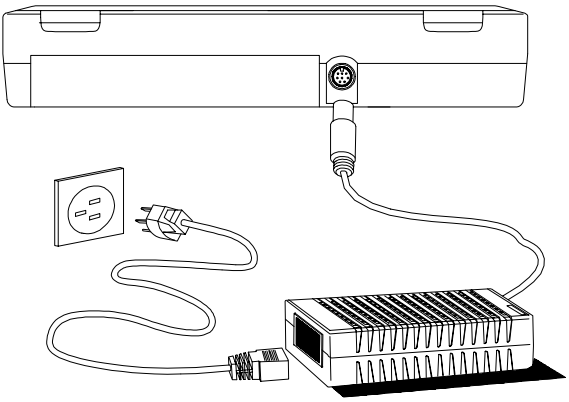

Figure 1-3 Connecting the AC Adapter

IMPORTANT: *The power cord of the AC adapter must be connected to an earthed wall outlet.*

NOTE: *If you use the AC adapter with the supplied power cord in foreign countries, you will possibly need a mains plug adapter which is available from specialist shops (or ask at your hotel´s reception for lending).*

Two LED indicators on the AC adapter indicate the adapter status. When you plug the AC adapter into a power outlet, the power indicator (green LED) lights up. When the adapter recharges the battery pack, both the power indicator and the battery-charging indicator (yellow LED) light up.

Figure 1-4 shows the LED indicators on the AC adapter.

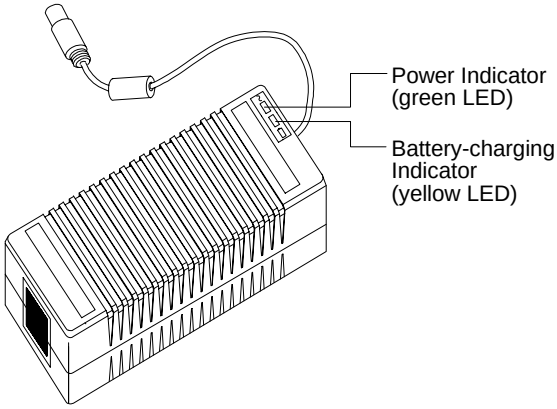

Figure 1-4 AC Adapter LED Indicators

IMPORTANT:

1. *Do not use the AC adapter or the battery pack with other notebooks or any other devices.*
2. *Do not use other AC adapters and battery packs not specifically designed for this system.*
3. *Unplug the AC adapter by pulling on the connector, not the cord. Pulling on the cord may damage the connections inside the connector.*

1.5 Starting the System

Figure 1-5 shows the location of the power ON/OFF switch. Slide this switch to the right (position marked "I") to power on the system. The power indicator lights up.

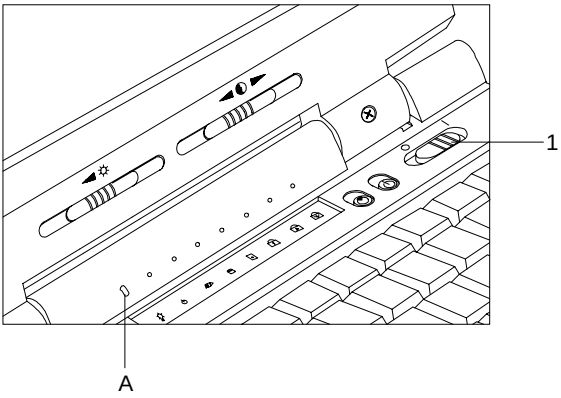

Figure 1-5 ON/OFF Switch and Power Indicator

1. **ON/OFF Switch**
A. **Power Indicator**

The system runs a series of power-on self-tests (POST) and displays POST messages. Next, the operating system is loaded from the hard disk (or from a bootable diskette). If you get error messages instead, or if the operating system is not loaded, see Chapter 6 for assistance.

NOTE: *When you switch on the notebook for the first time, an installation program is automatically started which you will need to set up your system software. For getting started, please follow the instructions described in section 1.10.*

1.6 Operating Elements and Indicators

Figures 1-6 and 1-7 show the locations of the control buttons and status indicators.

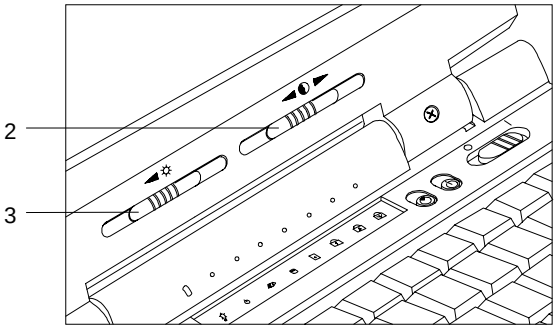

Figure 1-6 Locations in Monochrome Notebook

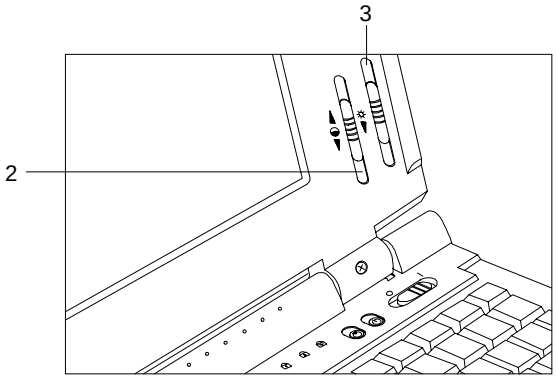

Figure 1-7 Locations in Color Notebook

2. **LCD contrast slider**
3. **LCD brightness slider**

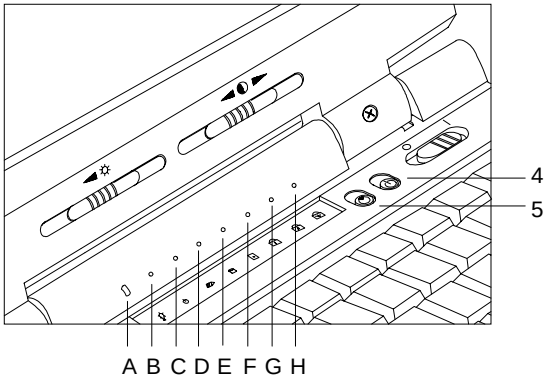

Figure 1-8 Further Control Buttons and Indicators

4. **Standby/Suspend button**
5. **Power management setup button**

A. **Power indicator**

B. **Standby mode indicator**

C. **Speed indicator**

D. **Diskette drive access indicator**

E. **Hard disk drive access indicator**

F. **Num Lock indicator**

G. **Caps Lock indicator**

H. **Scroll Lock indicator**

Control Buttons and Symbols

Brightness knob: (2) controls the display intensity of the LCD screen.

Contrast knob: (3) controls the display clarity of the LCD screen.

Standby/Suspend button: (4) has two functions. When it serves as the standby button, pressing the button toggles between standby and normal modes. When it functions as the suspend button, pressing the button causes the system to enter suspend mode. See Section 2.4 for details on standby and suspend modes.

Power Management Setup button: (5) enables you to access the Power Management and Display Control page of the SETUP utility. The system does not reboot when you exit SETUP.

Status Indicators and Symbols

Power indicator: (A) lights when the system receives power. It also acts as a battery-low indicator. See Section 2.6 for information on battery-low condition.

Standby mode indicator: (B) flashes when the system is in standby mode.

Speed indicator: (C) lights when the system runs at top speed.

Diskette drive activity indicator: (D) lights when the system accesses the diskette drive.

Hard disk drive activity indicator: (E) lights when the system accesses the hard disk drive.

Num Lock indicator: (F) lights when the Number Lock function is activated.

Caps Lock indicator: (G) lights when the Caps Lock function is activated.

Scroll Lock indicator: (H) lights when the Scroll Lock function is activated.

1.7 The Keyboard

The keyboard has 85 or 86 full-sized keys including an embedded keypad and twelve function keys.

