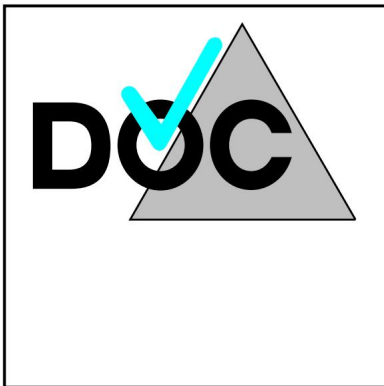


Operating instructions RM200 C models

(Reliant UNIX/SINIX)



July 1997 issue

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Important instructions

unpacking

Installing the system unit

Installing peripherals

software

Problems and solutions

Transporting the system unit

Operating drives

Handling data storage devices



Care

Technical data

Settings

Order accessories

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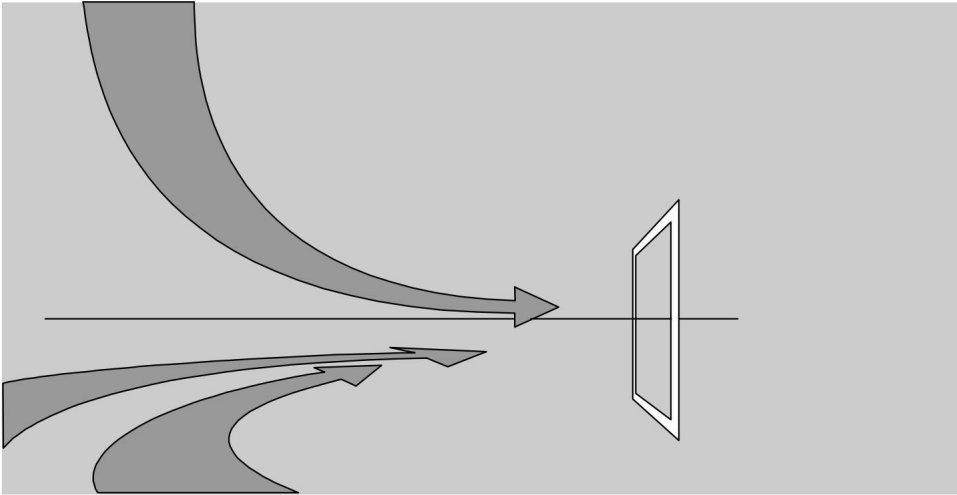
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1

Introduction



C models of the RM200 system

Target group of the operating instructions

Structure of the operating instructions

User-friendly user information - tested quality

Means of representation

1.1 C models of the RM200 system

The RM200 system is a compact desktop system using RISC technology based on the manufacturer MIPS. Based on the R4700 processors [®] and R5000 [®].

The RM200 is particularly suitable for use as a workstation, workgroup server, or multi-user system in an office environment. The RM200 represents the entry-level entry into the RM product line from Siemens Nixdorf.

The operating instructions describe the C models of the RM200 system (C20 and C40) with the Reliant UNIX operating systems [®] or SINIX [®] V5.42.

With release 5.43B00, the name of the RM systems' SINIX operating system was changed to Reliant UNIX. This was the result of the merger of the UNIX variants from Siemens Nixdorf Informationssysteme AG (SNI) and Pyramid Technology. The name "Reliant UNIX" represents the high standards of reliability and availability that our standardized, open operating system meets – in both commercial and technical applications. All proven SINIX features are retained in Reliant UNIX.

Numerous controllers for input/output devices and communication integration, as well as a range of drives, complement the system. The technical expansion options are constantly being expanded. For information on current expansion options, please contact your local Siemens Nixdorf Informationssysteme AG (SNI) representative.

This manual describes system preparation, including commissioning the Reliant UNIX and SINIX V5.42 operating systems. Further information on Reliant UNIX and SINIX V5.42 can be found in the SNI manuals.

You can install and configure application programs under Reliant UNIX or SINIX V5.42.

1.2 Target group of the operating instructions

This operating manual is intended for the person responsible for installing the hardware and ensuring proper operation of the system. The manual is designed to enable you to commission the RM200 system without any prior knowledge.

To understand the various connection options, knowledge of hardware and data transmission is required, as is basic knowledge of the Reliant UNIX or SINIX V5.42 operating system. Knowledge of English is also required.

Further information on installing and removing peripheral devices, components and assemblies can be found in the "RM200 C Series Technical Manual", which is also supplied with your system unit.

1.3 Structure of the operating instructions

It is essential that you read the "Important Information" chapter **before** working with the RM200 system. It contains information necessary for the safe installation and handling of the system unit.

You will find an overview of the scope of delivery of your system unit in the "Unpacking" chapter.

The chapters "Installing the system unit" and "Installing peripheral devices" provide information on how to set up the system unit, how to connect it to the monitor, keyboard and mouse and how to switch it on, how to connect the printer, modem and SCSI peripheral devices to the system unit and how to connect the system unit to the LAN and to the UPS (uninterruptible power supply) and how to put the peripheral devices into operation.

The "Software" chapter describes how to activate Reliant UNIX or SINIX V5.42 on your system.

The chapter "Problems and Solutions" provides a brief overview of how to identify minor problems and, if necessary, resolve them yourself.

The procedures you must follow when transporting your system unit to another location can be found in the chapter "Transporting the system unit".

The chapters "Operating Drives," "Handling Storage Devices," and "Maintenance" describe the various drives and storage devices and how to care for them. You'll learn which cleaning and maintenance tasks you need to perform and at what intervals.

The "Technical Data" chapter provides information about the components for the basic configuration of your system, the expansion options, and the technical data and dimensions of the system.

A brief description of the default settings for monitors and printers is included in the "Settings" chapter.

The items that you can order as accessories for your system, the respective order numbers of the items and the telephone and fax numbers of Siemens Nixdorf Plus can be found in the chapter "Ordering accessories".

In the chapter "Directories" you will find

- a glossary to explain the terms frequently used in this manual
- a list of abbreviations used in this manual
- a list of illustrations
- a bibliography
- an index for faster retrieval of terms

Behind the bibliography you will find information on ordering printed publications.

1.4 User-friendly user information - tested quality

The Product Liability Act (ProdHaftG) of January 1, 1990, gives user information, a part of technical documentation, legal status equivalent to the product. This gives user information a completely new significance.

To further improve the quality of the user information, this manual has been thoroughly tested by an independent body. This test is carried out by the DOCCert project, a joint project of TÜV

Südwest and tekem, Society for Technical Communication eV

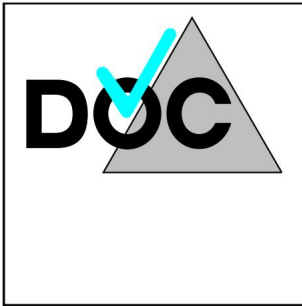
DOCCert combines the expertise of TÜV in the fields of quality assurance and technology with the know-how of tekem, Europe's largest professional association for technical communication and documentation.

This manual was reviewed based on a catalog of criteria developed by DOCCert . To ensure that the manual corresponds to reality, it is always reviewed together with the respective product. The English-language manuals are also reviewed – by a translation agency selected by the testing center.

At the same time, the test provides valuable information for further improving the operating instructions; after all, the saying "Nobody is perfect" applies here too.

The following main features are checked:

- General comprehensibility
- User-friendliness
- Health and safety for the user
- Safety of application and compliance with laws, standards and Guidelines
- Environmental protection
- Design and execution, readability
- Compliance with the product
- Accuracy of content and complete description



The DOCcert test mark at the beginning of these operating instructions is a visible sign that the test has been passed .

The operating instructions for the RM systems are the first manuals in the IT industry to take up this challenge and have received the test mark in both the German and English versions.

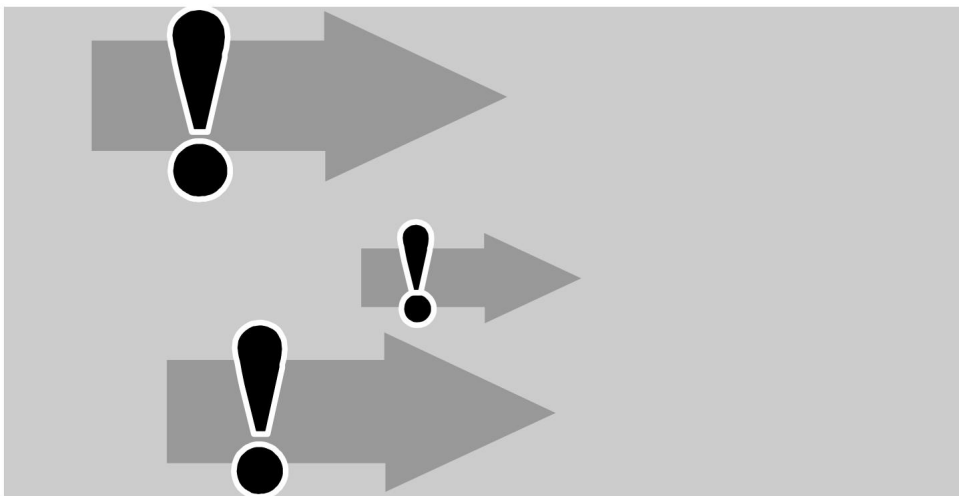
1.5 Means of representation

<i>Italic font</i>	indicates commands and inputs in the running text
Typewriter writing	stands for system output and text on the Screen
Semi-bold font	indicates emphasis in the text
"Quotation marks"	References to other chapters or manuals
	Keys or key combinations in the body text
€	indicates a work step that you perform must
	Additional information, hints and tips
	indicates instructions which, if not observed, Your health, the functionality of your system or the security of your data is at risk

Table 1: The means of representation

2

Important instructions



Safety instructions

The ergonomic computer workstation

Disposal and recycling

2.1 Safety instructions

The device complies with the relevant safety regulations for information technology equipment, including electronic office machines, for use in office environments.



Please observe the safety instructions in the manual "Safety Instructions - RM Systems", which was also supplied with your model.

This chapter contains safety instructions that you must observe when using your system.

!!

If you have any questions about installation and operation in the intended environment, please contact our service department.



- Only transport the device in the original packaging or other suitable packaging that provides protection against shock and impact.
- Before setting up and operating the device, please note the following
For information on environmental conditions, see section "Environmental conditions" on page 127.
- If the device is brought from a cold environment into the operating room
condensation may occur – both on the outside and inside of the device.
- Wait until the device has reached the correct temperature and is completely dry before using it.
- The RM200 system unit may **only** be installed horizontally.
If positioned vertically, there is a risk of tipping over and proper ventilation would not be guaranteed.
- Check whether the rated voltage of the device indicated on the rating plate matches the local mains voltage.
- Only connect the device to a properly earthed socket (the device is equipped with a safety-tested power cable).

2 — Important instructions



- Make sure that the protective contact socket of the house installation is freely accessible.
- Switching off the device does not disconnect it from the mains. To completely disconnect it from the mains, the power plug must be pulled out.
- Lay the cables so that they do not pose a tripping hazard and are not damaged. When connecting a device, observe the relevant instructions in this manual.
- Do not connect or disconnect data transmission cables during a thunderstorm (danger of lightning strikes).
- When cabling the system, follow the sequence described in the section "Connecting peripheral devices" on page 35ff.
- Always connect the system unit and the directly connected external peripherals to the same power distribution board.
Otherwise there is a risk of data loss if, for example, the central unit is still running in the event of a power failure but the peripheral device has failed.
- Make sure that no objects (e.g. jewelry chains, paper clips, etc.) or liquids get into the interior of the device (electric shock, short circuit).
- In the event of an emergency (e.g. damaged casing, power cable or control element, penetration of liquids or foreign bodies), switch the device off immediately, pull out the power plug and contact SNI service.
- Please note that the intended operation of the system (according to IEC 950/EN60950) is only guaranteed when the housing cover is fitted (cooling, fire protection, radio interference suppression).
- Have repairs to the device performed only by authorized personnel!
Unauthorized opening and improper repairs can pose significant risks to the user (electric shock, fire hazard). Unauthorized opening of the device will void the warranty and disclaim Siemens Nixdorf Informationssysteme AG's liability.



- When installing and removing peripheral devices, components and modules, please observe the information in the "RM200 C Series Technical Manual".
- Before opening the system unit, turn off the device and then unplug the power cord.
- Have batteries replaced only by qualified personnel.

2.2 Handling batteries

The system unit contains batteries in the central unit, in the upstream uninterruptible power supply (UPS, optional) and in the screens.



Avoid opening, piercing, or crushing batteries. Never dispose of batteries in fire.

When disposing of used batteries, please observe local regulations regarding the disposal of hazardous waste.

2 — Important instructions

2.3 CE conformity



This device complies with the requirements of EC Directives 89/336/EEC "Electromagnetic Compatibility" and 73/23/EEC "Low Voltage Directive". Accordingly, the device bears the CE marking (CE= European Community) on the back.

2.4 Radio interference suppression

All other devices connected to this product must also be radio interference suppressed in accordance with EC Directive 89/336/EEC or BMPT (Federal Ministry of Post and Telecommunications) Regulation No. 1046/84 or No. 243/91.

Products that meet these requirements are provided with a corresponding manufacturer's certificate or bear the CE mark. Products that do not meet these requirements may only be operated with individual approval from the BZT (Federal Office for Telecommunications Licensing).

2.5 Notes on the screens

The screens may only be opened by trained personnel.

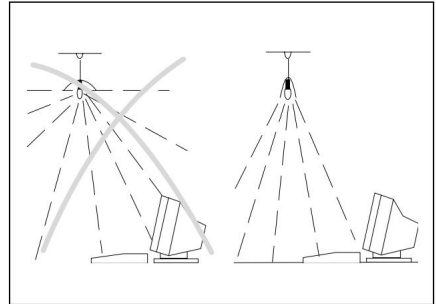
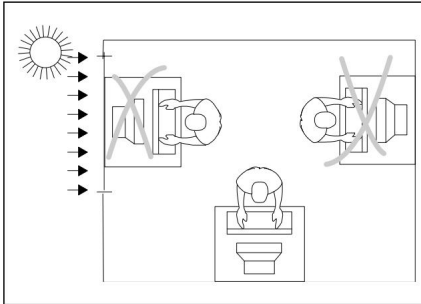


Improper modifications, particularly changes to the high voltage or the installation of a different type of picture tube, can result in significant X-ray exposure. Devices modified in this way no longer comply with the approval and must not be operated.

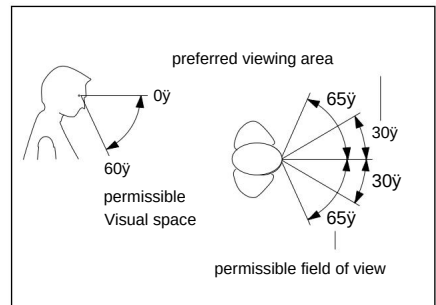
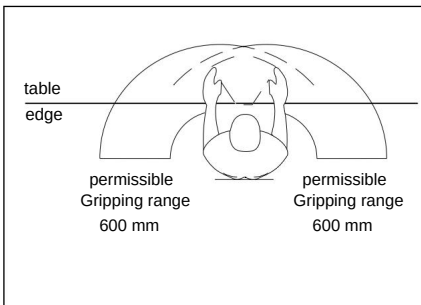
Further information on safe commissioning and operation can be found in the operating instructions for the respective screen.

2.6 The ergonomic computer workstation

Before setting up your system, you should choose a suitable place to work on the screen.



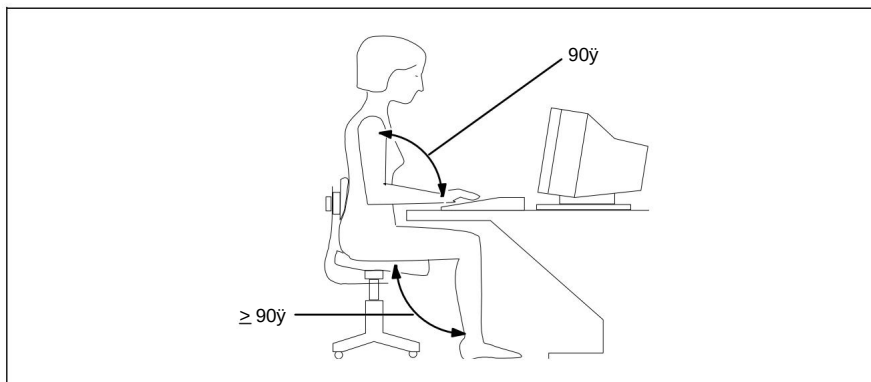
Ê Avoid direct and reflected glare.



Ê Place the keyboard in the optimal reach area.

Ê Place the screen in your preferred viewing area.

2 — Important instructions



Ê Make sure you sit in the correct posture.

2.7 Disposal and recycling

Your RM200 system is a product with a long service life. This is due not only to its expandability but also to its quality.

But there comes a time when you want to replace your computer with a successor model and dispose of the old device. Our company offers you support here as well.

At Siemens Nixdorf, recycling old computer equipment is already a tradition: For more than ten years, obsolete systems have been taken back and recycled.

Right from the design stage, special emphasis is placed on the reusability of components and the recyclability of materials. For example, all larger computer parts made of plastic are clearly labeled according to their material components to facilitate later recycling.