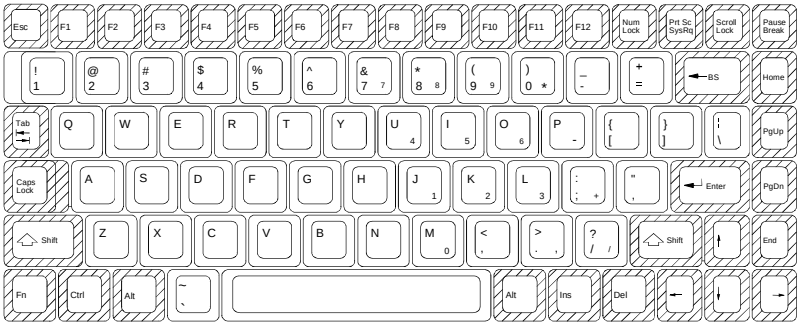

Figure 1-9 85-Key Keyboard (US version)

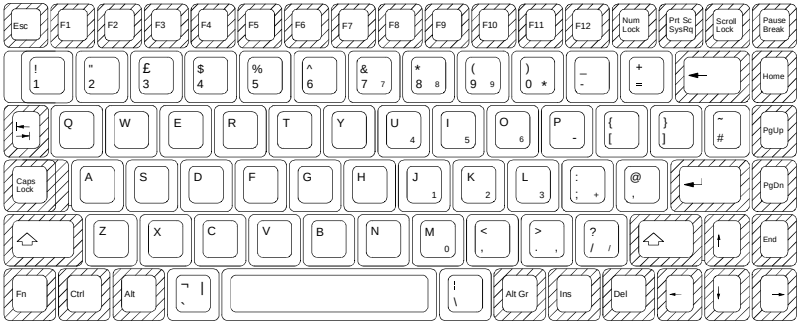

Figure 1-10 86-Key Keyboard (UK version)

There are three lock keys which you can toggle on and off. When you activate a lock key, the corresponding indicator lights.

Caps Lock When the Caps Lock indicator is on, all alphabetic characters typed are in uppercase.

Scroll Lock When the Scroll Lock indicator is on, the screen moves one line up or down when you press the up- or down-arrow key respectively. This lock key does not work with some applications.

Num Lock When the Num Lock indicator is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with arithmetic operators +, -, *, and /).

The embedded keypad, which has functions similar to a desktop numeric keypad, is indicated by small characters located in the lower right corner of the keycaps.

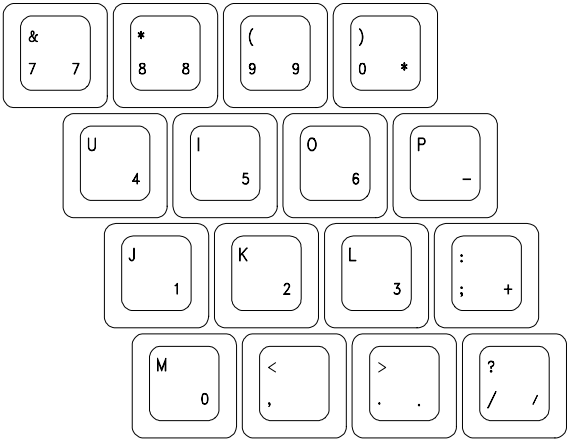

Figure 1-11 Embedded Keypad

Table 1-1 describes how to use the embedded keypad.

Action	Num Lock Indicator On	Num Lock Indicator Off
To access the number keys on the embedded keypad	Type the numbers in a normal manner.	
To access the cursor-control keys on the embedded keypad	Press the Shift key while using the cursor-control keys.	Press the Fn key while using the cursor-control keys.
To access the main keyboard keys	Press the Fn key while typing letters on the embedded keypad.	Type the letters in a normal manner.

Table 1-1 Using the Embedded Keypad

Important Key Combinations

Ctrl+Alt+Del Performs a ´warm start´, i.e. a restart while the system is on (e.g. after you have completed an application software installation). On the other hand, if you restart the system using the power ON/OFF button, this is called a ´cold start´.

Ctrl+Alt+Esc Starts the SETUP utility which is integrated in the system ROM, and is used to set up system parameters (see chap. 4, SETUP).

Ctrl+Alt+F5 Use this key combination to toggle between high and low CPU speed (see section 4.3, Standard System Parameters).

1.8 Rear Panel

The rear panel consists of the connectors for peripherals as shown in Figure 1-12. Open the port cover to access these connectors.

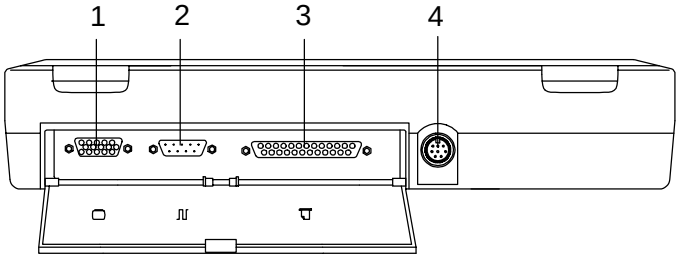

Figure 1-12 Rear Panel

1. **External VGA port** for connecting a VGA color monitor.
2. **Serial port** for connecting a mouse, modem, scanner, or other serial devices.
3. **Parallel port** for connecting a printer, pocket LAN, or other parallel devices.
4. **AC adapter** connector (see also Figure 1-3).

1.9 Right Side Panel

The SCENIC 4N notebook has a PCMCIA slot on its right side. This slot allows for using one type III PC Card or two type I/II PC Cards.

Figure 1-13 shows the right side panel of the system.

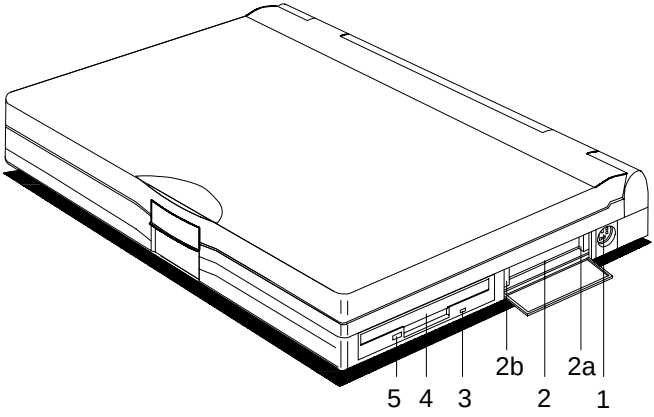

Figure 1-13 Right Side Panel with PCMCIA Type III Slot

1. **External Keyboard/Keypad/Mouse connector**
2. **PCMCIA type III slot (2 x type I/II or 1 x type III)**

2a. **Eject button for lower PCMCIA slot (⏏)**

2b. **Eject button for upper PCMCIA slot (⏏)**

3. **Diskette drive activity indicator**
4. **3.5-inch diskette drive**
5. **Diskette eject button**

1.10 Using the Notebook the First Time

The SCENIC 4N is supplied with pre-installed operating system software in several languages (multilingual). If you are using the notebook for the first time, follow the steps below to set up your system environment properly, and to ensure top performance, right from the start.

1. Please keep the notebook switched off. Connect the AC adapter to the notebook. Plug one end of the power cord into the AC adapter and the other end into a properly grounded power outlet. This charges the battery pack and will last about 2 hours.

2. When the battery-charging indicator is off, keep the notebook connected with the AC adapter, then switch the system on. Adjust the LCD brightness and contrast to obtain the best display result. See Figure 1-6 or 1-7.

3. The startup program for setting up the language of your system software will automatically be loaded from the hard disk. Please select one language from the menu and carefully follow the instructions on the screen.

   NOTE: *If you wish to set up a language that is NOT offered in the language selection menu, you will have to format hard disk C:, and then install the system software from diskettes. These diskettes must especially be ordered, and you will find them in the additional country-specific pack. For installation instructions, refer to the user manuals supplied with the pack.*

4. If the system displays an error message when restarted after installation, see section 6.2 for corrective actions.

5. Switch the notebook off and disconnect the AC adapter. Then switch the notebook on again and carry out a deep discharge followed by a full charge (so-called ´formation´) as described in section 2.6.

6. To conserve battery power, you can make use of the different power-saving modes described in section 2.8.

7. Read through this manual so that you can get the most out of this powerful notebook PC!

IMPORTANT: *We highly recommend you to create a **system diskette** (e.g. by using the SNI startup program under Windows) so that you can load the operating system from a bootable diskette if the system will not boot from the hard disk. For example, such a situation might occur when the system tries to load an incorrectly configured driver.*

*Make a **backup copy** of the diskette(s) that come(s) with the system (e.g. by using the MS-DOS utility DISKCOPY). Always store the original diskette(s) at a safe place and use the backup copies. See the MS-DOS user's manual on how to copy diskettes.*

NOTE: *For use of the ´**suspend to disk**´ function[1], a 13 MB partition is already reserved on the hard disk. The partition has sufficient space for holding the contents of the largest possible memory extension (i.e. 12 MB; see section 3.1). For detailed information on the partition characteristics, use the PHDISK.EXE utility located in the PHDISK subdirectory.*

1 For details, refer to the file README.DOC in the PHDISK subdirectory on the hard disk (or on the ´SCENIC 4N System Utilities´ diskette).

Chapter 2

Operating on Battery Power

This chapter contains information you need to know when operating the notebook on battery power. Information on how to maintain the battery pack is also provided.