Your RM200 system was also manufactured largely from materials that can be disposed of in an environmentally friendly manner and recycled properly.

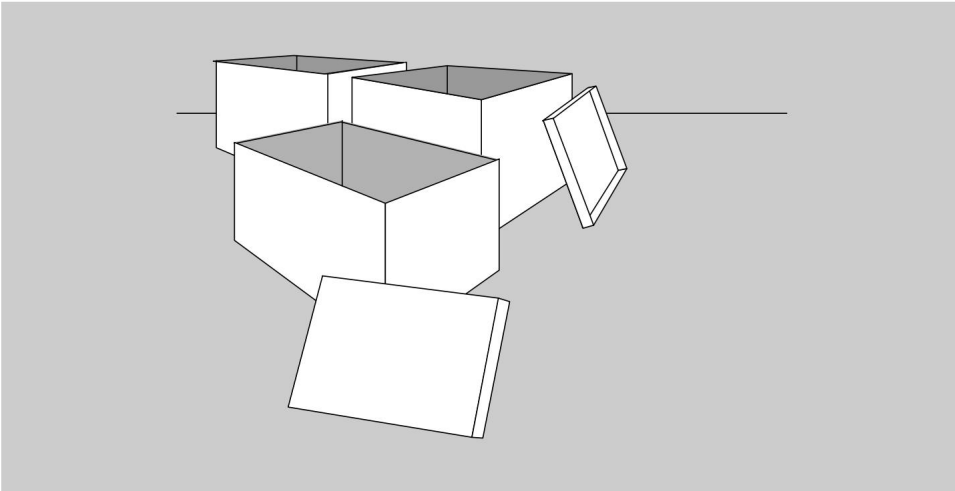
At your request, Siemens Nixdorf Informationssysteme AG will gladly take back old devices.

If you have any questions about disposal, please contact your local office or directly:

Siemens Nixdorf Information Systems AG
Recycling Center
33094 Paderborn

unpacking

3



Ê When unpacking, check that the delivery is complete and undamaged.



Do not throw away the packaging. You may need it for future transport.

Ê If the delivery is complete and undamaged, start with the Installation.

Ê If the delivery is incomplete or damaged, contact your SNI office immediately and send the enclosed complaint card to SNI.

Scope of delivery of the RM200 system

– RM200 system unit with power cable and two keys

– “Operating Instructions RM200 C Models (Reliant UNIX/SINIX)”

– “Technical Manual RM200 C-Series”

– Manual “Safety Practice - RM Systems”

– Complaint card

– Console

graphics monitor

Screen, connection cable (screen – system unit) and operating instructions, keyboard with connection cable and possibly mouse

or

Alphanumeric console

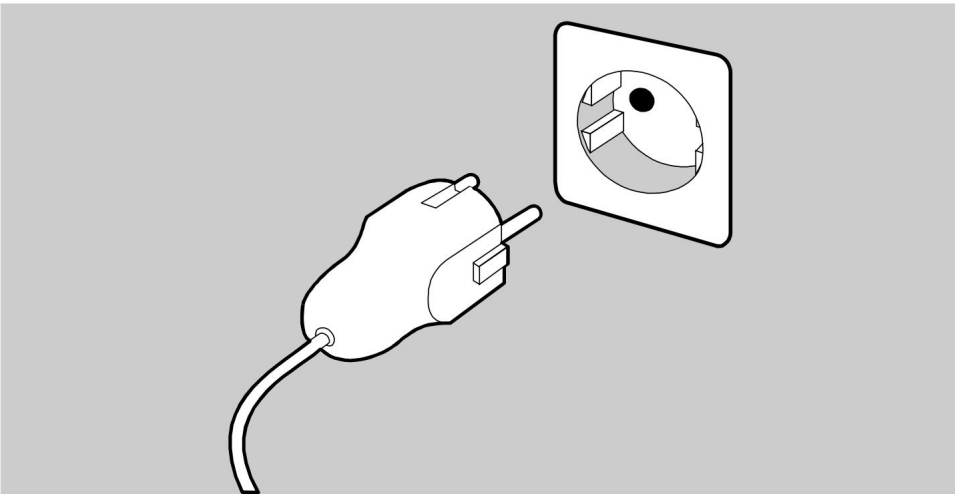
Display unit (V.24), keyboard, power cable, two connecting cables (keyboard – display and display – system unit) and operating instructions

– Reliant UNIX or SINIX V5.42 operating system on CD-ROM

Delivery information and manual “Installing and using Reliant UNIX - RM200, RM300, RM400” or the corresponding manual for SINIX V5.42.

4

Installing the system unit



Setting up the system unit and peripherals

Cabling the system unit

Commissioning the system unit

Turn off the system unit

4.1 Setting up the system unit and monitor



The system can be installed as an RM200 C Rack Unit in the RM 19-inch rack. The rack version includes two slide rails, a drawer, and various small parts (screws, spring nuts, and rosettes) for installation in the RM 19-inch rack. See the "RM 19-inch Rack Operating Instructions" manual.

4.1.1 Setting up the system unit

When setting up the system unit, ensure

- ... that there is sufficient space for maintenance, diagnostics and retrofitting.
- ... that the back of the system unit is freely accessible, because the peripherals
ry devices are connected to the rear panel.
- ... that the front of the system unit is freely accessible and the air inlet is
is not covered by any side.
- ... that the distance to the wall at the back is at least 20 cm so that the warm air can escape
unhindered.
- ... that the mains plug is easily and safely accessible and that the nominal voltage indicated on the
type plate of all devices corresponds to the local mains voltage.
- ... that the device is protected from direct sunlight.
- ... that the ambient conditions (see chapter "Technical data" on
Page 117) must always be observed.

4.1.2 Setting up the screen

For instructions on setting up the screen, please refer to its operating instructions.

4.2 Cabling the system unit

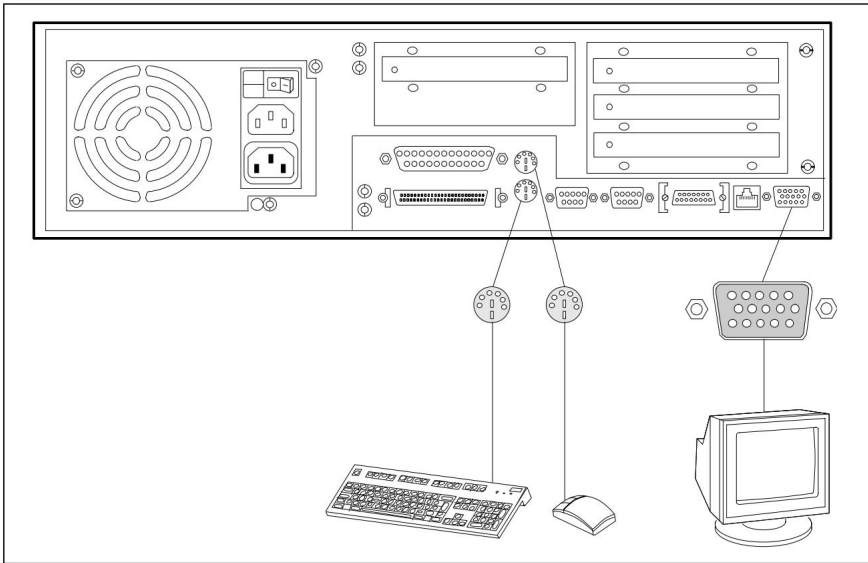


Figure 1: Connecting the system unit to the monitor, keyboard and mouse



When making connections between the system unit and peripheral devices, the power plugs of the devices must not be plugged in (risk of electric shock).

Please note that the system unit and monitor must be set to the correct mains voltage.

All cables and wires must be laid in such a way that no one can step on them or trip over them.

You will need a small flat-head screwdriver and a small Phillips screwdriver to tighten the cable connector fixing screws.

Connect mouse

You must connect the mouse if you want to operate your system in full graphic mode (see also page 31).

É Plug the round 6-pin plug of the connection cable (mouse – system unit) into the corresponding 6-pin socket on the rear panel of the system unit.

The arrow on the connector of the connecting cable must be on the top when you insert the plug into the socket.

Connect keyboard

É Insert the connector of the connecting cable (keyboard – system unit) into the corresponding socket on the underside of the keyboard. The connector must click into place.

É Connect the keyboard to the corresponding 6-pin socket (directly below the mouse connection socket) on the rear panel of the system unit.

The arrow on the connector of the connecting cable must be on the top when you insert the plug into the socket.

Connect screen

You can connect 33 cm (14"), 35 cm (15"), 40 cm (17") or 50 cm (21")

Connecting monitors. The monitors are supplied with a power cable and connection cable.

If you have installed the optional PCI graphics controller, you must connect the monitors to this controller.

The standard SVGA connector will then not be usable. The optional PCI graphics controller enables a higher resolution.

– Connect monitors to optional PCI graphics controller

É Plug the 15-pin connector of the connection cable (monitor – system unit) into the 15-pin socket of the optional PCI graphics controller and screw the connector tight.

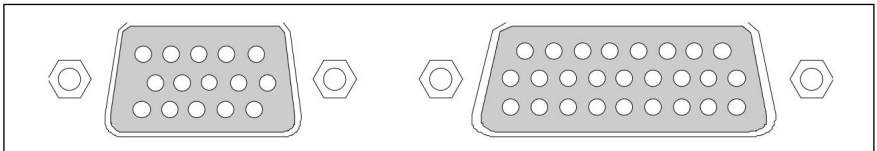


Figure 2: Optional PCI graphics controller (CG16, CG17)

4 — Installing the system unit

The connectors shown are located on one of the controller bays on the rear of the system unit. The 15-pin connector (left) is for connecting monitors to the optional PCI graphics controller, while the 26-pin connector (right) is reserved for future expansion.

Ê Plug the other end of the cable into the corresponding Connection socket on the back of the screen.

– Connecting monitors without an optional PCI graphics controller

Ê Plug the 15-pin connector of the connection cable (monitor – system unit) into the 15-pin socket (SVGA) on the rear panel of the system unit and screw the connector tight.

Ê Plug the other end of the cable into the corresponding connector on the back of the monitor.

Connecting an alphanumeric console

Ê Plug the 9-pin socket of the connection cable (console – system unit) onto the 9-pin V.24 connector labeled CONSOLE/COM1 (back of the system unit) and screw the socket tight.

Ê Plug the 25-pin socket of the connection cable (console – system unit) into the 25-pin V.24 plug of the console connection panel.

Ê Connect the keyboard to the console as described in the operating instructions of the alphanumeric console.

For alphanumeric consoles, the line speed must be set to 19200 baud. Refer to the alphanumeric console's manual for details on how to set the line speed.

Default settings can be found in the "Settings" chapter on page 129.

An **alphanumeric console with a VGA monitor** is connected like a graphics monitor (but without a mouse).

4.3 Commissioning the system unit

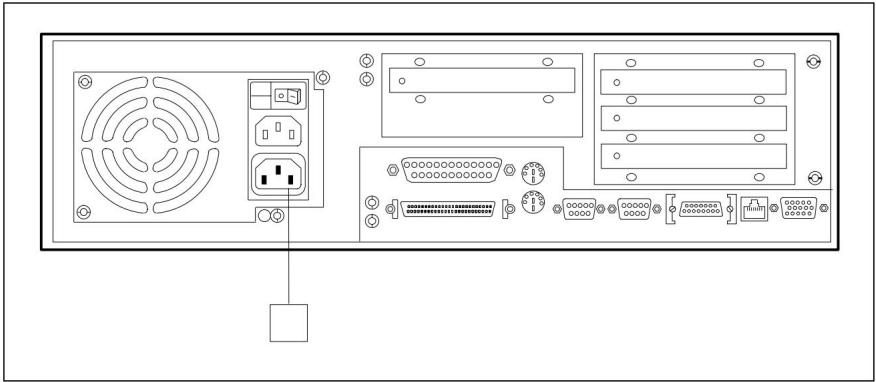


Figure 3: Connecting the system unit to the power supply



The system unit and the monitor must be connected to the same circuit breaker, otherwise compensating currents may flow.

The set mains voltage must match the operating voltage of your house installation.

The system can be operated with both 100-120 V and 200-240 V.

By default, it is delivered with a 230 V setting. You can **adjust the mains voltage** on the back of the system unit (next to the power switch) . You will need a small flathead screwdriver to do this.

Ë Connect the monitor either to the power output socket **(1)** on the system unit or directly to the mains (depending on the power cable supplied).



Please note that the system unit's power output socket can only handle a maximum of 1.5/3 A. 50 cm (21") monitors must not be connected to the system unit's power output socket because they consume a higher current. These monitors must be connected separately to an external power supply.

Ë Connect the system unit to the mains.

Make sure that the power switch on the back of the system unit is switched on (position I).

4 — Installing the system unit

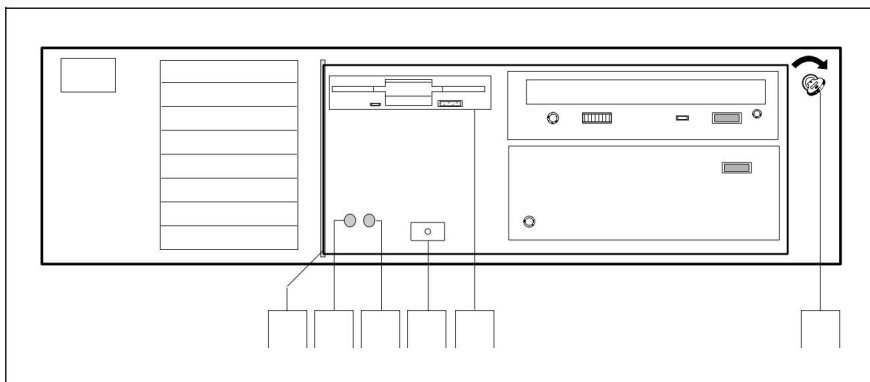


Figure 4: The front of the system unit

- (1) Locking slide
- (2) Access display
- (3) LED POWER (power supply present)
- (4) Power button
- (5) floppy disk drive
- (6) Locking lock



Before switching on, the system unit must have been unpacked and left at room temperature for at least two hours.

Ê First switch on the monitor, then the system unit.

Ê Insert one of the two supplied keys into the lock on the Front of the system unit (6).

Ê Turn the key in the direction of the open lock symbol.

Ê Slide the locking slide (1) on the front of the system unit to the left so that you can see the controls.

Ê Press the power button (4).

The POWER LED (3) lights up green.

Boating opportunities

Your system boots:

- fully graphical when keyboard and mouse are connected
- alphanumeric with output to the graphic monitor if the keyboard is
Mouse is connected
- alphanumeric with output to the first serial interface (COM1) for a
Alpha terminal when no keyboard is connected.

Reliant UNIX or SINIX V5.42

The Reliant UNIX or SINIX V5.42 operating system is already installed on your system upon delivery.

For information on how to proceed with subsequent installation, see the chapter "Installing and uninstalling packages" in the manual "Installing and using Reliant UNIX – RM200, RM300, RM400" or in the corresponding manual for SINIX V5.42.

4.4 Switching off the system unit

• Alphanumeric console

Ê Log in as *root* .

Ê Enter the command *shutdown -i0 -g20 -y* .

The option *-g* specifies that the operating system should, for example, after 20 seconds (*-g20*) to shut down properly.

4 — Installing the system unit

• Graphics monitor

Ê Log in as *root* .

Depending on the desktop you are using, proceed as follows:

Ê Switch to the *Main Desktop* window (SINIX desktop) or start the *Application Manager* (CDE desktop).

Ê Select *File* (SINIX desktop) or *System Administration* (CDE desktop) from the menu bar and then the *Shutdown icon in this menu*.

Ê If you want to use a different time period than the preset 20 seconds to shut down the operating system, you must now move the grace period button accordingly.

Ê Click on the *Start icon*.

If other users are logged in, they will be automatically informed that the operating system will shut down properly after the set time period has elapsed. After this time period has elapsed, the users will be informed again and the operating system will shut down. Finally, the power supply will be automatically turned off, and the green LEDs will no longer light up.

Ê Then switch off the external peripherals and the console separately.

For information on the topic of *shutdown* , see also the manual "Installing and Using Reliant UNIX – RM200, RM300, RM400" or the corresponding manual for SINIX V5.42.

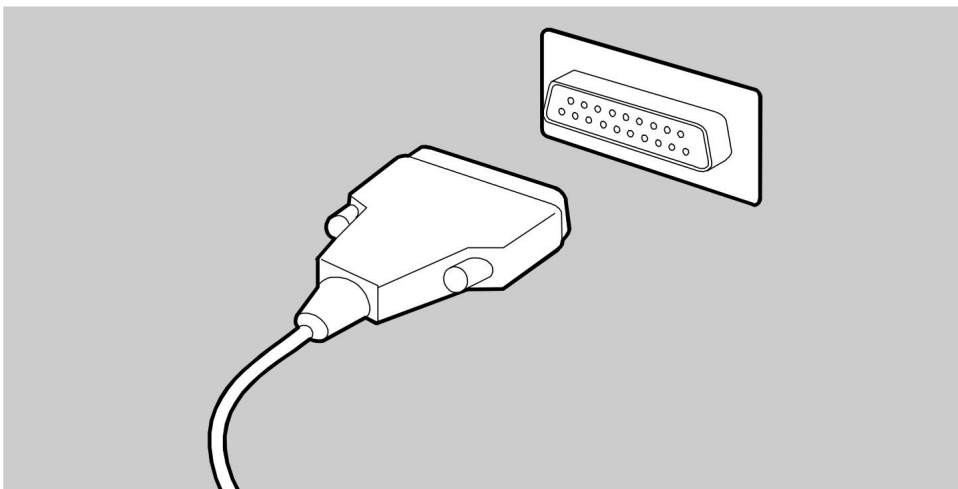


In an emergency, you can turn off the system unit using the power switch on the rear panel or unplug the power cord.