2.1 The Battery Pack

The (fully-charged) battery will come in handy when you travel or during power failure. It is advisable to have an extra fully-charged battery pack available for backup (for this purpose, an external battery-charging holder can be ordered). The battery pack is located at the base of the unit. Before removing the battery pack, make sure that you power off the notebook and close the LCD display properly. Place the unit in an upside down position and unlock the two latches to release the battery pack as shown in Figure 2-1.

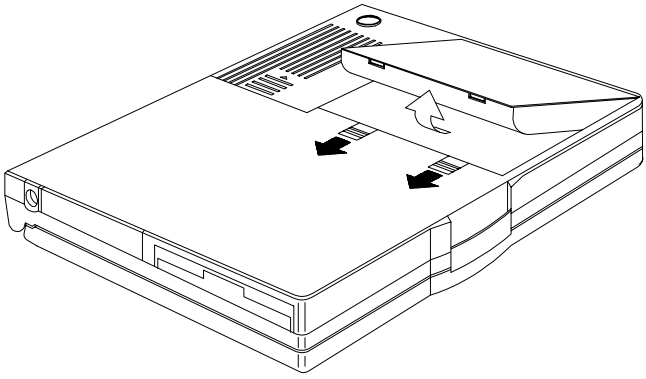

Figure 2-1 Removing the Battery Pack

Currently, there is no defined standard for measuring battery life and duty cycles. Several factors have made it almost impossible to compare different notebook's battery life based on the manufacturer´s data sheets or specifications alone. These factors include different implementations of power saving and power management features, both for the system hardware and the software.

Moreover, factors such as

— type of applications running
— user's "usage pattern or profile"
— hard disk size and access frequency (activate cache memory!)
— RAM and cache memory size
— LCD brightness, backlit

play a distinct role in power consumption and are also responsible for reducing battery life.

NOTE: *When the system will not be used for a long time, we suggest that you remove the battery pack. The battery power depletes in roughly ten days when the system remains in suspend mode with the power switch turned on. When the power switch is off, battery power depletes in one month.*

2.2 Charging the Battery

To charge the battery, the system should be powered off. Place the battery pack inside the battery compartment and plug the AC adapter into the notebook and an electrical wall outlet.

There are two charging modes:

- Rapid charging (only with the system switched OFF)
- Trickle charging (system is ON or battery is fully-charged)

Initially, the system uses rapid charging. In rapid charge mode, a fully depleted battery gets fully charged in approximately 1.5 to 2.0 hours. The battery charging indicator on the AC adapter lights up during the rapid charge mode.

When the battery is already charged at maximum level, trickle charging is used to maintain the battery charge at current level. The battery charging indicator on the AC adapter is off during trickle charge mode.

NOTE: *In the course of time, chemical changes inside the battery can reduce capacity which will result in a shorter runtime. To restore the full runtime of the notebook, you should form up (i.e. deeply discharge, and then fully recharge) the battery. For details, see Section 2.6.*

2.3 Conserving Battery Power

Here are some suggestions for conserving battery power:

- Reduce LCD brightness to a minimum but comfortable level.
- Use the AC adapter whenever possible so that the battery is reserved for on-the-go computing.
- Disable the parallel and serial ports if no devices are connected to these ports. You can do this through SETUP.
- Remove unused PC Cards from the PCMCIA slot.
- Enable quick boot through SETUP. Refer to Section 4.3.7.
- Make use of the power-saving modes described in Section 2.8. Timers can be set through SETUP.
- Keep the battery terminals clean. Use a dry cloth to wipe the positive and negative terminals of a battery once a month.

2.4 Battery-Low Warning

If you operate the notebook on battery power, pay extra attention to the battery-low indicator.

The power indicator on the control panel also acts as the battery-low indicator. It starts blinking when battery power is low.

The following signals indicate a battery-low condition:

- The buzzer generates four continuous beeps every minute, if you enabled the `Battery Low Warning Beep` parameter in SETUP.
- The battery-low indicator flashes until battery power is depleted

When you receive the battery-low warning, you have about five minutes[1] to save your files. If you do not connect the AC adapter within five minutes, the system will enter suspend mode if the `Standby/Suspend Upon Battery-low` parameter in SETUP is enabled and the following conditions exist:

- There is enough battery power left for saving system information onto the hard disk
- The reserved disk space for saving these data is larger than the combined system and video memory size

If these two conditions are not satisfied, the system enters standby mode. When this occurs, connect the AC adapter or press the standby button to wake up the system from standby mode and save all files. Otherwise, the entire system halts in about 10 minutes when battery power becomes totally depleted, and information not saved is lost.

1 If the battery is not fully charged when you start using it, you may have even less time.

Table 2-1 lists the recommended course of action for battery-low condition.

Condition	Recommended Action
The AC adapter and power outlet are available	1. Connect the AC adapter to the system. 2. Save all necessary files. 3. Resume work. 4. You may turn off the system to recharge the battery rapidly.
If you have an extra fully charged battery	1. Save all necessary files. 2. Exit the application. 3. Turn off the system. 4. Replace the battery pack. 5. Turn on the system and resume work.
If the AC adapter and power outlet or an extra battery are not available	1. Save all necessary files. 2. Exit the application. 3. Turn off the system.

Table 2-1 Course of Action for Battery-Low Condition

2.5 Battery Life Cycle

The batteries can normally be recharged about 500 times (i.e. 500 discharge/recharge cycles) when used as directed. Excess recharging decreases the life of batteries.

To ensure the typical life cycle of your battery pack, follow these instructions:

- Recharge the battery only when it is fully depleted.
- Form up (i.e. deep discharge and then full recharge) the battery once a month. See Section 2.6.

2.6 Forming Up the Battery

To (monthly) form up the battery, i.e. deep discharge and then full recharge, follow these steps:

1. Turn on the system without connecting the AC adapter.
2. Press the Power Management Setup button to enter SETUP. Deactivate the power-saving features by setting `Power Saving Mode` **and** `Standby/Suspend Upon Battery-low` (in page 3 of the SETUP utility) to `[Disabled]`. Exit SETUP.
3. Leave the system on until battery power is completely depleted (the system shuts off). Running a CPU- or disk I/O-intensive job will hasten the depletion process.
4. Power off the system.
5. Connect the AC adapter to recharge the battery pack. Charge it for about 2 hours.

Forming up the battery is also advised in these cases:

— when you get started with the notebook for the first time (see 1.10)
— after the system has not been used for a long time (self-discharging!)
— if the system runtime is essentially reduced during battery operation
— if the battery extremely and unconsistently heats up when charged

NOTE: *If after formup, even if repeated, the normal system runtime will not be re-established, you must replace the battery by a new one. Follow the local instructions for environmental protection when you dispose of the old battery.*

2.7 Replacing the Battery Pack

Replace the battery pack after turning off the system and unplugging the AC adapter. See Figure 2-1 for the battery location.

WARNING! *Do not expose battery packs to temperature below 0 ^{o}C (32 ^{o}F) or above 50 ^{o}C (122 ^{o}F). This may adversely affect the battery pack.*

2.8 Power Management

This notebook has a built-in power management control unit that monitors system activity. System activity refers to any activity involving one or more of the following devices: keyboard, mouse, diskette drive, hard disk drive, peripherals connected to the serial and parallel ports, and video memory. If no activity is detected for a specified period of time (called an inactivity time-out), the system switches to one of the power-saving modes to conserve energy. These power-saving modes are LCD standby mode, hard disk standby mode, CPU doze mode, system standby mode, and system suspend mode.

NOTE: *The SETUP utility allows you to activate or deactivate the power-saving features and to specify the inactivity time-out if the power-saving features are activated.*

2.8.1 LCD Standby Mode

Screen activity is determined by the keyboard, external PS/2 mouse, and built-in trackball. If these devices are idle within the period specified by the `Screen Save Timer` in SETUP, the LCD backlight shuts off until you press a key or move the PS/2 mouse or trackball. This timer works only if the LCD is the sole display device.

2.8.2 Hard Disk Standby Mode

The hard disk drive enters the standby mode when there are no disk read/write operations within a period of time specified by the `Hard Disk Standby Timer` in SETUP. In the standby state, the power supplied to the hard disk drive is reduced to minimum. The hard disk drive returns to normal mode once the system accesses it.

2.8.3 CPU Doze Mode

The CPU enters doze mode when there is no system activity for a period specified by the `CPU Doze Mode Timer` in SETUP. In this mode, the system lowers the CPU speed to 8 MHz.

When an activity is detected later, the CPU returns to its original speed. To activate doze mode, set the `Power Saving Mode` parameter in SETUP to `[Enabled]` and specify a value for the CPU doze mode timer.

2.8.4 System Standby Mode

The system consumes very low power in standby mode. Data remain intact in memory.

There are three ways to enter standby mode:

- Pressing the standby/suspend button (this button functions as the standby button if the reserved space[1] for saving system information on the hard disk is smaller than the combined system and video memory size)
- Setting a value for the `System Standby Timer` in SETUP. If the waiting time specified by this timer elapses without any system activity.
- During battery-low condition, if:
  - — the `Standby/Suspend Upon Battery-low` parameter in SETUP is enabled
  - — the reserved disk space for saving the system data is smaller than the combined system and video memory size, and the system cannot enter suspend mode.

  Refer also to section 2.4.

1 For details, refer to the file README.DOC in the PHDISK subdirectory on the hard disk (or on the ´SCENIC 4N System Utilities´ diskette, resp.).

The following signals indicate that the system is in standby mode:

- The buzzer beeps (when you press the standby button)
- The standby mode indicator flashes once per second

When the system enters standby mode, the following changes take place:

- The CPU reduces its speed
- The LCD switches off
- The system disables the serial and parallel ports
- The system reduces power supplied to the VGA and I/O controllers

There are three ways to leave standby mode and return to normal mode:

- Pressing the standby button
- Ringing of modem (if a PCMCIA modem card is installed and the `Modem Ring Wake Up` parameter in SETUP is enabled)
- Opening the LCD (if the LCD is the sole display device)

NOTE: *To activate the system standby mode, the parameters* `Power Saving Mode` *and/or* `Standby/Suspend Upon Battery-low` *must be set* `[Enabled]` *in SETUP.*

2.8.5 System Suspend Mode

During suspend mode, the system power shuts off. The system saves all system information onto the hard disk before it enters suspend mode. The system restores these information and resumes where you left off upon leaving suspend mode.

A necessary condition for the system to enter suspend mode is that the reserved space[1] for saving system information on the hard disk (suspend- to-disk area) must be larger than the combined system and video memory size. Under such condition, the standby/suspend button acts as the suspend button.

There are three ways to enter suspend mode:

- Pressing the standby/suspend button
- Setting a value for the system suspend timer in SETUP. If the waiting time specified by this timer elapses without any system activity, the system goes into suspend mode
- Signaling of a battery-low condition. The system enters suspend mode five minutes after a battery-low condition takes place if the `Standby/Suspend Upon Battery-low` parameter in SETUP is enabled.

When the system enters suspend mode, the following changes take place:

- The system information is stored in the suspend-to-disk partition on the hard disk
- The system shuts off (only the power management controller consumes a small amount of energy)

To exit (resume from) suspend mode, just press the standby/suspend button. After the system has restored all data from the suspend-to-disk partition, you can resume your work where you left off.

NOTES: *When the system is connected with peripherals or PCMCIA cards (e.g. network cards), these devices possibly will not function anymore after resuming system.*

1 For details, refer to the file README.DOC in the PHDISK subdirectory on the hard disk (or on the ´SCENIC 4N System Utilities´ diskette, resp.).

To activate the system suspend mode, the parameters `Power Saving Mode` *and/or* `Standby/Suspend Upon Battery-low` *must be set* `[Enabled]` *in SETUP.*

2.9 Advanced Power Management (APM)

This notebook supports the APM standard designed to further reduce system power consumption. APM is a power management approach defined jointly by Microsoft and Intel. An increasing number of software supports APM to take advantage of power saving features and provide greater system availability without degrading performance.

To use the APM feature under the Windows environment, run the Windows Setup and select `MS-DOS System with APM` as your computer type in the System Information menu. Refer to the Windows user's guide for more information.

You can use the APM feature under the DOS environment by including the POWER.EXE command in the CONFIG.SYS file. See the MS-DOS manual for instructions on how to edit the CONFIG.SYS file. For more information about APM, type `HELP POWER.EXE` at the DOS prompt.

NOTE: *If you enable the* `Power Saving Mode` *in SETUP without installing the APM under DOS or Windows, the system time and date will not display correctly. To update the time and date, reboot the system. We suggest installing the APM at first to avoid the above-mentioned error.*

Chapter 3

Hardware Options

This chapter describes how to install hardware options. These options are additional memory, PCMCIA cards[1], and external devices such as keyboard, VGA monitor, mouse, and printer.

Before you install optional devices for operation with your notebook, please read the manual included with the accessories. Take also notice of the following:

IMPORTANT: *Always power off the system before you install external devices. Also, if devices such as printer and monitor use separate power source, power on the devices first before powering on the system.*

NOTE: *For use of the suspend-to-disk function, a 13 MB hard disk partition is already pre-installed. This partition has sufficient space to hold the maximum memory capacity (12 MB) so that you will not have to reorganize the hard disk.*

1 PCMCIA cards may also be changed while the system is on (´Hot Insertion / Removal´).

3.1 Additional Memory

The system has 4 MB of onboard memory expandable to 8 or 12 MB by installing a RAM module.

Table 3-1 lists the possible memory configurations. Other configurations will not work.

Onboard	RAM Module	Total
4 MB	—	4 MB
4 MB	4 MB	8 MB
4 MB	8 MB	12 MB

Table 3-1 Memory Configurations

Should you decide to add more memory, we recommend that you seek the help of a qualified service technician. Improper installation may adversely affect your notebook and cause malfunction. Consult your authorized dealer if you have any questions.

If you nevertheless want to install the RAM module by yourself, pay particular attention to the following note on electro-static discharge (ESD):

IMPORTANT: *You must always discharge yourself (e.g. by touching a grounded object)* ***before*** *you*

– open the notebook chassis
– touch or grip the ESD-sensitive module.

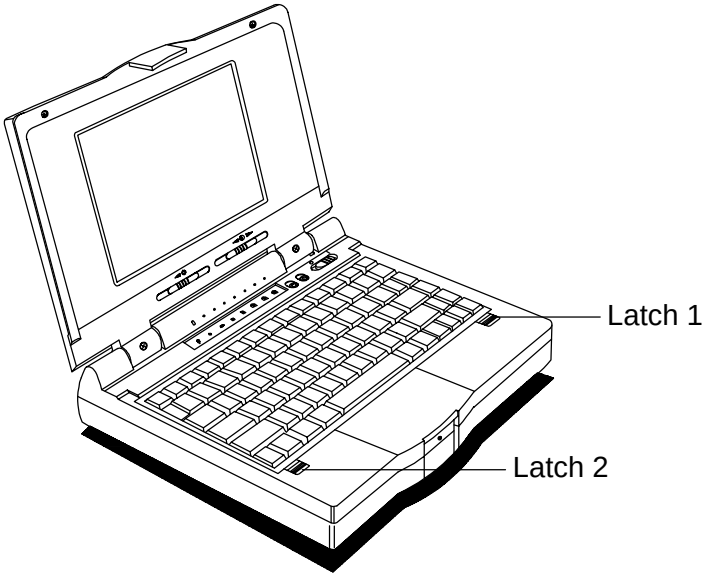

Figure 3-1 Latches for Opening the Chassis

How to install a memory extension:

1. Switch off the system, disconnect the AC adapter and all external devices. Open the display and then unlock the two latches (see Figure 3-1) to release the keyboard.

2. Fold open the keyboard. You will now have free access to the interior of the notebook.

3. Insert the RAM module carefully into the memory extension socket which is placed in the middle of the cabinet.

4. Close the keyboard. Make sure that the latches snap in to lock the keyboard.

The memory extension will automatically be recognized during the next system start. You can check the new memory setting in SETUP (see section 4.3).

3.2 External Keyboard

This notebook has an 85-/86-key keyboard with an embedded keypad. If you feel more comfortable using a desktop keyboard, you may install a 101-/102-key, PS/2-style external keyboard.

Power off the system before you plug the external keyboard or keypad into the keyboard connector on the right side panel. See Figure 3-2.

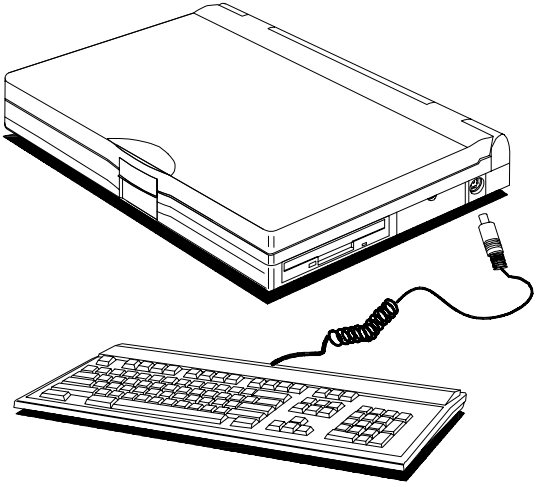

Figure 3-2 Connecting an External Keyboard

3.3 External Monitor

To have a larger display, you may connect an external VGA monitor to the VGA port on the rear panel (Figure 3-3). Read the monitor manual for additional instructions.