Data is lost.

5

Installing peripherals



Connecting peripherals

- Connect printer, modem and display units

- Connect system unit to LAN and WAN

- Connecting SCSI peripherals

- Connecting peripheral devices later

- Connect the system unit to the uninterruptible power supply (UPS)

Commissioning peripheral devices

5.1 Connecting peripheral devices

Once your system unit and monitor are installed, you can start connecting peripherals.

You will need a small flat-head screwdriver and a small Phillips screwdriver to tighten the cable connector fixing screws.



When making connections between the system unit and peripheral devices, the system unit must be turned off and the devices' power cords must be unplugged.

The system unit, monitor and peripherals must be set to the correct mains voltage.

All cables and wires must be laid in such a way that no one can step on them or trip over them.

Shielded cables must be used to connect peripheral devices to the system unit.

The system unit and the peripheral devices must be connected to the same circuit breaker to prevent compensating currents from flowing.

If this is not possible, then a transmission method for different circuit distributors must be used by an authorized specialist (electrician), even for short distances.

Failure to comply with the above connection conditions may result in disruptions in data transmission and damage to the devices.

5.1.1 Rear panel of the system unit

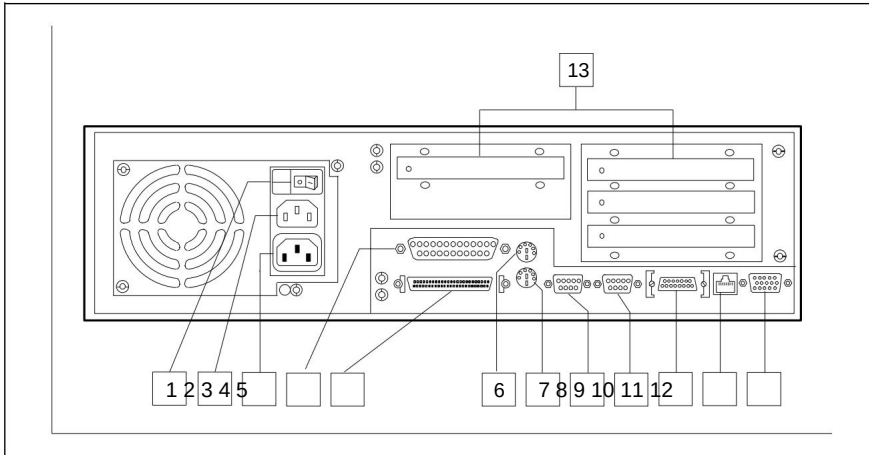


Figure 5: The rear panel of the system unit with the individual connection panels

- (1) Voltage selector switch and power switch
- (2) Power connection for the system unit
- (3) Power connection for the screen (graphic monitors)
- (4) Connection for system printer (Bitronics interface)
- (5) Optional connection for SCSI devices SE (single ended)
- (6) Connection for the mouse
- (7) Connection for the keyboard
- (8) CONSOLE/COM1: Connection for printer, (console) screen or Modem (as console for graphic monitors)
- (9) PORT1/COM2: Connection for printer, modem, monitor, UPS or Teleservice
- (10) Ethernet AUI (Attachment Unit Interface)
- (11) Ethernet twisted pair (10BaseT)
- (12) Connection for the screen (SVGA)
- (13) Connector panels for additional PCI and EISA controllers



The two LAN ports Ethernet AUI (**10**) and Twisted Pair (10BaseT) (**11**) cannot be operated simultaneously.

5.1.2 Connecting printers, modems and display units

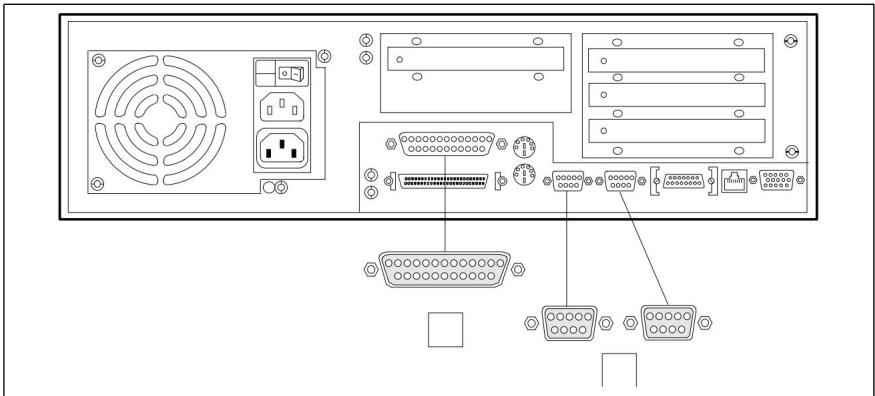


Figure 6: Connecting the printer and modem to the system unit

Printers are connected to the system unit via the Bitronics interface **(1)** (Printer). Modems, monitors, and other printers can be connected to the V.24 Ports **(2)** (CONSOLE/COM1 and PORT1/COM2) can be connected.

Connect printer to Bitronics interface

Ë Connect the power and connection cable to the printer as described in the accompanying operating instructions. A connection cable (maximum permissible cable length of three meters) is available for this purpose.

Ë Plug the other end of the connection cable into the corresponding corresponding connection of the system unit (1).

Ë Screw the plug tight.

Connect printer (or modem) to V.24 interface

Ë Connect the power and connection cable to the printer, monitor (or modem) as described in the respective operating instructions.

Ë Plug the other end of the connection cable into the connector on the system unit (2).

Ë Screw the plug tight.

Adjust printer settings

When connecting a printer, the printer settings must be adjusted. Refer to the printer's operating instructions for details on how to set these values.

The default parameters are:

Baud rate:	9,600
Parity:	no parity
Character length:	8 bit
Number of stop bits:	1

If you deviate from these standard parameters, you must also adapt the corresponding interface in the operating system to the changed values.

The maximum permissible value for the data transmission speed of the V.24
The maximum permissible speed for these interfaces is 38,400 baud. The maximum permissible value for your printer can be found in the respective device's operating manual.
The following guidelines apply:

Data transfer speed 9,600 baud:	up to 30 m cable length
Data transfer speed 19,200 baud:	up to 15 m cable length
Data transfer speed 38,400 baud:	up to 7.5 m cable length

Connect printer (or modem) via terminal controller TC4

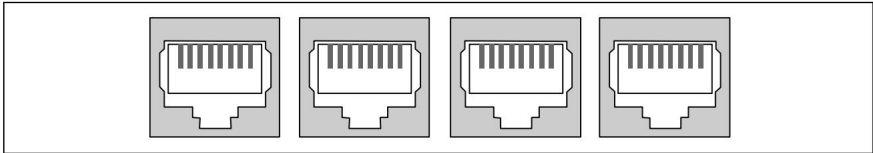


Figure 7: Terminal Controller TC4 (CT45) and TC4P (CT40) - (optional) -

Using the TC4 terminal controller with a V.24 interface, you can connect up to four serial devices (e.g., printers or modems) to the system unit. The TC4 only supports the V.24 interface.

Display units and printers to the terminal controller TC4P connect

The TC4P terminal controller offers four serial interfaces that can be connected via RJ45 connectors. Up to four display units and printers per controller can be connected to the system unit via V.24, V.11, IHSS, or IMD interfaces. Mixed operation of the various interface types in one controller is possible.

Ê Connect the connection and power cable to the respective peripheral device as described in the associated operating instructions.

Ê Plug the connection cable into one of the four sockets on the controller with RJ45 connector.



You can determine the interface type using *SYSADM* (alphanumeric display) or *Config* (graphics display). See also the manuals "System Administration and Hardware Configuration with the SYSADM User Interface" and "Hardware Configuration with Config under SINIX/Windows."

The controller interfaces are counted from right to left (port 1–4).

The installed interface type of the four RJ45 sockets can be found in the enclosed information sheet on slot numbering and port assignment.

Connecting peripheral devices to the TC32 terminal controller

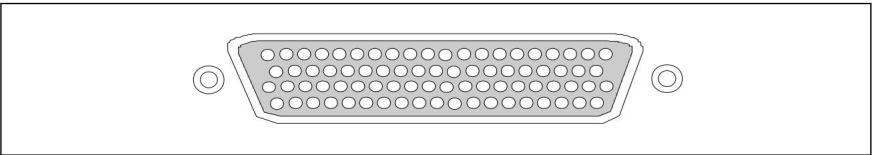


Figure 8: Terminal controller TC32 (CT50) - (optional) -

The EISA Terminal Controller TC32 (CT50), together with the CT51 expansion card, enables the direct connection of up to 32 asynchronous terminals, printers, or modems. Connection is made via the CT52 and CT53 connection boxes, each with sixteen RJ45 connectors for connecting the peripheral devices. A maximum transmission rate of 38.4 kbps is possible per channel. See also the technical manual "Terminal Controller 32 Ports EISA - CT50."

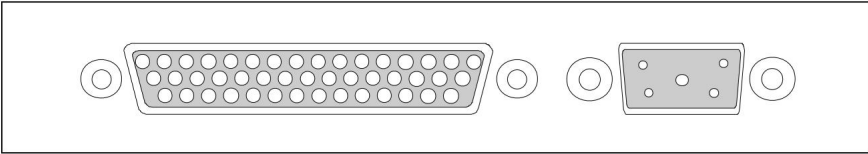
Asynchronous terminal controller

Figure 9: Asynchronous terminal controller, EISA (CT11,CT13) - (optional) -

With this terminal controller and up to four connection boxes with V.24 interfaces or V.11 interfaces, you can connect a total of 64 screen units or
Connect the printer to the system unit.

See operating instructions for the respective connection box.

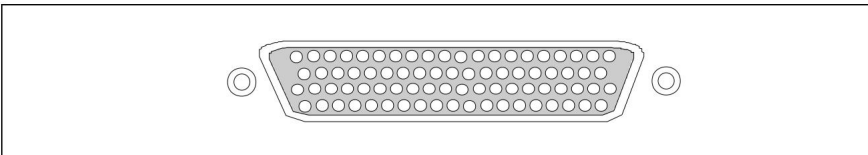
Intelligent Terminal Controller

Figure 10: Intelligent Terminal Controller (ITC, ISA) - (optional) -

With the Intelligent Terminal Controller and the SSW16 connection box with IHSS interfaces, you can connect up to 16 display units or printers per controller to the system unit via the IHSS interfaces.

See operating instructions for the SSW16 connection box.

Connect peripherals via IHSS Multipoint Controller (E-SIH)



Figure 11: IHSS multipoint controller E-SIH (CT31, CT32, CT33) - (optional) -

You can connect a connection box to each of these controllers, which offers either four ports for four IHSS HDLC lines or four V.24 HDLC ports for modems, or two IHSS HDLC lines plus two V.24 HDLC ports for modems. A modem and a corresponding multiplexer can then be used to operate an IHSS line. Four monitors can be connected to each of these IHSS lines. An additional printer can be connected to each monitor unit. Contact your SNI office to find out what equipment is required and which monitor units can be used.

Connect peripherals via TACSI controller (E-SIM)

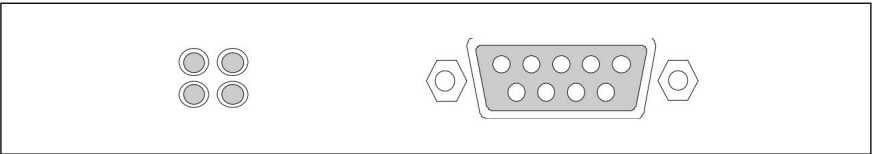


Figure 12: TACSI controller E-SIM (CT21) - (optional) -

Each of these controllers can connect up to 32 display units or printers to the system unit via two-wire telephone lines and terminal connection concentrators (TAKs). To find out which display units can be connected, contact your SNI office.

The connection should be made by the SNI service.

5.1.3 Connecting the system unit to the LAN

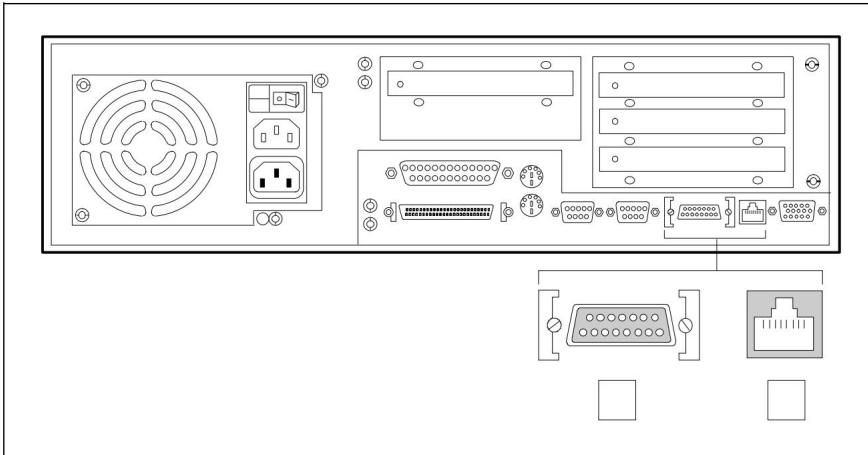


Figure 13: Connecting the system unit to the LAN

The system includes an Ethernet controller in its basic configuration. Additional LAN controllers can be installed in the free slots on the rear panel of the system unit.

Remote installation of the Reliant UNIX or SINIX V5.42 operating system is only possible via the Ethernet controller integrated in the motherboard (see "Installing and Operating Reliant UNIX – RM200, RM300, RM400" or the corresponding manual for SINIX V5.42).

The two LAN ports Ethernet AUI **(1)** and Twisted Pair (10BaseT) **(2)** cannot be operated simultaneously.

Connection via AUI (Attachment Unit Interface)

Ê Plug the LAN transceiver cable plug into the socket (1).

Ê Secure the connector by locking the sliding spring.

Connection via twisted pair (10BaseT)

Ê Plug the twisted pair cable plug into the socket (2).

Plug must click into place.

LAN controller Ethernet 10 Mbit/s (PCI)

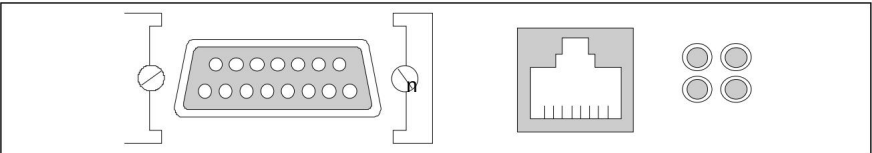


Figure 14: LAN controller Ethernet 10 Mbit/s (PCI) (CL13) - (optional) -

You can connect both Thick Ethernet (AUI) and twisted pair LAN cables to this LAN controller. The controller does not need to be reconfigured when switching from AUI to twisted pair or vice versa.

left connection	AUI connector for the connection cable to the fan-out unit or transceiver
right connection	Twisted pair (10BaseT)

The two ports of this LAN controller cannot be used simultaneously.

LAN controller Fast Ethernet 10/100 Mbit/s (PCI)



Figure 15: LAN controller Fast Ethernet 10/100 Mbit/s (PCI) (CL16) - (optional) -

The Fast Ethernet controller provides one (10BaseT or 100BaseTX) Ethernet interface in a single PCI slot. The transfer rate is 10 or 100 Mbps and is automatically detected by the controller.

The two ports of this LAN controller cannot be used simultaneously.

See also the technical manual "10/100 Mbit/s Ethernet Controller CL16".

LAN Controller Token Ring (EISA)

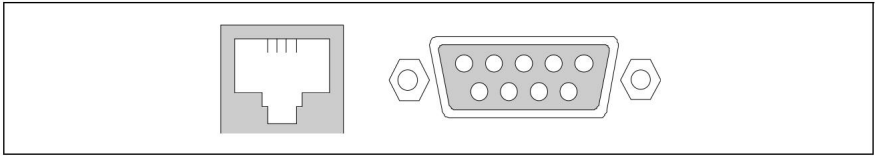


Figure 16: LAN Controller Token Ring (EISA) (CL31) - (optional) -

You can connect both unshielded twisted pair (UTP) and shielded twisted pair (STP) LAN cables to this LAN controller. The two ports on this LAN controller cannot be used in parallel.

- | | |
|------------------|-------------------------------|
| left connection | Unshielded Twisted Pair (UTP) |
| right connection | Shielded Twisted Pair (STP) |

Ê Plug the UTP (Unshielded Twisted Pair) LAN cable into the left socket. The connector must click into place.

Ê Connect STP (Shielded Twisted-Pair) LAN cables to the right socket and secure the plug by tightening the screws.

LAN Controller Token Ring (PCI)

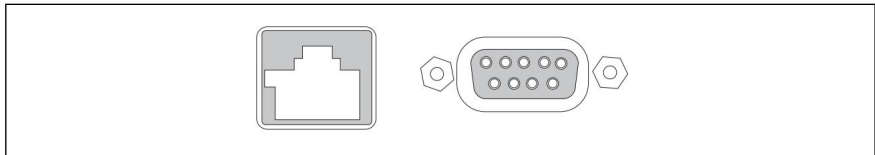


Figure 17: LAN Controller Token Ring (PCI) (CL32) - (optional) -

You can connect both unshielded twisted pair (UTP) and shielded twisted pair (STP) LAN cables to this LAN controller. The two ports on this LAN controller cannot be used in parallel.

- | | |
|------------------|-------------------------------|
| left connection | Unshielded Twisted Pair (UTP) |
| right connection | Shielded Twisted Pair (STP) |

The LAN cables are attached as described above.

LAN controller FDDI, single attached

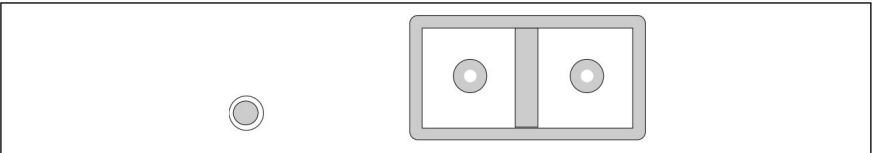


Figure 18: LAN controller FDDI, single-attached (CL41) - (optional) -



FDDI cables are fiber optic cables. Never look directly into a fiber optic cable or connector, as the laser beams in fiber optic devices can cause **eye injury**.

If the controller is not connected to the FDDI cable, the dust cover must be placed on the controller for safety reasons and to ensure continued proper operation.

This LAN controller can only accommodate one connector.

Plug the FDDI cable connector into the socket. The connector must be rest.

LAN controller FDDI, dual attached

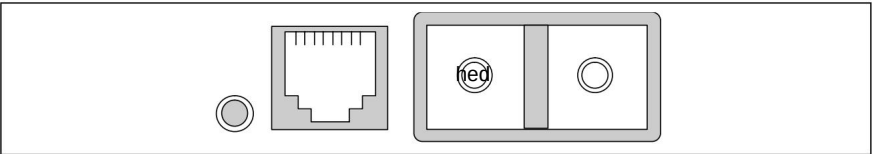


Figure 19: LAN controller FDDI, dual-attached (CL42) - (optional) -



FDDI cables are fiber optic cables. Never look directly into a fiber optic cable or connector, as the laser beams in fiber optic devices can cause **eye injury**.

If the controller is not connected to the FDDI cable, the dust cover must be placed on the controller for safety reasons and to ensure continued proper operation.

5 — Installing peripherals

This LAN controller can only be operated in conjunction with the FDDI (single-attached) controller. First, connect the FDDI LAN controller (single-attached) as described above.

When installing the CL42 controller (FDDI dual attached), an additional EISA slot is occupied in addition to the CL41 controller (FDDI single attached).

É Plug the two-pin connector of the second FDDI cable into the right socket of the second controller connector panel. The connector must click into place.

É If you use an optical relay for the fiber optic network, also plug the RJ45 connector into the left socket of the connection panel.

ATM (Asynchronous Transfer Mode) Controller



Figure 20: ATM controller 155 Mbit/s (PCI) (CL51) - (optional) -



The CL51 ATM controller requires fiber optic cables. Never look directly into a fiber optic cable or connector, as laser beams in fiber optic devices can cause **eye injury**.

If the controller is not connected to the ATM cable, the dust cover must be placed on the controller for safety reasons and to ensure continued proper operation.

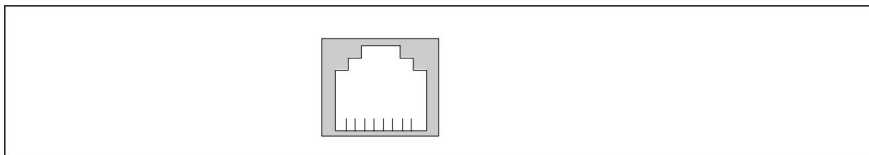


Figure 21: ATM controller 25.6 Mbit/s (PCI) (CL54) - (optional) -

If you have an ATM controller installed, you will need the appropriate infrastructure to connect it to the ATM network.

Your SNI office will answer any questions you may have about ATM networking.

5.1.4 Connecting the system unit to the WAN

In its basic configuration, the system is not equipped with a WAN controller. If you have a WAN controller installed, you will need a corresponding data transmission device to connect to the WAN.

Your SNI office will answer any questions you may have about data transmission equipment and long-distance lines.

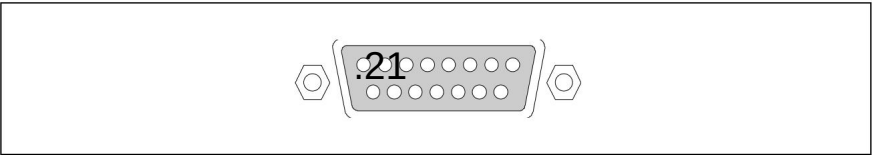


Figure 22: WAN controller with X.21 interface (EWA-L, EISA) (CW11) - (optional) -

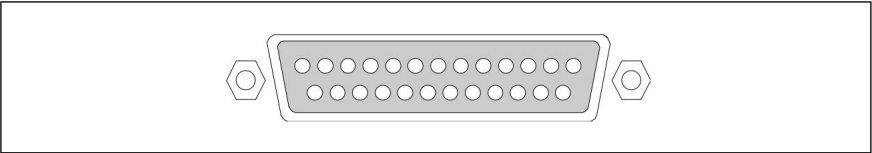


Figure 23: WAN controller with V.24 interface (EWA-L, EISA) (CW14) - (optional) -

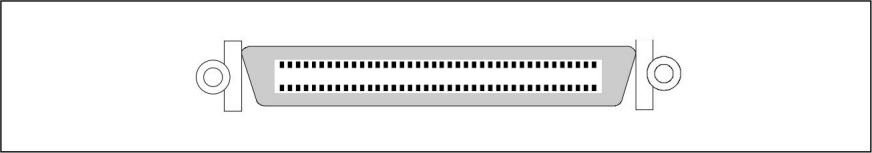


Figure 24: WAN controller with V.24 and X.21 interface (EWA, EISA) (CW20, CW22) - (optional) -

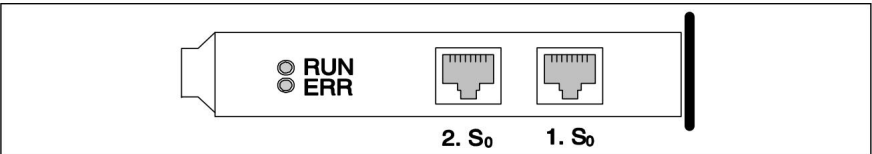


Figure 25: ISDN-S0 controller (ISA) (CW32) - (optional) -

The second S0 interface is only available if the CW33 option is installed.

5 – Installing peripherals

5.1.5 Connecting SCSI peripherals

The following SCSI (Small Computer System Interface) devices can be connected to the system unit:
Devices can be connected:

- Via SCSI-SE (single ended)
 - up to two peripheral boxes (with one or two of the following drives)
 - Hard disk drives (3.5 inches)
 - MBK (magnetic tape cassette) drive 4 mm or 8 mm
 - MBK drive 1/4 inch
 - OD (Optical Disk) drive
 - CD-ROM drive
 - MBK changer 4 mm
- Via SCSI-DF (differential)
 - MBK changer 8 mm
 - OD changer

The devices connected to the SCSI interfaces must be placed in the immediate vicinity of the system unit, as the length of the cable connections is limited. The maximum length of the SCSI connection cables routed outside the chassis is two meters for SCSI SE (single-ended) connectors and 15 meters for SCSI DF (differential) connectors.

Further information can be found in the operating instructions for the peripheral box.

The SCSI (external) connector is intended for SE (single-ended) SCSI devices, while the optional connector panels are for additional SCSI controllers. These connector panels require the corresponding controllers in the slots.

The following SCSI controllers can be installed in the corresponding slots on the PCI/EISA Bus can be installed:

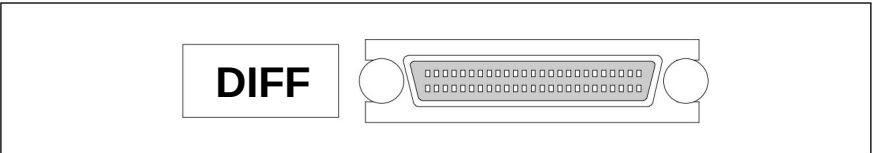


Figure 26: SCSI controller, differential (CS11, CS13) - (optional) -

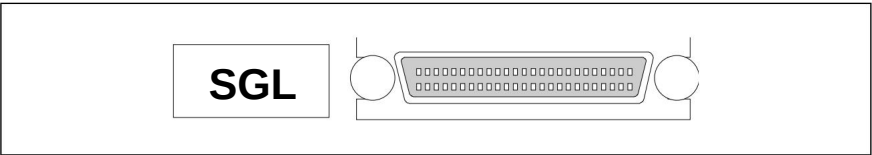


Figure 27: SCSI controller EISA, single ended (CS14) - optional -

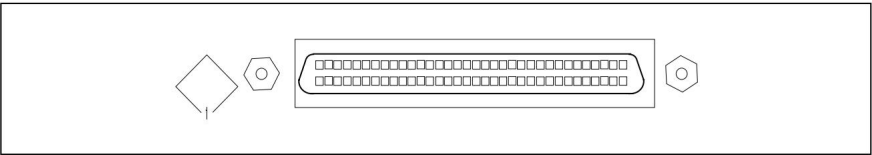


Figure 28: SCSI host adapter PCI, single ended (CS19) - (optional) -

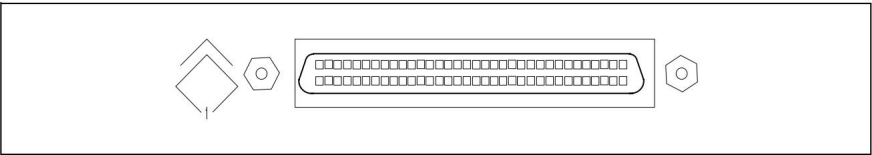


Figure 29: SCSI host adapter PCI, differential (CS20) - (optional) -

Ê Cable the individual devices according to the instructions in the respective operating manuals.
Make sure that the peripheral device's power plug is connected to the same power distribution box as the system unit.

5 — Installing peripherals



Do not plug or unplug the connecting cables between SCSI devices in add-on enclosures and the system unit while the system unit is powered on. This will result in malfunctions and possible data loss.

SCSI devices with SE connector may only be connected to a SCSI SE interface connected. Incorrect connection may cause hardware malfunctions.

Cabling external devices to a SCSI controller

Ê Ensure that an optional external SCSI controller is installed.

Ê Connect the SCSI controller connector on the rear panel
the system unit with one of the two connection sockets of the external device.

Ê Plug the supplied terminating plug, which contains the terminating resistor, into the free connection socket of the external device.

For detailed information about the possible combinations of SCSI controllers and SCSI peripherals, please contact your SNI office.

5.1.6 Connecting peripheral devices later

If you want to connect SCSI peripherals later, you must follow the order of the next steps.

1. Shut down the system.
2. Turn off the system unit.
If you shut down the system in Reliant UNIX or SINIX V5.42 using the *shutdown* command , the system shuts down automatically.
3. Unplug the power cord or switch off the system unit at the power switch (back).
4. Establish the connections between the system unit and the peripheral device.
5. Plug in the power cables of the system unit and peripheral device.
6. Restart the system.

5.1.7 Connecting the uninterruptible power supply



Before connecting the system unit to the UPS, refer to the operating instructions for the uninterruptible power supply (UPS).

The uninterruptible power supply (UPS) is connected upstream of the system and supplies the system with power regardless of the mains voltage. This protects the system from power interruptions, voltage dips, and voltage spikes.

Ê First plug the 9-pin plug of the connection cable into the socket
PORT1/COM2 on the rear panel of the system unit.

Ê Then plug the system unit's power plug into the UPS socket.

You can find out how to install the software and which settings you need to make to operate a UPS in the manual "Installing and Using Reliant UNIX – RM200, RM300, RM400" or in the corresponding manual for SINIX V5.42.

However, the default is Port_1 (COM2).

5 — Installing peripherals



If the port on the rear panel of the system unit was previously used for a display workstation, the port must be deconfigured under *SYSADM* (alphanumeric display) or *Config* (graphics display). See also the manuals "System Administration and Hardware Configuration with the SYSADM User Interface" and "Hardware Configuration with Config under

SINIX/windows".

5.2 Commissioning peripheral devices

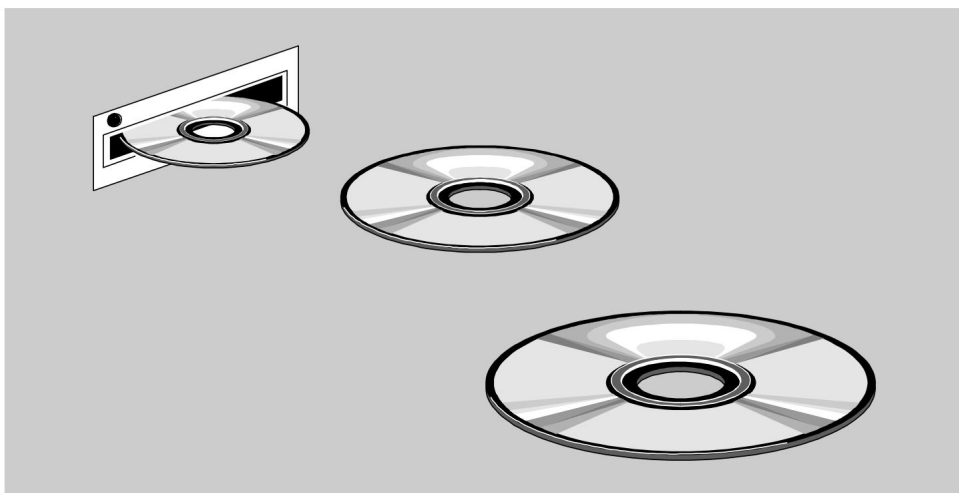
If you want to use peripheral devices (monitor and printer, peripheral box), follow the instructions included with these devices.



Always turn on the SCSI peripherals first, then the system unit.

software

6



Activating Reliant UNIX or SINIX V5.42 for the first time

6.1 Reliant UNIX or SINIX V5.42 for the first Activate

The Reliant UNIX or SINIX V5.42 operating system is preinstalled. You only need to install the operating system if you want to work with a version other than the current one, or if the installed operating system has been corrupted. The information required for installation can be found in the manual "Installing and Using Reliant UNIX – RM200, RM300, RM400" or the corresponding manual for SINIX V5.42.

For installation you need:

- Reliant UNIX or SINIX V5.42 (CD-ROM)
- Key diskette (SINIX V5.42 only)
- Delivery information
- Reliant UNIX or SINIX V5.42 Installation Manual

If you are working with the pre-installed version, you do not need the CD-ROM with the operating system.

6.1.1 Installing the key diskette (SINIX V5.42 only)



If you don't have the key disk handy, you can still put the system into operation. However, this will only create a license for two users. Therefore, you should install the key disk as soon as possible.

During the boot process, control messages are displayed until

You will be prompted to insert the key disk:

Please install your SINIX authorization file. If you don't have one, only 2 users are allowed to work on your system. Type 'y' for <ready> then.

Are you ready? (default: y) [y,n,?,q] _

Ê Push the key disk all the way into the drive until it clicks into place and the release button pops out.

Ê Now enter *y* on the keyboard and press the *Ú* key.



If there is no disk in the drive or the wrong disk is in the drive even though you entered *y*, the operating system will still boot normally. However, only one license for two users will be created.

No or incorrect SINIX authorization file.

System start continues, but afterwards only 2 users are allowed to work on your system.

After completing the commissioning, insert the correct key diskette into the diskette drive to install the license for more than two users.

For information on how to install the license, see the manual "Installing and Operating SINIX - RM200, RM400" in the chapter "Installing and Uninstalling Packages", section "Installing Software Packages".



If you entered *n*, the operating system will shut down and the system will be switched off (*shutdown command*).

Assuming you want to abort, we are shutting your system down now.

If this happens, you will need to restart the system. To do so, repeat all the steps described in this chapter.

If you entered *y* and the correct disk is in the drive, the following message will appear:

Installation in progress. Do not remove the diskette.

At this point, the procedure splits into two different branches, depending on the screen configuration of your system (see next section).

6.1.2 Configure console, keyboard, mouse and screen

After powering on, the system boots automatically. During the boot process, control messages are displayed until you are prompted for information about the screen.

Alphanumeric console

If you have connected an alphanumeric console, the following appears
Selection:

You can choose one of the following term variables for your console terminal

1. vt02
2. 97801
3. ba80/9766

Please type in the number of your terminal: _

Ê Select the appropriate console screen type.