NOTE: *Before you install the monitor, turn off the system. Always turn on the external monitor first before you turn on the system.*

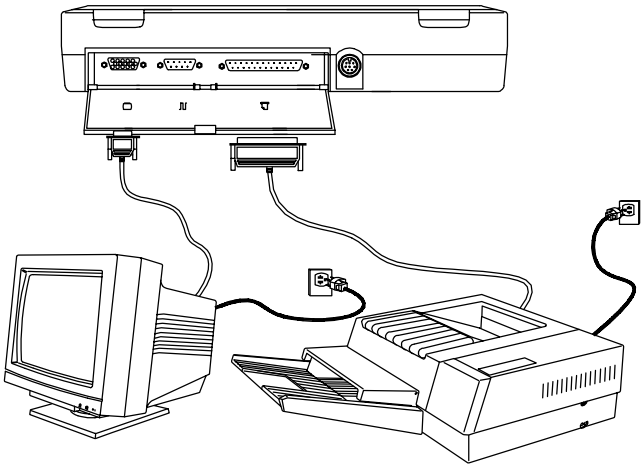

Figure 3-3 Connecting a Monitor and a Parallel Printer

An external VGA monitor connected to the notebook automatically displays at 640 x 480 resolution. To display higher resolutions, see the README.DOC file in the directory VGA on the hard disk (or on the ´SCENIC 4N System Utilities´ diskette, resp.) for instructions on installing the required software driver.

3.4 Printer

This notebook supports both parallel and serial printers. For a parallel printer, plug the printer cable into the parallel port (Figure 3-3). For a serial printer, plug the printer cable into a serial port.

NOTE: *Turn on the printer first before you turn on the system. See your printer manual for operating instructions.*

3.5 Mouse

This notebook accepts either a serial mouse or PS/2-compatible mouse. Installing a PS/2 mouse automatically disables the built-in trackball.

If you use a serial mouse, plug it into the serial port on the rear panel (Figure 1-12). If you use a PS/2-compatible mouse, plug it into the keyboard/mouse connector on the right side panel (Figure 1-13).

NOTES: *After installing the mouse, turn on the system. Run a mouse driver to activate the mouse. Read the mouse manual for more information.*

If you use a serial mouse, you must redirect the mouse driver to the serial COM1 port (e.g. by entering `MOUSE /C1`*). Otherwise the built-in trackball will be active.*

3.6 PCMCIA Type III Slot

The SCENIC 4N is equipped with a PCMCIA type III slot. It enables you to use credit-card-sized PC cards which have the same functions as add-on cards for desktop PCs, thus enhancing the usability and expandability of the notebook PC. In this slot, you can insert one type III or two type II or I cards.

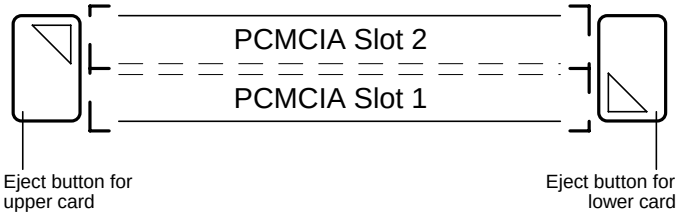

Figure 3-4 PCMCIA Type III Slot

PCMCIA I/O cards include data modem, fax/modem, LAN, SCSI card, and ATA drive. Memory cards include flash memory and SRAM.

Before using the card, you have to specify the corresponding PCMCIA driver software in the CONFIG.SYS. The driver initializes the card and the adapter. For details, refer to the information files on the PCMCIA support diskette that is supplied with the system. Use the utility INSTALL.EXE to set up your PC card driver software.

NOTE: *Updates of the PCMCIA support diskette can be ordered from the following address (information on how to order: Phone +49-821-804-2669):*

Siemens Nixdorf
Update Service, PC F34
Bgm.-Ulrich-Str. 100
D-86199 Augsburg

3.7 Installing Keycaps

You can equip your notebook with different keycap sets for different languages. They include a layout that helps you to determine which keycaps to replace and how the keyboard should appear when you are finished.

- If included in the set, you can use a key replacement tool to remove the keycaps, otherwise you can use a screwdriver to carefully pry off the caps. Take care not to damage any neighboring keycaps during this process.

- After you have removed the keycap, press the replacement keycap onto the key element until it clicks into place.

Under wide keys, a wire clip is attached to the key´s parallel guide. Make sure that the wire clip is correctly positioned in its guide when you install the replacement keycap.

Chapter 4

SETUP

This chapter describes the SETUP utility which resides in the system ROM and allows you to configure the system.

4.1 When to Use SETUP

If you do not receive an `EQUIPMENT CONFIGURATION ERROR` message after you turn on the system, your system is already correctly configured and you need not run SETUP. Run SETUP if you want to do any of the following:

- Change the system date, time, and speed
- Enable or disable a serial or parallel port
- Enable or disable quick boot
- Change the system boot drive and display device
- Set the video display features
- Enable or disable the power-saving features
- Set, change, or remove a system password

NOTE: *The system configuration values reside in the battery-powered CMOS RAM. The CMOS backup battery used in this notebook is auto-rechargeable and needs no replacement.*

4.2 Entering SETUP

To enter SETUP, you can either press the Ctrl-Alt-Esc key combination or the power-management-SETUP button.

If you enter SETUP by pressing Ctrl-Alt-Esc, the system reboots when you leave SETUP after saving the configuration values. The system does not reboot when you abort SETUP without saving the configuration values.

Pressing the power-management-SETUP button allows you to access the Power Management and Display Control parameters and the system does not reboot when you exit SETUP.

The parameters in the SETUP utility are grouped into three categories:

- Standard system parameters
- Hardware feature control
- Power management and display control

4.3 SETUP Page 1: Standard System Parameters

Page one of SETUP contains the standard system parameters, shown below:

```
          Phoenix SETUP Utility (Version 1.00)     01
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                                                        Page 1 of 3
                ** Standard System Parameters **

System Time:        22:23:12          Password:               N/A
System Date:        Feb 23, 1993

Diskette Drive A:   3.5", 1.44 MB
Diskette Drive B:   Not Installed     Cyl  Hd  Pre  LZ  Sec  Size
Hard Disk 1:        Type 36           980  15    0   0   17   122
Hard Disk 2:        Not Installed

Base Memory:        640 KB
Extended Memory:    3456 KB           Quick Boot:
Disabled
Total Memory:       4096 KB           Boot Drive:             Auto
CPU Speed:          High              Boot-up Numlock Status: No
```

Esc Menu				↑ ↓ Field	←/→ Value	PgUp/Dn Page

Most of the SETUP parameters are self-explanatory. Use the up- or down-arrow key to move from one parameter to another. Use the spacebar, left- or right-arrow key to change parameter settings. Pressing PgDn displays the next screen and PgUp displays the previous screen.

When you press Esc from a SETUP screen, the following menu appears:

```
      **  Exiting SETUP  **

ESC  Continue with SETUP
F4   Save values, exit SETUP, and reboot
F5   Load default values for all pages
F6   Abort SETUP without saving values
```

Press Esc to continue running SETUP. Press F4 to save the configuration values, exit SETUP, and reboot the system. Press F5 to load the default values for all SETUP parameters. Press F6 to exit SETUP without changing the current configuration values.

4.3.1 System Time and Date

The system displays the current date in `MMM DD, YYYY` (month, day, year) format and the current time in `HH:MM:SS` (hours, minutes, seconds) format. The system uses a 24-hour clock; for example, 6:25:50 PM displays as 18:25:50.

4.3.2 Diskette Drive

The default setting for `Diskette Drive A` is `3.5", 1.44 MB`. Since the system supports only one diskette drive, `Diskette Drive B` is set to `Not Installed` and is not user-changeable.

4.3.3 Hard Disk Drive

Change the drive type only if you replace the hard disk with another one of a different type; in which case, refer to Appendix B for a list of hard disk drive types. To determine your drive type, compare the data on the label pasted on your hard disk (or supplied in vendor documentation) with the disk types found in Appendix B. Be sure to select the correct drive type; otherwise, an error message appears when you boot the system.

4.3.4 Memory Configuration

The system detects the amount of base, extended and total memory and then displays these values in the SETUP screen; thus, these parameters are for display only and you cannot change them manually.

When you run SETUP after installing additional memory, the system automatically sets these parameters to reflect the new memory size.

4.3.5 CPU Speed

The CPU runs at high speed or low speed. The speed indicator lights only when the CPU runs at high speed.

You can also use the key combination Ctrl-Alt-F5 to toggle between high and low speed.

4.3.6 Password

The system password prevents unauthorized access to the system. To set a password, press the up- or down-arrow key. The password box appears. Enter a password which may consist of up to seven characters. These characters do not appear on the screen when you type them. Press Enter after typing your password. Another prompt appears asking you to retype your password for verification.