Further messages are displayed until the following message appears:

The system is ready.

Name_xyz

Console Login:

Ê Now please continue reading the section “End of the first boot process” on page 76.

Graphics monitor as console

If you have connected a graphics monitor as a console, you will be prompted to configure the graphics properties of the hardware you are using. The graphics parameters you can set are required for the following three hardware components:

- Keyboard
- Mouse
- Screen

First, determine the following information:

Country variant of the keyboard:	e.g. German (see type plate, e.g. DEU)
used Screen connection:	SVGA connector on the motherboard (onboard) or graphics controller on a PCI slot
Screen type:	33cm (14"), 35cm (15"), 40cm (17") or 50cm (21")

You can find this information either on the labels on the devices or in the operating instructions for the devices.

You will be shown windows for input, each offering a form for mouse, keyboard and screen configuration.

You must make the entries using the *SYSADM* user interface . Some instructions for using *SYSADM* can be found on the next page. Further information on *SYSADM* can be found in the manual "System Administration and Hardware Configuration with the *SYSADM* User Interface."

Notes on SYSADM

- When first started up, the dialogue is in English.
- The cursor is in the first input field. Use the $\hat{E}$, $\hat{E}$, and $\hat{U}$ keys to move the cursor to the next input field.
- You can request help text using the [HELP] or [F1] function key. The help text always refers to the input field in which the cursor is located.
- Use the function key to fill in each input field [CHOICES] or [F2].

While input via the keyboard is also possible, you should use the function key mentioned above instead. You will then be presented with all permissible values for selection, either in the input field or in an additional list. In such a list, use the $\hat{E}$ and $\hat{E}$ keys to position yourself on the desired entry, and then press the $\hat{U}$ key to transfer it to the input field.
- Finally, press the function key [SAVE] or [F3].

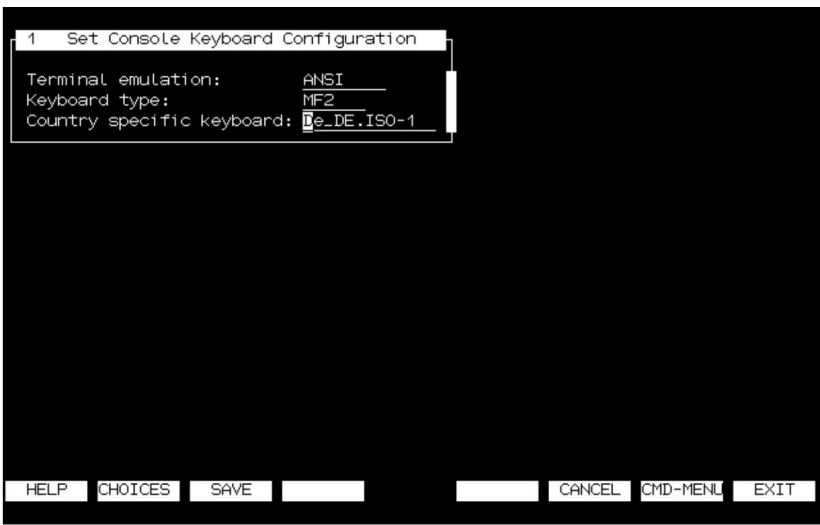
If you do not want to change the preset parameters, you can press the function key [EXIT] or [F8] instead.

6 _ software

Configure keyboard

The graphics monitor allows you to work in both graphic and alphanumeric emulation. You must configure the keyboard for both emulations. Before setting up the two emulation types, familiarize yourself with the parameters you need to enter.

Example of keyboard configuration under SINIX V5.42
(alphanumeric emulation):



1 Set Console Keyboard Configuration

Terminal emulation: ANSI

Keyboard type: MF2

Country specific keyboard: De_DE.ISO-1

HELP CHOICES SAVE CANCEL CMD-MENU EXIT

Notes on the parameters:

Terminal emulation Emulation type

The keyboard must be configured for both alphanumeric operation (*ANSI emulation*) and graphical operation (x97801 emulation). You must enter the parameters separately for each of the two emulation types.

Keyboard type

Keyboard type
Two keyboard types are supported: the MF2 keyboard and the WX keyboard. Please refer to the nameplate on the bottom of the keyboard for this information. If you are using a PC keyboard without a nameplate, specify *MF2*.

Country-specific keyboard

Keyboard country variant
The keyboards are country-specific. Use [CHOICES] or [F2] to get an overview of all supported country variants. If you don't know which variant applies to you, you can use [HELP] or [F1] to request help text. This text contains a mapping of the available variants to the keyboard's model codes. Please refer to the type plate on the underside of the keyboard for this information.

The names for the country variants have the following syntax:

<Language>_<Country>.<Codeset>-<Version>

For some countries, several country variants are offered. They usually differ in the code set. There are two types of code sets:

- ISO8859 code sets Examples: 8859 n, l_ n, ISO
- PC code sets Examples: 437, 850, 852

n stands for the numbers 1, 2, 5, 7, or 9. Which code set you should choose depends on which applications will run on the system in the future and which data sets are currently available. For Reliant UNIX and SINIX V5.42

The ISO8859 standard is commonly used for applications.

Example of configuring keyboard parameters:

	alphanumeric emulation	graphical emulation
Terminal emulation	ANSI	x97801
Keyboard type	MF2	MF2
Country-specific keyboard		
English:	En_US.ISO-1	En_US.88591-1
French:	Fr_FR.I_1-1	Fr_FR.88591-1
German:	De_DE.ISO-1	De_DE.88591-1

Proceed as follows:

Ê Enter the parameters for the alphanumeric emulation ([CHOICES] or [F2]).

Ê Save the parameters with [SAVE] or [F3].
Another window appears with the message that the keyboard has been successfully configured.

Ê Close this window with [CANCEL] or [F6].

Ê Enter the parameters for the graphic emulation by selecting the
Change the existing parameters ([CHOICES] or [F2]).

Example of keyboard configuration under SINIX V5.42
(graphic emulation):



Proceed as follows:

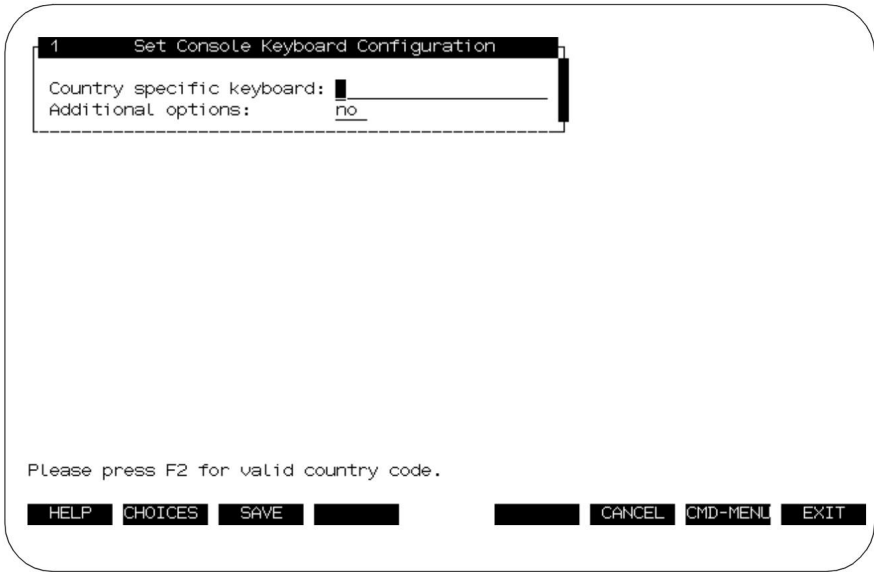
Ê Save the parameters with [SAVE] or [F3].

Another window appears with the message that the keyboard has been successfully configured.

Ê Close this window with [CANCEL] or [F6].

Ê Finish configuring the keyboard with [EXIT] or [F8].

Example of keyboard configuration under Reliant UNIX (graphical emulation):



Notes on the parameters:

Country-specific keyboard Keyboard country variant

The keyboards are country-specific. Use [CHOICES] or [F2] to get an overview of all supported country variants. If you don't know which variant applies to you, you can use [HELP]

or [F1] to request help text. This text contains a mapping of the available variants to the keyboard's model codes. Please refer to the type plate on the underside of the keyboard for this information.

Additional options Additional options

Possible values: *no*, *yes*

If necessary, you can enter *yes* here (using the [CHOICES] function key). This will open an additional menu where you can change some default settings (see the next screen).

Proceed as follows:

• Fill out the form.

• Save the values using the [SAVE] function key.

If you have specified the value *no* for *Additional Options*, please continue reading in the section "Completing the keyboard configuration" on page 66.

Specify additional options

If you have specified the value *yes* for *Additional Options*, you will receive another form:

-----1-----Set Console Keyboard Configuration-----

Country specific keyboard: Germany

Additional options: yes

-----2 Additional options:-----

Display mode: all

Deadkey: disabled

Code set for ANSI: _____

Please press F2 for valid display mode.

HELP CHOICES SAVE CANCEL CMD-MENU EXIT

Notes on the parameters:

Display mode

Display mode

Possible values: *all, alpha, graphic*

The keyboard setting should only apply to a specific display mode. If you want to change the default setting, you can use the [CHOICES] function key.

Deadkey

Dead keys

Possible values: *disabled*, *enabled*

Diacritical marks (e.g., accents) should appear as independent characters (*disabled*) or only in combination with a matching base character (*enabled*). If you want to change the default setting of *disabled*, you can use the [CHOICES] function key .

Code set for ANSI Code set for ANSIPossible values: *88591*, *850*

Here you can specify which PC code table should be used for the ANSI terminal emulation(s). The code table can be based either on the ISO 8859 standard or on the PC industry standard. The 97801 terminal emulation (x97801) generally only supports ISO 8859.

If you want to change the default setting, you can use the [CHOICES] function key .

Proceed as follows:

Ê Fill out the form.

Ê Save the values using the [SAVE] function key.

Complete keyboard configuration

You will receive a message that the keyboard has been successfully configured.

Ê Close this message with the function key [CANCEL].

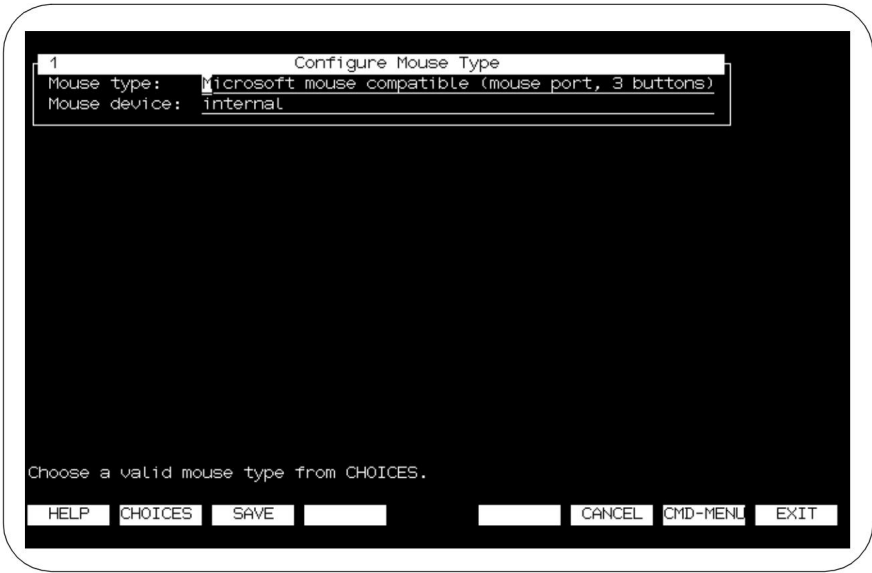
Ê Finish configuring the keyboard with the [EXIT] function key.



The selected settings take effect immediately after the autoboot is complete. An additional reboot is not required. After the autoboot is complete, you only need to add the \$LANG environment variable assign the correct value.

Configure mouse type

Example of mouse configuration:



Notes on the parameters:

<i>Mouse type</i>	Mouse type Choose a Microsoft-compatible mouse with three buttons.
<i>Mouse device</i>	Mouse driver Confirm the default setting <i>internal</i> (round connector = PS/2).

Proceed as follows:

Ê Fill out the form.

Ê Save the values using the [SAVE] function key.

Configure graphics monitor

Example for configuring the graphics monitor under SINIX V5.42:



Notes on the parameters:

Graphics Hardware

Graphics hardware

If you don't have an additional graphics controller installed, select an onboard graphics controller (Cirrus Alpine). If you have an additional graphics controller installed, select an onboard graphics controller type Millenium.

To do this, press the [CHOICES] function key and select an assembly.

Monitor Type

Monitor type

see type plate on the back of the graphics monitor.

Press the [CHOICES] function key.

Graphics Mode

Graphics mode

A mode combines several parameters:

– Resolution

(Width and height of the visible image in pixels),

– Depth (bit/pixel),

– vertical refresh rate in Hertz.

Depending on the size of the monitor, we recommend the following ergonomic settings (e.g. to prevent eye fatigue, etc.)

Resolution:

33 cm (14") monitor: 640x480

35 cm (15") monitor: 800x600

40 cm (17") monitor: 1024x768

50cm (21") monitor: 1280x1024

Default Visual

Standard display:

recommended input: *PseudoColor*

If the Graphics Mode field contains an entry with more than 8 bit/pixel, then the *TrueColor* input should be used.

Start via xdm

Start with xdm

By entering *yes* , the graphical user interface SINIX/windows is started automatically when the system starts.



If you enter *no* in the *Start via xdm* field , the SINIX/windows graphical user interface will not start. Instead, the login will be displayed in ANSI mode.

6 _ software

Example of configuring the graphics monitor under Reliant UNIX:

You'll see a menu with three entries: *Hardware*, *Startup*, and *Extended*. Each of these takes you to a submenu. You **ll need** to configure the hardware, while you can accept the default settings for the other two parameters.

Hardware submenu

1-----X Server Administration-----

→Hardware - Hardware Configuration
Startup - X Display Manager
Extended - Multiscreen Setup

2

Configure Screen 0

Graphics Hardware: Cirrus Alpine PCI 2 MB (CL-GD 5436)
Monitor Type: SNI MCM 1502 35cm color (K323-V3xx)
Graphics Mode: 800x600, 8 bits/pixel, 120.2Hz

Choose a valid graphics hardware type from CHOICES.

HELP

CHOICES

SAVE

CANCEL

CMD-MENU

EXIT

Notes on the parameters:

Graphics Hardware

Graphics hardware

If you don't have an additional graphics controller installed, select an onboard graphics controller (Cirrus Alpine). If you have an additional graphics controller installed, select an onboard graphics controller type Millenium.

Press the [CHOICES] function key and select an assembly.

Monitor Type

Monitor type

Press the [CHOICES] function key .

You will then be presented with a selection list from which you can choose a monitor type. The preferred models are listed first. If your monitor is not included in the list, please consult the monitor's manual to determine the range of horizontal frequencies your monitor can synchronize. Then select one of the "Multifrequency" entries that best suits your needs. *b/w* (black/white) means "black and white" or "monochrome."

Graphics Mode

Graphics mode

Press the [CHOICES] function key and select a mode.

A mode combines several parameters:

- Resolution

(Width and height of the visible image in pixels),

- Depth (bit/pixel),

- vertical refresh rate in Hertz.

Depending on the size of your monitor, we recommend the following resolution:

33 cm (14") monitor: 640x480

35 cm (15") monitor: 800x600

40 cm (17") monitor: 1024x768

50cm (21") monitor: 1280x1024

Proceed as follows:

Ê Fill out the form.

Ê Save the values using the [SAVE] function key .

You will return to the *X Server Administration window*. Depending on whether you want to configure the *Startup* and *Extended* parameters , you can now do the following:

Ê If you want to finish configuring the X server:

Press the [EXIT] function key. Then continue reading the section "Checking the test pattern" on page 74.

or

Ê Select the menu entry *Startup* .

Submenu *Startup*

1-----X Server Administration-----
Hardware - Hardware Configuration
→Startup - X Display Manager
Extended - Multiscreen Setup

2 Other X Server Options
Start via xdm: yes

Enter yes or no.

HELPCHOICESSAVE

CANCELCMD-MENUEXIT

Notes on the parameters:

Start via xdm

Start with xdm

By entering *yes* , the graphical user interface SINIX/windows is started automatically when the system starts.



If you enter *no* instead , the X server will only start when you enter the command *startx &* or *startrx &* from the shell.

This means that you must first log in to the Alpha screen.

Proceed as follows:

Ê Fill out the form.

Ê Save the values using the [SAVE] function key.

You return to the *X Server Administration window*.

Ê Select the *Extended menu item*.

Extended submenu

The screenshot shows a terminal window with the following content:

```

1-----X Server Administration-----
Hardware - Hardware Configuration
Startup - X Display Manager
->Extended - Multiscreen Setup

2 Configuration Options
Number of screens: 4

Fill in the form and then press SAVE.

[HELP] [CHOICES] [SAVE] [ ] [ ] [CANCEL] [CMD-MENU] [EXIT]

```

Notes on the parameters:

Number of screens Number of screens

If you have multiple monitors connected to your computer, you can enter their number here (maximum 4).