After setting a password, the system sets this parameter to `[Enabled]`. When you boot the system, it prompts you to enter the password after the power-on self-test, before starting your operating system.

The system also automatically sets the `Password Checking During Resume` parameter to `[Enabled]`. When you exit suspend mode and return to normal mode, the system requires you to enter the password.

To change or remove the current password, the program will ask you to enter the password first. If your entry is incorrect, the current password remains unchanged. After entering the password correctly, you may type a new password or press the Esc key to remove the current password.

IMPORTANT: *If you forget a password, only a Siemens Nixdorf Service technician will be abe to erase the password; however there is a charge for this service. Therefore it is advisable to memorize the password or write it down and keep it in a safe place.*

4.3.7 Quick Boot

When you power on the system, it always performs a self-test on the system memory, CMOS RAM, keyboard and diskette drive, and checks the memory size and hard disk type. Select `[Enabled]` to bypass these tests in order to speed up the system self-test procedure.

4.3.8 Boot Drive

This parameter determines which drive the system boots from when you turn on the system. The following table lists the three possible settings.

Setting	Description
Auto	Default setting. System boots from diskette drive A. If no system diskette is present in drive A, the system boots from the PCMCIA SRAM card, then hard disk drive C.
A:	System boots from diskette drive A. If no system diskette is present in drive A, the system boots from the PCMCIA SRAM card. Otherwise, an error message appears.
C:	System boots from the hard disk drive C. If the hard disk is a non-system disk, an error message appears.

Table 4-1 System Boot Drive Parameter Settings

NOTE: *Booting the system from an SRAM card is only possible if the card is inserted in PCMCIA slot 1.*

4.3.9 Boot-up NumLock Status

When the `Boot-up NumLock Status` setting is `[Yes]`, the embedded keypad acts as a numeric keypad. The default setting is `[No]`.

4.4 SETUP Page 2: Hardware Feature Control

Page two of SETUP consists of the hardware feature control parameters.

```
          Phoenix SETUP Utility (Version 1.00)     01
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                                                      Page 2 of 3
                  ** Hardware Feature Control **

Serial Port:          COM1 (3F8h)

Parallel Port:        Parallel 1 (3BCh)

Battery Type:         NiMH
```

Esc Menu				↑ ↓ Field	←/→ Value	PgUp/Dn Page

4.4.1 Serial Ports

The serial port can accommodate a serial mouse, serial printer or other serial devices. The options for setting these ports are:

- COM1 (3F8h)
- COM2 (2F8h)
- Disabled

The value in parenthesis is the base address expressed in hexadecimal notation. The serial port address must be different from the modem port address. If not in use, disable these ports to save power.

4.4.2 Parallel Port

The default setting of `Parallel 1 (3BCh)` refers to LPT1. The other options are:

- `Parallel 2 (378h)` for LPT2
- `Parallel 3 (278h)` for LPT3
- `Disabled`

If not in use, disable the parallel port to save power.

4.4.3 Battery Type

Sets the type of battery installed in the system. This parameter is set to `NiMH` and is not user-changeable.

4.5 SETUP Page 3: Power Management and Display Control

Page three of SETUP contains the power management and display control parameters. The SETUP screen for the monochrome model is as follows:

```
          Phoenix SETUP Utility (Version 1.00)     01
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                                                          Page 3 of 3
              ** Power Management and Display Control **

Power Saving Mode:       Enabled         Display:               Auto
CPU Doze Mode Timer:     1 Second(s)     LCD Expanded Mode:
System Standby Timer:    5 Minute(s)         Text:              Enabled
System Suspend Timer:    Disabled            Graphics:          Enabled
Hard Disk Standby Timer: 2 Minute(s)     Contrast Enhancement: Disabled
Screen Save Timer:       1 Minute(s)     LCD Text:              Normal
Modem Ring Wake Up:      Enabled         LCD Graphics:          Normal


Battery-low Warning Beeps:          Enabled
Standby/Suspend upon Battery-low:   Enabled

Password Checking During Resume:    Disabled

| Esc Menu |  |  |  | ↑ ↓ Field | ←/→ Value | PgUp/Dn Page |
```

The SETUP screen for the color model is as follows:

```
          Phoenix SETUP Utility (Version 1.00)     01
  (c) Phoenix Technologies Ltd. 1985, 1993   All Rights Reserved

                                                          Page 3 of 3
                ** Power Management and Display Control **

Power Saving Mode:        Enabled           Display:             Auto
CPU Doze Mode Timer:      1 Second(s)       LCD Expanded Mode:
System Standby Timer:     5 Minute(s)          Text:             Enabled
System Suspend Timer:     Disabled             Graphics:         Enabled
Hard Disk Standby Timer:  2 Minute(s)
Screen Save Timer:        1 Minute(s)
Modem Ring Wake Up:       Enabled


Battery-low Warning Beeps:          Enabled
Standby/Suspend upon Battery-low:   Enabled

Password Checking During Resume:    Disabled

| Esc Menu | | | | ↑ ↓ Field | ←/→ Value | PgUp/Dn Page |
```

When you access page 3 of SETUP by pressing the no-reboot Setup button, the following menu appears when you press Esc.

```
      **  Exiting SETUP  **

ESC   Continue with SETUP
F4    Exit SETUP with saving values
F6    Abort SETUP without saving values
```

Select the option that you want to perform. Upon leaving SETUP, the system returns directly to the program that was running before you entered SETUP.

4.5.1 Power Saving Mode

If this parameter is set to `[Enabled]`, all of the power-saving features take effect unless specifically disabled by the user. Select `[Disabled]` to turn off the power-saving features. In this case, the system ignores the power-saving parameter settings.

NOTE: *If APM is installed under the DOS or Windows environment, you cannot disable the* `Power Saving Mode` *under SETUP. To disable APM, type* `Power Off` *under DOS, or disable the Power icon in the Windows Control Panel.*

4.5.2 CPU Doze Mode Timer

This parameter enables you to set a timeout period for the CPU to enter doze mode in the absence of any activity from the keyboard, mouse, serial ports, parallel port, video memory, and disk drives.

The valid values for this timer are `1` to `8` seconds. Select `[Disabled]` to turn off the timer.

4.5.3 System Standby Timer

The absence of any system activity within the period of time specified by this timer causes the system to enter standby mode. The system returns to normal mode when you press the standby button or when the modem rings (if a PCMCIA modem card is installed and the `Modem Ring Wake Up` parameter is enabled).

The valid values for this timer range from `1` to `15` minutes. Select `[Disabled]` to turn off the timer.

4.5.4 System Suspend Timer

If no system activity occurs within the period of time specified by the suspend timer and the reserved disk space for the suspend-resume function is larger than the combined system and video memory size, the system goes into suspend mode. If the standby timer is activated, the suspend timer starts the countdown immediately after the system enters the standby state.

The valid values for this timer range from `1` to `15` minutes. Select `[Disabled]` to turn off the timer.

4.5.5 Hard Disk Standby Timer

The hard disk drive enters the standby mode if there are no disk read/write operations within the period specified by this timer. The hard disk returns to normal mode once the system accesses it.

The valid values for this timer range from `1` to `18` minutes. Select `[Disabled]` to turn off the timer.

4.5.6 Screen Save Timer

The system shuts off the LCD if there is no activity from the keyboard, external PS/2 mouse, or built-in trackball within the period specified by this timer. To turn the display back on, press a key or move the PS/2 mouse or trackball.

The valid values for this timer range from `1` to `15` minutes. Select `[Disabled]` to turn off the timer.

4.5.7 Modem Ring Wake Up

If this parameter is set to `[Enabled]`, the system wakes up from standby mode and returns to normal mode when the modem detects a ringing tone.

4.5.8 Battery-Low Warning Beeps

This parameter allows you to enable or disable the warning beeps generated by the system when a battery-low condition occurs. The default setting is `[Enabled]`. Refer to section 2.4 for information on battery-low condition.

4.5.9 Standby/Suspend Upon Battery-Low

This parameter enables the system to enter standby or suspend mode when a battery-low condition takes place. The default setting is `[Enabled]`. Refer to Section 2.4 for information on battery-low condition.

4.5.10 Password Checking During Resume

This parameter allows you to prevent unauthorized resuming from the suspend mode to normal mode. After setting a password (see section 4.3.6), the system automatically sets this parameter to `[Enabled]`. When you exit suspend mode and return to normal mode, the system requires you to enter the password.

4.5.11 Boot Display

The boot display is the device on which the operating system prompt appears when you boot the system.

Table 4-2 describes the different parameter settings.

Setting	Description
Auto (default)	If an external monitor is present, the system uses the external monitor; otherwise, the system selects the LCD display.
LCD	The system selects the LCD display even if an external monitor is present.
Both	The system selects both the LCD and the external monitor simultaneously. This option works only on a monochrome LCD.

Table 4-2 Boot Display Parameter Settings

4.5.12 LCD Expanded Mode

If the LCD Expanded Mode is enabled, the VGA subsystem paints in a few extra lines so that a display output with less than 640 x 480 resolution can fill up the entire LCD screen. The expanded mode gives a better and more balanced display.

NOTES: *Expanded display mode may not work in some applications, in which case, set it to* `[Disabled]`.

When the expanded mode is disabled, the screen slides slowly from top to middle.

When selecting text 43 lines and text 50 lines in DOSSHELL, the expanded mode of the screen is disabled.

4.5.13 Contrast Enhancement

Set this parameter to `[Enabled]` to obtain sharp contrast on the LCD. This is achieved by reducing the number of gray shades displayed.

Having this parameter enabled may not be appropriate for some applications due to the reduced gray shades used. For example, a highlighted bar may have the same gray shade as the information it highlights.

4.5.14 LCD Text

This parameter determines whether the text displayed on the monochrome LCD is in normal or reverse mode. Normal mode displays white characters on a black background and uses less power.

The parameter setting takes effect unless your application software overrides it.

4.5.15 LCD Graphics

This parameter determines whether graphics displayed on the monochrome LCD screen is in normal or reverse mode. Normal mode displays graphics on a black background and uses less power.

The parameter setting takes effect unless your application software overrides it.

Chapter 5

Maintaining the System

In this chapter you will find some important and useful information on how to handle and maintain your notebook PC.

5.1 Travelling with the System

Follow the steps below to prepare the system for travel:

1. Make diskette copies of important files on the hard disk.
2. Turn off the system and all peripherals.
3. Make sure the LCD display is properly closed. The latch on the front of the notebook must be secured.
4. Disconnect the AC adapter and all peripherals.
5. Place the system, AC adapter, and extra battery pack in a carrying bag.
6. Hand-carry the system. Do not check it in as luggage.
7. Check with your airline if you plan to use the system in-flight.
8. When travelling in another country, check that the local AC voltage and the AC adapter power cord specifications are compatible. If not, purchase a power cord that is compatible with the local AC voltage. Do not use converter kits sold for appliances to power the system.
9. When travelling in another country, and using a PC card modem and connector, your system may not be compatible with the telecom system.

5.2 Caring for the System

This section gives guidelines for caring for the system. Also, read the important safety instructions at the beginning of this manual.

5.2.1 System Hardware

- Do not expose to rain, liquid, or moisture.
- Do not place near sources of heat, such as a radiator.
- Do not expose to temperatures below 0 ºC (32 ºF) or above 50 ºC (122 ºF).
- Do not block the ventilation slots of the notebook chassis.
- Do not place objects on top of the system to avoid damaging the screen.

5.2.2 AC Adapter

- Do not connect to any other device.
- Connect the adapter power cord to a grounded power outlet only. Contact an electrician if it does not fit into your outlet.
- Do not set anything on the power cord. Carefully route the power cord and cables away from personnel traffic.
- The total ampere ratings of the equipment plugged in should not exceed the ampere rating of the cord if you are using an extension cord. Also, the total current rating of all equipment plugged into a single wall outlet should not exceed the fuse rating.

5.2.3 Battery Pack

- Use only batteries of the same kind as replacements. Turn the power off before removing or replacing batteries.
- Do not tamper with batteries. Keep them away from children.
- Dispose of used batteries according to local regulations.

5.2.4 Diskettes

- Always make backup copies of diskettes that contain important data or program files.
- Keep diskettes away from magnetic fields and sources of heat.
- Do not remove a diskette from a drive when the diskette drive activity light is on.
- Write-protect your diskettes to prevent inadvertent erasure. To do this, slide the write-protect tab to the write-protect position.

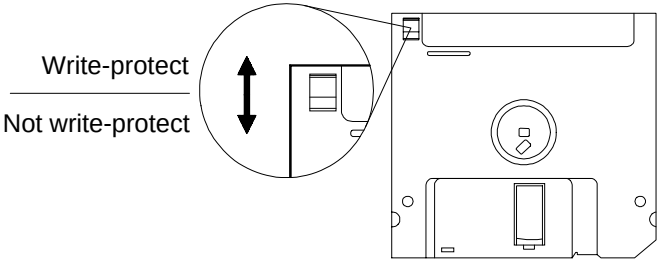

Figure 5-1 Write-Protecting a 3.5-inch Diskette

- When you put a label on a 3.5-inch diskette, make sure that the label is flatly attached and within the labelling area (area with slight surface depression) on the diskette. An improperly attached label may cause a diskette to get stuck in the drive when you are inserting or removing the diskette.

5.2.5 Cleaning and Servicing

- Follow the important safety instructions for cleaning and transporting the notebook. You will find these instructions at the beginning of this manual.

  Handle your notebook with care. Improper cleaning or wrong transport may cause serious damages to the product.

- Contact your dealer or see your service technician if any of the following occurs:

  — System has been dropped or the chassis has been damaged

  — Liquid has been spilled into the product

  — Unrecoverable system errors have occurred (see chapter 6)

Chapter 6

Troubleshooting

This chapter tells how to deal with common system problems. Read it before calling a technician when problems occur. Solutions to more serious problems require opening up the system. Do not attempt to open up the system by yourself. Contact your dealer for assistance.

6.1 A Checklist

If the system does not start or boot

- Are you running on battery power? It may be low and unable to power the system.
- Is the AC adapter plugged in properly?
- Is the operating system loaded on your disk?
- Is a non-bootable diskette in the diskette drive?
- Is a non-bootable SRAM card in the PCMCIA slot 1?
- Is the operating system diskette inserted correctly?
- Are the operating system files damaged or missing? Try booting from another system diskette.
- Check the hard disk type in SETUP.

If nothing appears on the screen

- Try adjusting the screen brightness and contrast controls.
- Is the LCD display power-saving feature on? Press any key to turn the display back on.
- Is the system in standby or suspend mode? See Section 2.8 for a discussion of visible and audible indicators and ways to exit these modes.

If the keyboard does not respond

- Is the system in standby mode (the standby mode indicator flashes)? Press the standby button to return to normal mode.
- Try attaching an external keyboard. If it works, contact your dealer as your keyboard cable may be loose.

If the serial mouse does not work

- Is the serial port enabled? Check the SETUP utility.
- Is the mouse driver activated?
- Is there a conflict between the serial ports selected if a PCMCIA modem card is installed?

If the parallel printer does not print

- Is the parallel port enabled? Check the SETUP utility.
- Is there a conflict between the parallel ports selected in SETUP and the software application?

If the serial printer does not print

- Is the serial port enabled? Check the SETUP utility.
- Is the printer connected to the port indicated in SETUP?

If the system hangs when turned on and you hear a long beep followed by three short beeps

- This indicates one or more of the tests failed during the power-on self-test routine. Contact your dealer.

If all the power management functions do not work

- Is the `Power Saving Mode` parameter enabled? Check this parameter in the SETUP utility.
- Are you running the SETUP utility (by pressing the Setup button)? Running SETUP temporarily disables the power management mode.

If pressing the Setup button or Standby/Suspend button does not produce the expected result

- Is there any system activity taking place? Wait until the system is not busy.

6.2 Error Messages

When you receive an error message, note the message and take corrective action. Table 6-1 lists the error messages in alphabetical order together with the recommended course of action.

Error Message	Corrective Action
BIOS ROM bad checksum = xxxx	Contact your dealer.
Decreasing available memory	Contact your dealer.
Diskette drive A failure	Contact your dealer.
Diskette read failure	Contact your dealer.
Gate A20 failure	Contact your dealer.
Hard disk 0 failure	Contact your dealer.
Hard disk configuration error	Contact your dealer.
Hard disk controller failure	Contact your dealer.
Hard disk read failure	Boot the system from drive A: and then make drive C: bootable. If the problem persists, contact your dealer.
Invalid configuration information - please run SETUP program	Run SETUP.
Keyboard controller failure	Contact your dealer.
Keyboard clock line failure	Contact your dealer.
Keyboard data line failure	Contact your dealer.
Keyboard failure	Contact your dealer.
Keyboard is locked - unlock	Contact your dealer.
Keyboard stuck key failure	Press the key(s) again. If the problem persists, contact your dealer.
Memory parity interrupt at : xxxx	Contact your dealer.