Each monitor requires its own graphics card. All monitors are operated with a single keyboard and mouse.

The DISPLAY variable is as follows:

<computer name>:0.0 for the first screen,

<computer name>:0.1 for the second screen (etc.).

Proceed as follows:

Ê Fill out the form.

Ê Save the values using the [SAVE] function key.

You return to the *X Server Administration window*.

Ê Press the function key [EXIT].

Check test image

Finally, a test image will appear. Check whether the displayed colors and grayscale are acceptable and whether the mouse operates correctly.

Server Test Utility
Please try to move the mouse and press some buttons.
Press any key to exit.

Then press any key. You now have to decide whether the graphics parameters are correct.

Mouse and X11 server ok? [y/n] > _

- If the test image is OK and the mouse can be used correctly:

Ê Enter *y* and continue reading at the section "End of the configuration
ization process" on page 75.

- If the test image is not OK:

Ê Enter *n* .

The windows for configuring the mouse and graphics monitor appear again.

Ê Correct the parameters until the test image is OK.

You can also correct the graphics parameter configuration after the installation is complete. For instructions on how to do this, refer to the manual "Installing and Using Reliant UNIX – RM200, RM300, RM400" or the corresponding manual for SINIX V5.42.

End of the configuration process

After you have configured the screen, you will be asked to enter a new system administrator password and confirm with Ü.

You must then repeat the entry.

Please set your system administrator password now
New password:
Re-enter new password:

Afterwards, some messages are displayed, the screen is cleared and the login screen of the graphical user interface is displayed.

Switch between ANSI mode and graphics mode

If you want to switch from graphics mode to ANSI mode (alphanumeric screen display), you must press the key sequence [ALT] [S-Abf] and [H] (German keyboard) or [ALT] [Sys-Rq] and [H] (English keyboard).

You can return to the graphics mode with the key sequence [ALT] [S-Abf] and [F1] (German keyboard) or [ALT] [Sys-Rq] and [F1] (English keyboard).

End of the first boot process

Ê Enter the user ID *root* and confirm with *Ú*.

Ê Then enter a password and confirm with *Ú*.

The password will be requested again for security reasons.

Ê Enter the password again and confirm with *Ú*.

The system then switches to multi-user mode.

If you have an alphanumeric console, you will see the blinking cursor on the command line.

If you have a graphics monitor, the opening screen of
SINIX/windows is displayed.

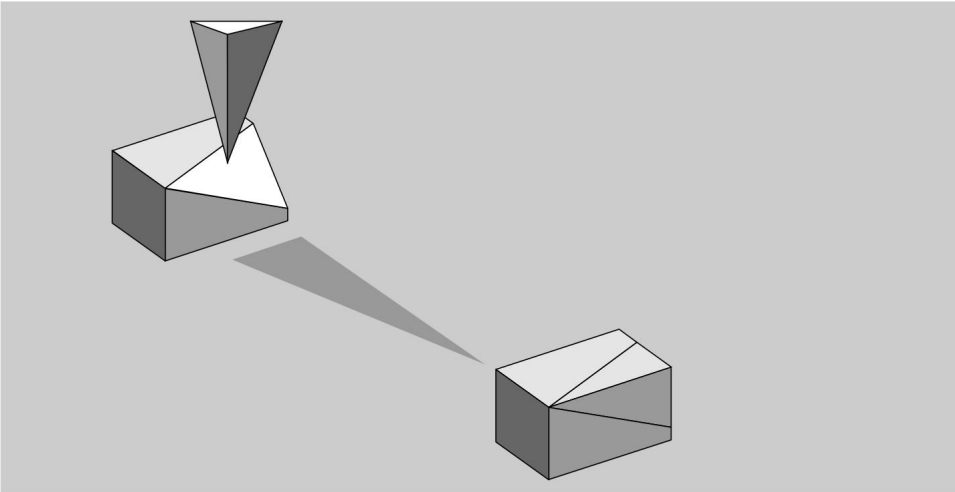
From this point on, your system is ready for use.

You can now begin configuring the connected peripherals, the system, defining printer groups, entering users, and installing software products. Information about this can be found in the manuals listed in the bibliography and in the manuals for the respective products.

However, you also have the option of continuing with the hardware installation until all peripherals are connected. In this case, you must first turn off the system (see section "Turning off the system unit" on page 31) and unplug the power cords. A detailed description can be found in the section "Connecting peripherals" on page 35.

7

Problems and Solutions



Problems booting the system

Problems with the drives

The following pages describe possible problems and provide suggestions for their resolution:

- The first part deals with problems that can occur when switching on and booting the system.
- The second part points out problems that may occur when working with the running works can occur.

Error messages for the operating system and application software can be found in the respective manuals. The "Troubleshooting and Troubleshooting" user manual is recommended as additional literature.

If the recommended measures do not lead to the desired result, try a restart (switch off the system unit and switch it on again after about ten seconds).

If the restart doesn't work, please contact the SNI service. Please log all steps that may have led to the error and all measures you have already taken.

7.1 Problems booting the system

problem	Possible cause	Possible solution
System unit cannot be switched on, POWER LED does not light up	Mains voltage missing	Check that the power plug on the system unit is correctly inserted and check the mains voltage at the socket.
	Power switch off	Power switch on the rear side of the system unit
		If unsuccessful: Contact SNI Service
No output on the screen during the boot process	Screen not turned on	Turn on the screen
	Brightness control adjusted	Change brightness according to Operating instructions for the Screen
During the boot process Error messages on the screen		Turn on again; if error messages persist, contact SNI service
POWER ON/Self-test error output on the console	Hardware errors were detected	Shut down operating system
		ren
		Start boot process
		If error messages remain, see the "Troubleshooting and Troubleshooting" manual

Table 2: Errors when booting the system

problem	Possible cause	Possible solution
Panic output on the console - System crash	Hardware or software errors	Consult the System Administrator's Guide
		After PANIC, you'll be in IKDB (Internal Kernel Debugger) mode. To save the diagnostic dump, enter: IKBC>EX <System output> IKBC>EX This will back up the most important register and memory contents. Restart the system afterward. The data relevant for diagnosis will then be automatically saved automatically in the dump files. See also the "Troubleshooting and Diagnostics" manual.
		If error messages remain, see the "Troubleshooting and Troubleshooting" manual

Table 2: Errors when booting the system

problem	Possible cause	Possible solution
Screen remains dark	Screen not turned on	Turn on the screen
	Screen was automatically darkened	Press any key
	Brightness control adjusted	Change brightness according to Operating instructions for the Screen
	Connection from the System unit to the screen faulty	Check connection between screen and system unit
		Check network connection
		Check if the socket is live
		Check if the power switch (back!) is switched on
	Connecting cable to the stand-standard SVGA Interface connected, although PCI graphics Controller available	Repeat installation; Connection cable of the graphics monitor to PCI-Connect graphics controller ßen
Screen remains dark bright or light, but does not represent any characters or uninterpretable sign	Screen is wrong set	Adjust the screen correctly (Screen operating instructions)
Screen remains dark		Note any error response and notify SNI Service
Entries via the Keyboard not possible	Alphanumeric console: Keyboard cable not plugged in	Establish connection
	Graphics monitor: Connections keyboard and Mouse swapped	Make connections correctly

Table 2: Errors when booting the system

7.2 Problems with the drives

floppy disk drive

problem	Possible cause	Possible solution
Diskette cannot be read	Floppy disk damaged	Insert new disk
	Incorrect disk format Check disk format:	UNIX format: e.g. <i>tar</i> , <i>cpio</i> DOS format: e.g. <i>dosdir a:</i>
Diskette can be not describe	Diskette not formatted	Format floppy disk
	Diskette write-protected Remove write protection	
	Floppy disk damaged	Insert new disk
	Wrong disk type	Choose the correct disk type
Access indicator does not light up	Drive not addressed with correct name	specify the correct drive label
	Drive defective	Contact SNI Service

Table 3: Floppy drive problems

Magnetic tape cassette drive ¹/₄ Customs /

problem	Possible cause	Possible solution
Cassette cannot be read	Flap not closed properly	Close the flap
	Cassette defective	Insert new cassette
	Wrong cassette type	Choose the right cassette type
	Incorrect data format	Choose the correct data format (e.g. <i>tar</i> , <i>cpio</i> ..)
Cassette can be not describe	Flap not closed properly	Close the flap
	Cassette write-protected Remove write protection	
	Cassette defective	Insert new cassette
	Wrong cassette type	Choose the right cassette type

Table 4: Problems with the magnetic tape cassette drive

¹/₄ Customs

7 Problems and Solutions

problem	Possible cause	Possible solution
Cassette rewinds Do not insert back	Cassette defective	Insert new cassette
	Drive defective	Contact SNI Service
Access indicator does not light up	Drive not addressed with correct name	specify the correct drive label
	Drive defective	Contact SNI Service

Table 4: Problems with the 1/4 inch magnetic tape cassette drive

Magnetic tape cassette drives 4 mm

problem	Possible cause	Possible solution
Cassette cannot be read	Cassette defective	Insert new cassette
	Read/write heads dirty	Clean read/write heads
	Wrong cassette type	Choose the right cassette type
	Incorrect data format	Choose the correct data format
	Incorrect device driver	Choose the right device driver
Cassette cannot be written	Cassette write-protected Remove write protection	
	Read/write heads dirty	Clean read/write heads
	Wrong cassette type	Choose the right cassette type
	Incorrect data format	Choose the correct data format
	Incorrect device driver	Choose the right device driver
Access indicator does not light up	Drive not addressed with correct name	specify the correct drive label
	Drive defective	Contact SNI Service

Table 5: Problems with the 4 mm magnetic tape cassette drives

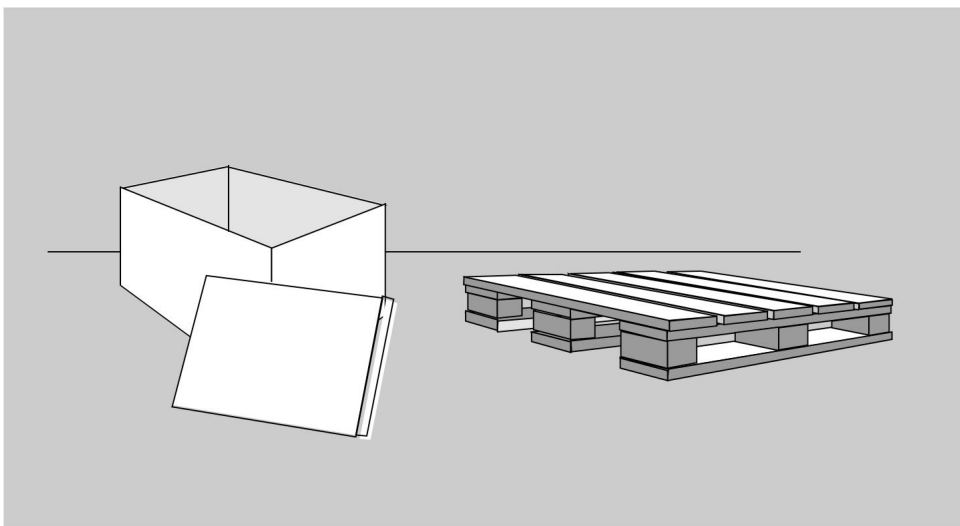
CD-ROM drive

problem	Possible cause	Possible solution
CD-ROM cannot be read	CD-ROM contaminated	Clean CD-ROM
	Wrong drive addressed	Address the correct drive
	CD-ROM is upside down in drive	Insert CD-ROM correctly
Access indicator does not light up	Drive not with correct addressed by name	specify the correct drive name
	Drive defective	Contact SNI Service

Table 6: CD-ROM drive problems

8

Transporting the system unit



Transporting the system unit

Ê Before transporting the system unit, back up all data on the hard disks, as data loss may occur during transport.

For information on how to back up data, see the System Administrator's Guide.

Ê Exit the operating system.

Ê Remove the floppy disk, magnetic tape cartridge or CD-ROM from the drive.
ken.

Ê Switch off the system unit and peripheral devices and unplug
all power plugs.

Ê Check whether the connecting cables are marked so that you can reconnect them to the correct slots.

Ê Disconnect all cable connections.

Ê For safety reasons, transport all devices individually.

Transport the system unit in its original packaging. Be careful not to subject the system unit to shocks, as this could damage the hard disk drive.



When installing the system unit at the new location, make sure that the mains voltage is set correctly.

Transporting the screen

!!

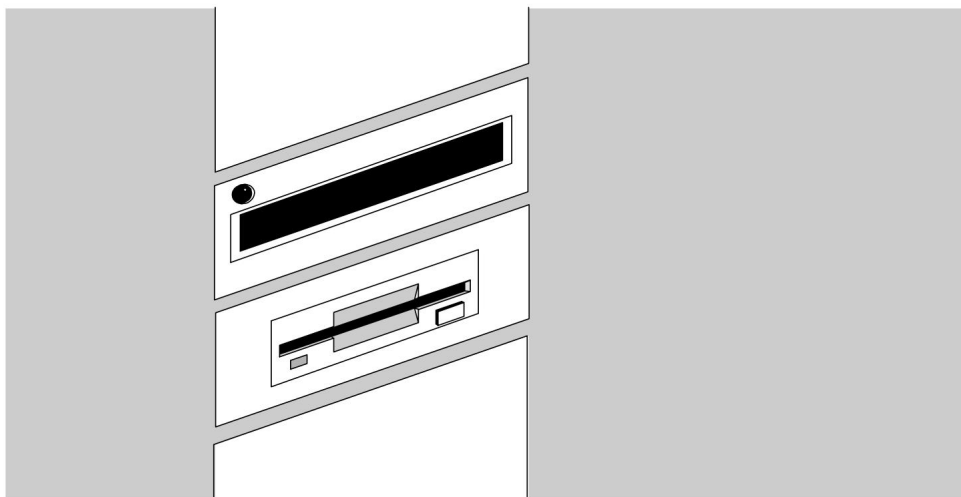
Transport the screen in its original packaging.



Because of the risk of the picture tube imploding, you must protect the screen against mechanical influences.

9

Operating drives



floppy disk drive

Magnetic tape cassette drive 1/4 inch

Magnetic tape cassette drive 4 mm

CD-ROM drive

The drive for 3.5- inch floppy disks is included in the basic configuration. Magnetic tape cassette drives for 1/4 -inch and 4 mm formats, as well as the CD-ROM drive (standard installation medium for Reliant UNIX or SINIX V5.42), are available as options.

The drives are located behind a locking slide and are also switched on when the system is switched on.



You can find all the data storage media you need for your system in the extensive range of accessories from Siemens Nixdorf Plus.

9.1 Floppy disk drive

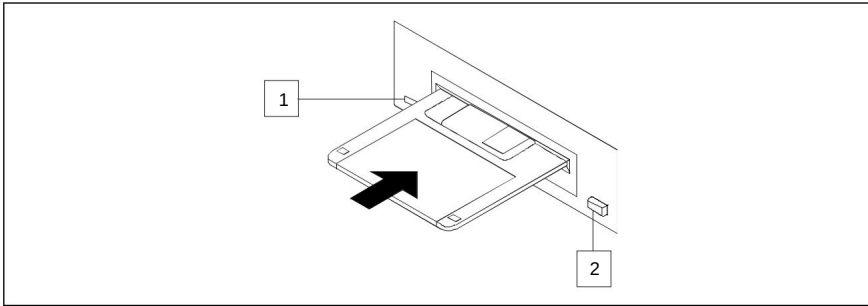


Figure 30: Floppy drive controls

(1) Access display

(2) Release button



While the access indicator **(1)** is lit, the release button **(2)** on the floppy disk drive must not be pressed, as this could damage the floppy disk.

Insert disk

Ê Hold the diskette with the touch protection facing the drive bay and with the round plate in the middle of the diskette facing down.

Ê Push the diskette all the way into the drive until it clicks into place and the Release button pops out.

Remove diskette



The diskette must not be removed while the access indicator on the diskette drive is lit, as this could damage the diskette.

Ê Press the release button.

The disk will now pop out of the drive bay a little and you can pull it completely out of the drive.

9.2 Magnetic tape cassette drive $\frac{1}{4}$

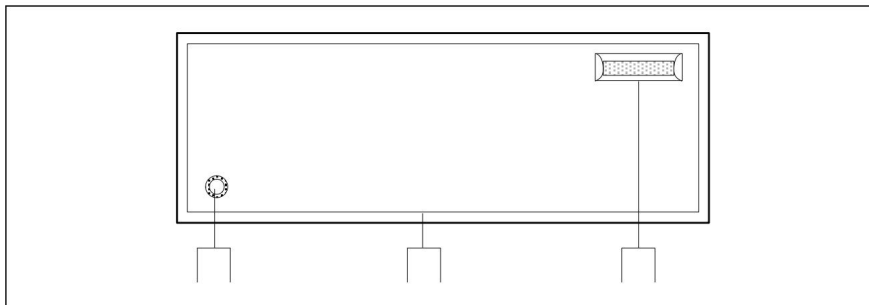


Figure 31: Control elements of the magnetic tape cassette drive

$\frac{1}{4}$ Customs

- (1) Access display
- (2) Drive flap
- (3) Release button



The access indicator lights up whenever the drive is active.

The magnetic tape cassette drive can read and write $\frac{1}{4}$ Customs can be used for cassettes with a capacity data between 155 and 525 MB. Cassettes with a capacity of 60 MB can only be read.

Open drive

You should only open the drive door when inserting or removing a cartridge. Otherwise, the drive should be closed to prevent contamination.



Do not unlock the drive door while the access indicator is lit, as this could damage the cartridge.

Ê Press the release button (3) in the top right corner of the drive cover and open the drive cover as far as it will go.

Close drive

Ê Close the drive by gently pressing on the drive cover.

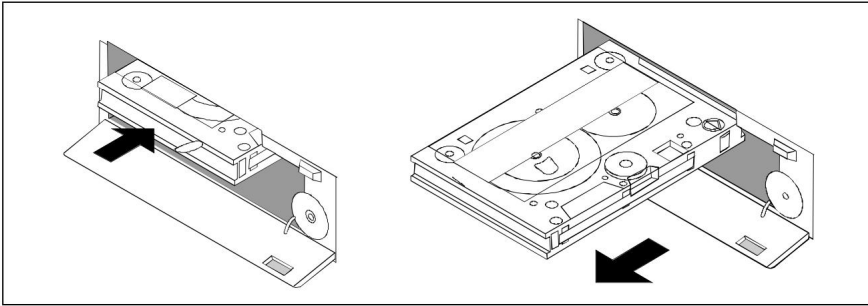


Figure 32: Inserting and removing a 1/4 inch magnetic tape cassette

Insert 1/4 inch magnetic tape cassette

- Make sure that the access indicator is not lit.
- Open the drive cover by pressing the release button.
- Slide the cassette with the metal plate facing down and the tape opening to the right until it stops in the drive bay.



If you feel resistance when inserting the magnetic tape cartridge, you've inserted it incorrectly. Do not force the cartridge into the drive!

- Close the drive cover until the lock clicks into place.

Once the cassette is inserted, the tape is first tensioned, and then the magnetic head is positioned in the drive. When the access indicator goes out, the drive is ready for reading and/or writing.

Remove 1/4 inch magnetic tape cassette



Be sure to wait until the access indicator is no longer lit, otherwise data may be lost.

- Open the drive cover by pressing the release button.
- Remove the cassette.
- Close the drive cover or insert another cartridge and then close the drive door.

9.3 Magnetic tape cassette drive 4 mm

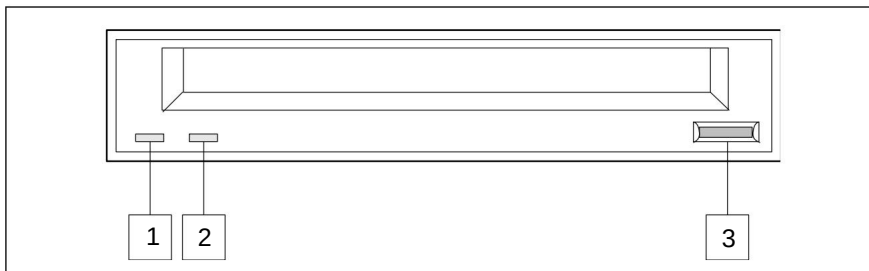


Figure 33: Control elements of the 4 mm magnetic tape cassette drive

- (1) Ready indicator
- (2) Error display
- (3) Release button

The **readiness indicator (1)**

- flashes when the drive self-test is running after the system unit is switched on or when the drive is accessed during operation.
- lights up when a magnetic tape cassette is inserted.
- does not light up if no magnetic tape cassette is inserted.

For a 4 mm tape, relatively long start-up and positioning times are required.

The **error display (2)**

- briefly lights up green after the system unit is switched on. The display expires if the self-test is positive.
- flashes amber when the drive needs to be cleaned immediately must.
- Lights amber when the drive has an error.



Do not press the **release button (3)** while the standby indicator is lit or flashing. Data may be lost.

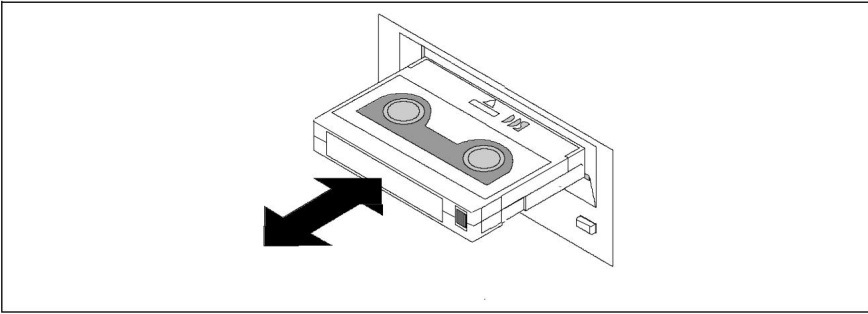


Figure 34: Inserting and removing the 4 mm magnetic tape cassette

Insert 4 mm magnetic tape cassette



Use only 4 mm magnetic tape cassettes bearing the "DDS" (Digital Data Storage) and "MRS IIII" (Media Recognition System) symbols.

Ê Make sure that the standby indicator is not lit or flashing.

Ê Push the magnetic tape cartridge with the viewing window facing upwards into the drive bay until the magnetic tape cartridge is automatically pulled in further.

The magnetic tape cassette is now inserted. The ready indicator (green LED) lights up.

Remove 4 mm magnetic tape cassette

Ê In any case, wait until the ready indicator (green LED) only lights up.

Ê Press the release button to eject the magnetic tape cassette and remove the magnetic tape cassette.



The 4 mm magnetic tape cartridge should only remain in the drive for as long as absolutely necessary. Store magnetic tape cartridges in their original packaging, as this is where they are best protected from dust.

Tips for handling 4 mm magnetic tape cassette drives

- Remove sources of dust and dirt near the system. Paper and toner dust from printers and photocopiers are particularly aggressive.
ern.
- Only insert cassettes into the drives when you intend to use them.
- Only use the magnetic tape cassette drive in streaming mode, ie data is written or read without stopping the magnetic tape.

You can achieve this if

- You perform backups during times of low system usage.
- You specify a block size of 16 Kbytes in the backup command.

This reduces wear on the magnetic head drum and magnetic tapes and also means the drive needs to be cleaned less frequently.

Magnetic tape cassettes can be purchased directly from Siemens Nixdorf Plus (see chapter "Ordering accessories" on page 143ff).

9.4 CD-ROM drive

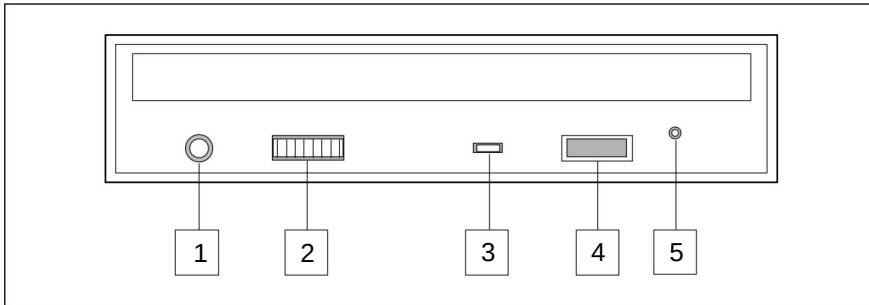


Figure 35: CD-ROM drive controls

- (1)** headphone jack
- (2)** Volume control
- (3)** Access display
- (4)** Release button
- (5)** Emergency removal button (recessed)

Unlike floppy disks and magnetic tape cassettes, CD-ROMs cannot be written to (ROM = Read Only Memory).

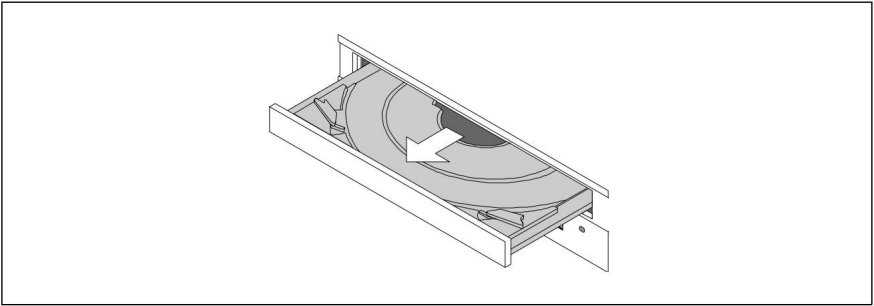


Figure 36: Open the CD-ROM drive tray

Insert CD-ROM

Ê Press the release button.

Ê The drive tray extends automatically and remains in the extended position.

development.

Ê Place the CD-ROM on the drive tray so that the label on the CD-ROM facing up.

Ê Press the release button.

The drive tray will now retract automatically.

Remove CD-ROM

Ê Press the release button.

Ê Remove the CD-ROM.



Please note that removal is not possible if the CD-ROM drive is being accessed or if the drive is connected to another computer.

Ê Press the release button.

The drive tray will now retract automatically.

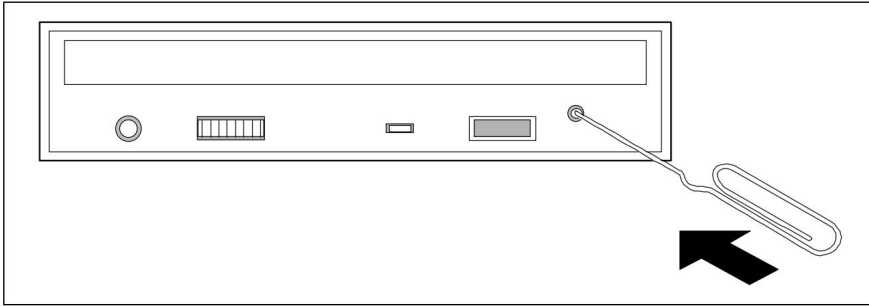


Figure 37: Remove CD-ROM manually

Remove CD-ROM in case of malfunction

If the power fails or the drive is damaged, the CD-ROM may become stuck in the drive.

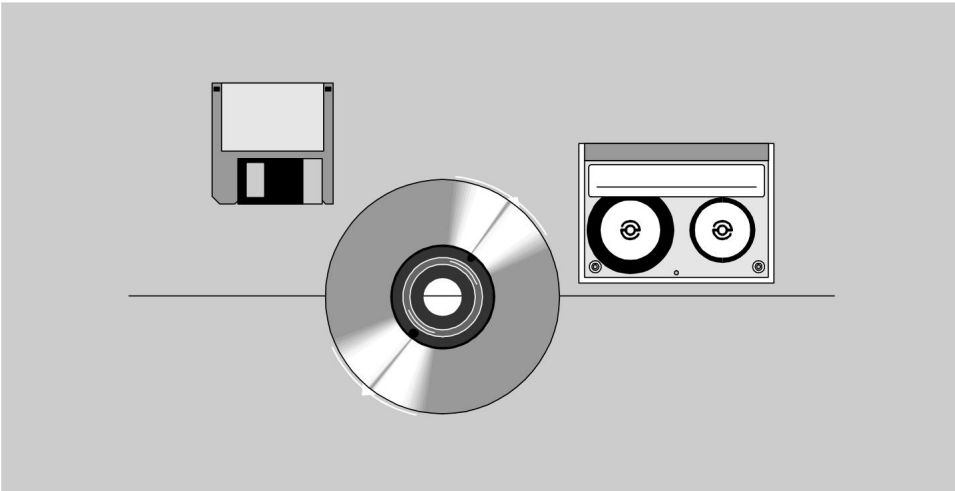
Ê Switch off the system properly.

Ê Insert a hard object of approximately one millimeter in diameter (e.g. a straightened paper clip) into the opening of the emergency removal button
a.

Ê Use this to manually operate the eject mechanism. The drive tray pops out a little. It can now be pulled out by hand.

Dealing with data carriers

10



All data storage media you need for your system can be found in the Siemens Nixdorf Plus range of accessories (see chapter "Ordering accessories" on page 143ff).



All discs come with stickers. First, label the stickers and then stick them on the designated spots on the discs.

10.1 Floppy disks

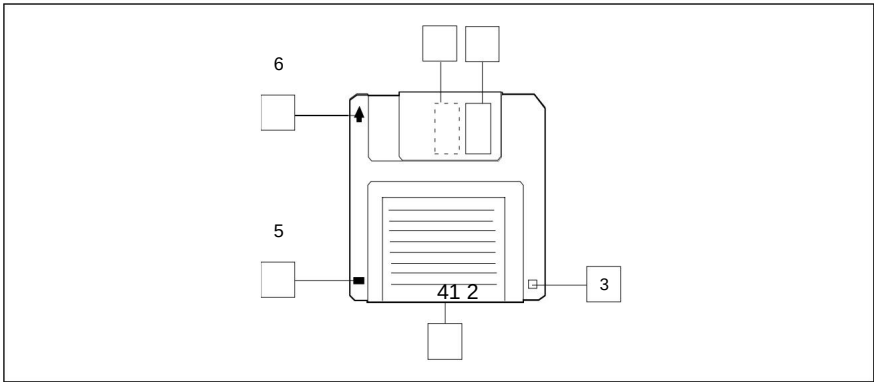


Image 38: 3 $\frac{1}{2}$ inch floppy disk

- (1) Slot for read and write head
- (2) Contact protection
- (3) Hole for automatic detection of an HD (High Density) disk
- (4) Title block
- (5) Write protection mark
Write protection switched on: small rectangular opening open
Write protection off: small rectangular opening closed
- (6) Insertion direction

- Format floppy disks before writing to them for the first time if they are not preformatted. Floppy disks must be formatted in DOS or tar format according to the requirements.
- Do not place floppy disks near magnetic objects, e.g. Speaker.
- Avoid exposure to sunlight or heat. The optimal storage temperature temperature is between +10°C and +52°C.
- Do not bend disks or work with a sharp object.
Pencil, ballpoint pen or eraser.
- Write on the label with a soft felt-tip pen before sticking it on.

10.2 Magnetic tape cassettes

Magnetic tape cartridges (MTCs) are data storage devices for large amounts of data. The system supports 1/4 -inch and 4 mm cartridges.

The 1/4 -inch cassettes are available with capacities of 155 MB and 525 MB, while the 4 mm cassettes have capacities of 4 GB and 5 GB, respectively. These cassettes can be written to in the 5 GB drive in both 5 GB and 2.3 GB modes.

To achieve optimal recording quality, we recommend using the cassettes offered by Siemens Nixdorf Plus. These are precisely tailored to the device's specifications.



Use only SNI-approved magnetic tape cartridges. Other cartridges may cause damage to the drive's magnetic heads.

The lifespan of a magnetic tape cassette depends on how often the cassette is written to and read from and how the cassette is treated.

- 1/4 inch magnetic tape cassettes can be written to approximately 260 times or 130 times be read and described.
- 4 mm magnetic tape cassettes can be written to approximately 500 times or 250 times be read and described.

After this number of runs, a magnetic tape cassette is worn out and should no longer be used.

- Use only magnetic tape cartridges approved by SNI.
- Do not allow cassettes to come into contact with magnetic objects.
- Avoid exposure to sunlight or heat (the optimal storage temperature is between +5°C and +45°C).
- Do not treat cassettes with cleaning agents, solvents or Thinner.
- Avoid rapid temperature fluctuations.
Store cassettes in the operating environment for four hours before use. If cassettes have been exposed to high humidity or high temperatures, they must be stored in the operating environment for at least three to four days. Poorly acclimatized magnetic tape cassettes are difficult to read and will damage the magnetic head.
- Avoid excessive dust build-up (unsuitable environment, e.g. toner dust) and clean the drives regularly.
- Do not leave 4 mm magnetic tape cassettes in the drive for several days.
- Always store cassettes in the carrying case.
- Do not use used tape and cleaning materials.
- Please note that there are special cleaning cassettes for each drive (see also the chapter "Ordering accessories" on page 143ff).

Mechanical write protection for 1/4 inch magnetic tape cassettes

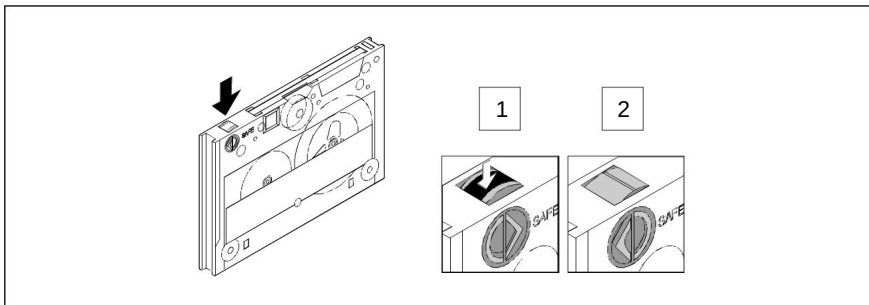


Figure 39: Mechanical write protection of the 1/4 inch magnetic tape cassette

(1) read-only

(2) not write-protected

You can protect magnetic tape cassettes against accidental overwriting or deletion by turning the write lock until the arrowhead points to the **SAFE** position.