Table 6-1 Error Messages

Error Message	Corrective Action
Missing operating system	Correct HDD Type and reboot. (Refer to the specification label pasted on the back side of the notebook.)
No boot device available	Contact your dealer.
Not a boot diskette	Remove non-bootable diskette.
No boot sector on hard disk - press F1 to retry boot, F2 for SETUP utility	Contact your dealer.
No timer tick interrupt	Contact your dealer.
Pointer device failure	Contact your dealer.
Real time clock failure	Reboot the system. If the problem persists, contact your dealer.
ROM bad checksum = xxxx	Contact your dealer.
Shutdown failure	Contact your dealer.
System halted! Must power down	Reboot the system and enter the correct password. If you forgot the password, contact your dealer.
Time-of-day not set - run SETUP program	Run SETUP.
Timer 2 failure	Contact your dealer.
Type (S)hut off NMI, (R)eboot, other keys to continue	Contact your dealer.
Unexpected interrupt in protected mode	Contact your dealer.
Unexpected SW interrupt at: xxxx	Contact your dealer.
Unexpected type 02 at: xxxx	Contact your dealer.

Table 6-1 Error Messages (continued)

Appendix A

Technical Data

Component	Standard	Optional
Microprocessor	SL Enhanced i486 SX CPU / 33 MHz	
System board memory	4 MB	Expandable to 8/12 MB
System ROM	128 KB	
CMOS RAM	128 bytes, battery backup	
Data storage devices	One 2.5-inch, 120-MB hard disk drive One 3.5-inch, 1.44-MB diskette drive	
Video display – SCENIC 4N – SCENIC 4NC	9.5-inch, 640 x 480 TSTN LCD, VGA-compatible 9.5-inch, 640 x 480 DualScan STN LCD, VGA-compatible	Multi-frequeny VGA monitor with resolutions – 640 x 480, 256-color – 800 x 600, 256-color – 1024 x 768, 16-color
Keyboard	85-/86-key	101-/102-key, PS/2-compatible keyboard

I/O Ports	One 9-pin serial port One 25-pin parallel port One 15-pin external monitor connector One 6-pin PS/2 keyboard /mouse connector One PCMCIA type III slot (= 2 slots for type I or II)	Serial mouse or printer Parallel printer Up to 1024 x 768 VGA monitor PS/2 keyboard, PS/2 mouse, or trackball E.g. FAX/modem card S26361-F1066
Operating system	MS-DOS, Windows for Workgroups	
AC adapter	100-240 Vac, 47-63 Hz autosensing AC adapter with rapid charger	Extra AC adapter
Battery pack	NiMH, thermal protection; 2 hours recharge	– Extra battery pack – Battery charging holder
Weight – SCENIC 4N – SCENIC 4NC	 2.7 kgs (5.9 lbs) 2.9 kgs (6.4 lbs)	
Dimensions – SCENIC 4N – SCENIC 4NC	W x D x H 290 x 220 x 46 mm 290 x 220 x 51 mm	Carrying bag
Temperature – Operating – Non-operating	 10 ^{o}C to 35 ^{o}C -10 ^{o}C to 60 ^{o}C	
Audible noise	< 50 dBA	

Appendix B

Hard Disk Type Table

Type	Cylinders	Heads	Write Pre-comp.	Landing Zone	Sectors per track	Disk Capacity
1	306	4	128	305	17	10
2	615	4	300	615	17	20
3	615	6	300	615	17	30
4	940	8	512	940	17	62
5	940	6	512	940	17	46
6	615	4	-1	615	17	20
7	462	8	256	511	17	30
8	733	5	-1	733	17	30
9	900	15	-1	901	17	112
10	820	3	-1	820	17	20
11	855	5	-1	855	17	35
12	855	7	-1	855	17	49
13	306	8	128	319	17	20
14	733	7	-1	733	17	42
15	Reserved					
16	612	4	0	663	17	20
17	977	5	300	977	17	40
18	977	7	-1	977	17	56
19	1024	7	512	1023	17	59
20	733	5	300	732	17	30
21	733	7	300	732	17	42
22	733	5	300	733	17	30
23	306	4	0	336	17	10

24	Unused

Type	Cylinders	Heads	Write Pre-comp.	Landing Zone	Sectors per track	Disk Capacity
25	615	4	0	615	17	20
26	1024	4	-1	1023	17	34
27	1024	5	-1	1023	17	42
28	1024	8	-1	1023	17	68
29	512	8	256	512	17	34
30	615	2	615	615	17	10
31	989	5	0	989	17	41
32	1020	15	-1	1024	17	127
33	615	4	-1	615	26	31
34	723	11	0	0	63	244
35	731	13	0	0	26	120
36	980	15	0	0	17	122
37	1024	5	512	1024	26	65
38	823	10	256	824	17	68
39	981	10	0	981	17	81
40	762	8	0	762	39	116
41	917	15	-1	918	17	114
42	1023	15	-1	1024	17	127
43	823	10	512	823	17	68
44	820	6	-1	820	17	40
45	1024	5	-1	1023	17	42
46	925	9	-1	925	17	69
47	832	6	0	0	33	80
48	User-defined					
50	823	4	0	823	38	61
54	548	8	0	548	38	81
59	802	4	0	802	39	61
62	1010	12	0	0	55	325

81	1024	7	0	1023	17	59
91	985	13	0	985	32	200
95	966	5	0	0	34	80

The system supports the following 2.5-inch hard disk drives:

Vendor	Model	Capacity	Disk Type
Seagate	ST9096A ST9144AG ST9235AG	80 MB 120 MB 200 MB	39 36 91
Conner	CP2124	120 MB	40
Quantum	GO120AT GLS256AT	120 MB 250 MB	35 34
IBM	H2258-A3 H2344-A4	250 MB 340 MB	34 62
Maxtor	2585AT 25128AT	80 MB 120 MB	39 36

Use the space provided in the above table to record additional hard disks that will be available in the future.

Appendix C

Address and Interrupt Tables

C.1 System Memory Map

Address Range	Definition	Function
000000 to 09FFFF	640 KB memory	Base memory
0A0000 to 0BFFFF	128 KB video RAM	Reserved for graphics display buffer
0E0000 to 0EFFFF 0F0000 to 0FFFFF	128 KB system ROM	Video BIOS System BIOS
100000 to 3FFFFF (5FFFFF) (7FFFFF) (BFFFFF)	Extended memory 3 MB (5 MB) (7 MB) (11 MB)	Onboard memory of 4 MB (6 MB) (8 MB) (12 MB)
FE0000 to FFFFFF	128 KB system ROM	Duplicate of code assignment at 0E0000-0FFFFF

C.2 I/O Address Map

Address Range	Device
000 - 00F	DMA controller 1
020 - 021	Interrupt controller 1
040 - 043	Timer 1
048 - 04B	Timer 2
060 - 06E	Keyboard controller 8742 chip select
070 - 071	Real-time clock and NMI mask
080 - 08F	DMA page register
0A0 - 0A1	Interrupt controller 2
0C0 - 0DF	DMA controller 2
178, 17A	6357 registers
1F0 - 1F7,	Hard disk select
3F6, 3F7	
278 - 27F	Parallel port 3
2F8 - 2FF	Serial port 2
35F, 36F	Special I/O ports
378 - 37A	Parallel port 2
3BC - 3BE	Parallel port 1
3B4, 3B5, 3BA,	Video subsystem
3C0 - 3C5	
3C6 - 3C9	Video DAC (Digital Analog Converter))
3C0 - 3CF	Enhanced graphics display
3D0 - 3DF	Color graphics adapter
3E0 - 3E1	PCMCIA controller
3F0 - 3F7	Diskette drive controller
3F3	M5105 configuration port
3F8 - 3FF	Serial port 1

C.3 Interrupt Levels

Priority	Interrupt	Interrupt Source
1	SMI	Power management unit
2	NMI	Parity error detected, I/O channel error
3	IRQ 0	Interval timer, counter 0 output
4	IRQ 1	Keyboard
	IRQ 2	Interrupt from controller 2 (cascade)
5	IRQ 8	Real-time clock
6	IRQ 9	Cascaded to INT 0AH (IRQ 2)
7	IRQ 10	Reserved
8	IRQ 11	Reserved
9	IRQ 12	PS/2 mouse
10	IRQ 13	INT from coprocessor
11	IRQ 14	Hard disk controller
12	IRQ 15	Reserved
13	IRQ 3	Serial communication port 2
14	IRQ 4	Serial communication port 1
15	IRQ 5	Parallel port 2
16	IRQ 6	Diskette drive controller
17	IRQ 7	Parallel port 1

NOTE: *A PCMCIA card can use IRQ 3, 4, 5, 7, 9, and 11 as long as it does not conflict with the interrupt address of any other device.*

jC.4 DMA Channels

Controller	Channel	Address	Function
1	0	0087	Spare
1	1	0083	Spare
1	2	0081	Diskette
1	3	0082	e.g. LAN
2	4	Cascade	Cascade
2	5	008B	Spare
2	6	0089	Spare
2	7	008A	Spare