Mechanical write protection for 4 mm magnetic tape cassettes

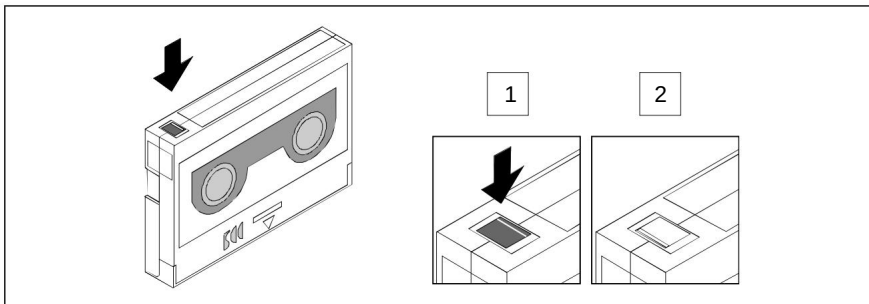


Figure 40: Mechanical write protection of the 4 mm magnetic tape cassette

4 mm magnetic tape cassettes have a write lock. The write lock is activated when the locking slide releases the opening.

(1) read-only

(2) not write-protected

10.3 CD-ROM

Unlike floppy disks or magnetic tape cassettes, CD-ROMs cannot be written with data (ROM = Read Only Memory).

- If the CD-ROM is dirty, you can gently clean the surface with a soft, clean, dry cloth. Never use a damp cloth or any cleaning agents or solvents. Vapors in the vicinity (such as ammonia) can cause damage.

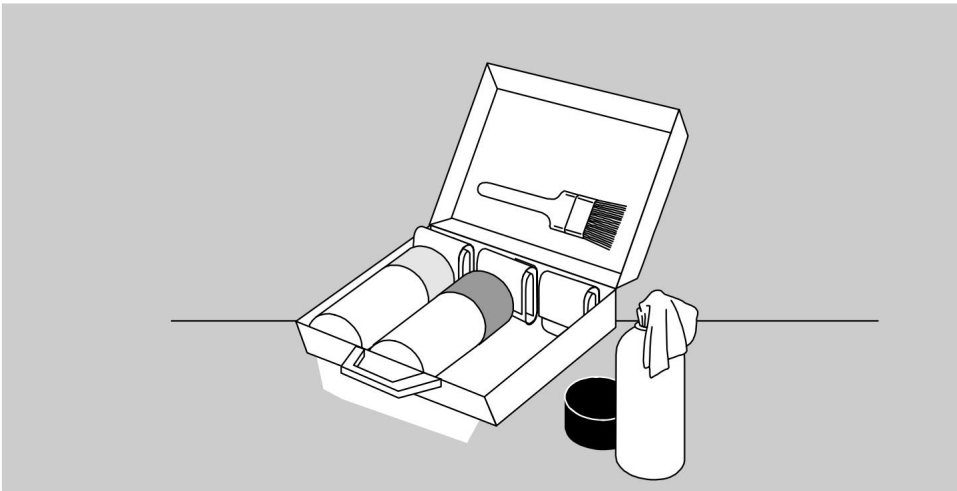
Most hi-fi stores sell special cleaning cloths for CDs.

You can use these without any concerns.

- CD-ROMs cannot tolerate direct sunlight or excessive heat ($> 55^{\circ}\text{C}$). Therefore, never attempt to blow dirt off with a hairdryer. The maximum permissible temperature rise per hour is 15°C .
- Like floppy disks, CD-ROMs should not be bent, written on, or scratched on their surfaces, and should not be damaged by dropping them.

Care

11



Siemens Nixdorf Plus offers a comprehensive cleaning and maintenance program for your system. See the chapter "Ordering Accessories" on page 143ff for the individual products and their corresponding order numbers. more.



Turn off all devices before cleaning and prevent them from being turned on again.

Make sure that no water penetrates into the interior of the device.

Do not use sprays, scouring powders or plastic-dissolving cleaning agents.

11.1 Cleaning the system unit

To clean the housing parts, wiping with a dry cloth is sufficient. For heavily soiled surfaces, you can use a slightly damp cloth with a non-caustic cleaning agent. After using a damp cloth, do not turn the system unit back on until it is completely dry.

You can clean your keyboard and mouse with disinfectant wipes. However, the contact time should not exceed five minutes.



Do not leave these wipes on the housing. The cleaning agent attacks the plastic if left in contact for a long time.

The screen surface should also be cleaned regularly. Use a soft, damp, lint-free cloth, then rub the screen surface with a dry, soft cloth. You can also use special screen cleaning wipes.

11 _ Care

11.1.1 Cleaning the floppy disk drive

Clean the read/write head of the floppy disk drive using the appropriate cleaning disk. Observe the cleaning intervals:

with daily use:	weekly cleaning
for weekly use: at least:	monthly cleaning
	quarterly cleaning

Please note the instructions on the packaging of the cleaning disk.

11.1.2 Cleaning the CD-ROM drive

The CD-ROM drive is easy to maintain and can be cleaned with commercially available cleaning kits if necessary.

11.1.3 Cleaning magnetic tape cartridge drives

The intervals at which cleaning of the magnetic tape cassette drives is necessary depend on the operating time, the quality of the magnetic tapes and the environmental conditions.

Failure to clean or inadequate cleaning increases the read/write error rate and causes faster wear of the tape material and head drums, even burning dirt particles into the head drum. Once particles are burned in, even the use of a cleaning cartridge will no longer help. The drive must be returned to the SNI Service Center for cleaning and inspection.



Always clean the read/write head after using a new tape, as tape abrasion can cause read/write errors.

Magnetic tape cassette drive **$\frac{1}{4}$ Customs cleaning**

Clean the read/write head of the magnetic tape cartridge drive using the appropriate cleaning kit. Observe the cleaning intervals:

 $\frac{1}{4}$ Customs

with eight hours of operation per day:	daily cleaning
for short-term daily operation:	weekly cleaning
for one-time operation per week:	monthly cleaning

Cleaning the 4 mm magnetic tape cassette drive

Clean the read/write head of the 4 mm magnetic tape cassette drive only with the appropriate cleaning cartridge. Observe the cleaning intervals:

with five to six hours of use per day: two cleanings per week

with three to four hours of use per day: one cleaning per week

with a maximum of two hours of use per day: one cleaning every two weeks



If the error indicator flashes, you must clean the drive immediately to prevent damage from dust particles.

The error indicator also flashes if you are processing a belt that already has a too high error rate after proper cleaning.

Please clean again afterwards and make sure that this tape is not used again.

The cleaning process takes approximately 30 seconds in total. If the cleaning cartridge is ejected after a shorter time, the cleaning cartridge is used up. Repeat the cleaning process with a new cleaning cartridge.

With one cleaning cassette you can perform a total of 40 cleanings.

Record each cleaning on the cleaning cassette so you have an overview of how many times you can still use it.

Please note the instructions on the packaging of the cleaning cassette.

11.2 Cleaning SCSI devices

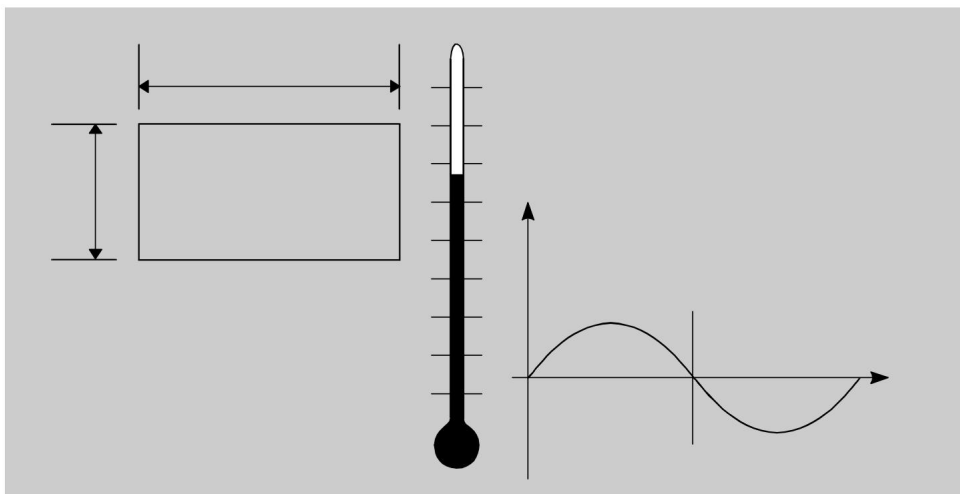
For details on the maintenance of other additional SCSI devices, refer to the operating instructions for the respective devices.

11.3 Cleaning the printer

Since printers have complex mechanics and large amounts of dust accumulate inside during the printing process, regular cleaning is essential. Refer to your printer's operating manual for details.

12

Technical data



Components of the system unit

Basic configurations

Expansion options for the system unit

Electrical characteristics, safety standards and EMC data

Environmental conditions and dimensions

12.1 Components of the system unit

The system unit contains the motherboard with the processor module, the controller, and the power supply. The system unit is equipped with a 3.5 -inch hard disk drive and a 3.5- inch floppy disk drive as standard. Magnetic tape cassette drives for 1/4 -inch and 4 mm formats, as well as CD-ROM drives, can be installed as options.

The following can be connected to the system unit:

- Screens (graphic monitors)
33cm (14"), 35cm (15"), 40cm (17") or 50cm (21")
- Additional terminals
or alphanumeric console screen
- Printer
to the Bitronics, V.24 and LAN interfaces
or at V.11
- Optical storage media
OD (Optical Disk) drives and OD changers
- Modem
- Additional peripherals
such as drives in peripheral boxes, MBK (magnetic tape cassette) changers
or terminal servers and data multiplexers
- Uninterruptible power supply to bridge power outages

12.2 Basic configurations

- System unit consisting of:
 - Motherboard with:
 - 1 x I/O (Input/Output) controller (2 x V.24, 1 x Bitronics, mouse and keyboard interface)
 - 1 x SVGA interface
 - 1 x Ethernet® controller
 - 1 x SCSI-2 (Small Computer System Interface) controller SE (single ended)
 - 1 controller slot via integrated EISA (Extended Industry Standard Architecture) bus
 - 1 controller slot via integrated EISA or PCI (Peripheral Component Interconnect) bus
 - 2 controller slots via integrated PCI bus
 - MIPS® processor R4700 with a clock speed of 133 MHz
 - MIPS® processor R5000 with a clock speed of 180 MHz
 - 3.5 inch floppy disk drive
- and depending on the equipment
- up to 256 MB main memory capacity
 - 1 GB, 2 GB or 4.5 GB hard disk space
 - Screen (graphics monitor) or alphanumeric console screen
 - Keyboard
 - Mouse (for full graphic mode)

12.3 Expansion options for the system unit

The system unit is continuously adapted to market requirements. You can find out about any new features introduced in the meantime from your SNI office. You can have your system unit upgraded with these components at any time through our service organization.



You can find out how to expand the system unit yourself in the “RM200 C Series Technical Manual”.

Please note that extensions are not possible in any combination and that software dependencies may exist. If you require more detailed information regarding possible combinations, please contact your SNI office.

12.3.1 Expanding main memory



When installing memory banks, a maximum of two memory banks of different capacities may be used. Please note that the memory bank with the larger capacity is always installed on the first memory banks.

Expanding main memory by adding memory banks	
Number of memory banks in the system	Max. 4 memory banks
Capacity per memory bank	16, 32 or 64 Mbyte (two different capacities possible)
Main memory capacity of the system unit	32 Mbyte to 256 Mbyte

12.3.2 Additional controllers

This overview is constantly being expanded (technical changes reserved).

– Graphics controller

CG16 2-D/3-D	PCI	High Performance, 2 MB Video RAM expansion by 2 MB (CG20)
CG17 2-D/3-D	PCI	High Performance, 4 MB Video RAM expansion by 4 MB (CG22)

– LAN communication controller

CL13 Fast Ethernet	PCI	10 Mbps
CL16 Ethernet	PCI	10/100 Mbps
CL31 Token Ring™	EISA 4/16	Mbps
CL32 Token Ring™	PCI	4/16 Mbps
CL41 FDDI	EISA single	attached
CL42 FDDI	EISA dual	attached
CL51 ATM	PCI	155 Mbps
CL54 ATM	PCI	25.6 Mbps

– Peripheral controller (SCSI controller)

CS11 CS13	SCSI	EISA differential ended
CS14 SCSI	EISA single	ended, 8-bit
CS19 SCSI	PCI	single-ended, 1 channel, 16 bit
CS20 SCSI	PCI	differential ended, 1 channel, 16 bit

– Terminal controller

CT11 IOPRO		EISA 16	x V.24
CT13 IOPRO		EISA 16	x SS97 or V.11
CT21 TACSI		EISA EISA-Bus Serial Interface Multiplexer (E-SIM)	
CT31 IHSS Multipoint (E-SIH)		EISA 4	x IHSS
CT32 IHSS Multipoint (E-SIH)		EISA 4	x V.24
CT33 IHSS Multipoint (E-SIH)		EISA 2	x IHSS, 2 x V.24
CT40 TC4P		EISA with 4	x V.24, V.11, IHSS, IMD
CT45 TC4		ISA	with 4 x V.24
CT50 TC32		EISA with	max. 32 x V.24, V.11 or IHSS
ITC	Intelligent Terminal Controller	ISA	with 16 x IHSS

– WAN communication controller

CW11 EWAN-L		EISA 1	x X.21
CW14 EWAN-L		EISA 1	x V.24
CW20 EWAN, EWAN-2		EISA 1	x V.24 and X.21 (additional expansion with 2 x V.24 (CW24) or 2 x X.21 (CW21) possible)
CW22 EWAN, EWAN-2		EISA 2	Mbps; 1 x X.21, 1 x V.24
CW32 ISDN-BRI		EISA	additional extension with second S0 interface (CW33) or Fax/Modem (CW34) possible

12.3.3 Expanding hard disk space

3.5- inch hard disk drives with capacities of 1 GB, 2 GB and 4.5 GB are available.

If the 2 GB or 4.5 GB disk with a rotation speed of 7,200 rpm is used, only one disk of this type can be installed.

12.3.4 Optical storage media

component	built-in accessory device	
CD-ROM, 650 MB	X	X
OD drive, 650 Mbyte / 1.3 Gbyte / 2.6 Gbyte		X

12.3.5 Magnetic tape recorders

This list is constantly being expanded (technical changes reserved).

component	built-in accessory device	
MBK drive 4 mm (4 GB and data compression)	X	X
MBK drive 4 mm (2 GB)	X	X
MBK drive 8 mm (5 GB and data compression)		X
MBK drive 8 mm (20 GB and data compression)		X
MBK drive 1/4 inch (525 MB)	X	X
Changer for 6 magnetic tape cassettes 4 mm (24 GB and data compression)		X
Changer for 10 magnetic tape cassettes 8 mm (50 GB)		X

12.4 Electrical characteristics and standards complied with

Electrical characteristics

Nominal voltage/range	100–120 V or 200–240 V (switchable)
Nominal frequency	50 Hz / 60 Hz
Rated current (total system)	120 V/4.5 A; 240 V/2.5 A
Rated current of the output socket 120 V	3 A; 240 V/1.5 A
Power consumption	max. 64 W

Standards adhered to

Electrical safety	EN 60950, UL1950, CSA 22.2 950, IEC 950
Electromagnetic Compatibility FCC Rules, Part 15, Subpart B, Class A	
Certificate according to EC Directive 89/336/EEC (EMC):	
Emitted interference	EN 55022 Class B
Immunity	EN 55082-(2)
ergonomics	ZH1 618
Approvals	GS; UL (USA); cUL(CND); CE conformity

12.5 Approvals of data transmission controllers

The following BZT numbers or certificates of conformity were issued for the WAN (Wide Area Network) data transmission controllers:

Controller Designation	valid certificates of conformity	Testing standards	Object name
EWAN	D/K111661E D/K111669E	NET 1 NET 2	02723
ISDN-CW32	Q116722F		56426.00
EWAN-L V.24/V.28	D/K116006E D/K116008E	NET 2 NET 2	02735.01 02735.01
EWAN-L X.21/X.25	D/K115947E D/K116007E	NET 1 NET 2	02735.00 02735.00

12.6 Environmental conditions

Noise development

Sound power level (LWAd)	5.0 B
Workplace-related Sound pressure level (LpAm)	< 35 dB

Environmental conditions

Climate (limit operating range) temperature Relative humidity	5°C to 40°C 5% to 85%
Climate (transport/storage) temperature Relative humidity	-25°C to 60°C 15% to 98%

Mechanical environmental conditions (DIN EN60721-3)

Operation	Class 3M2
transport	Class 2M2

12.7 Dimensions and weight

Dimensions

	Dimensions in mm (H x W x D)
System unit	110 x 445 x 405
Peripheral box for MBK drives, hard disk drives, OD drive, MBK changer 4 mm	110 x 215 x 405
Peripheral box for magnetic tape device 1/2 inch	222 x 483 x 681
Side cabinet for optical disk library	720 x 375 x 800
Additional housing for MBK (magnetic tape cassettes)-Changer 8 mm	394 x 216 x 445

Ventilation distances

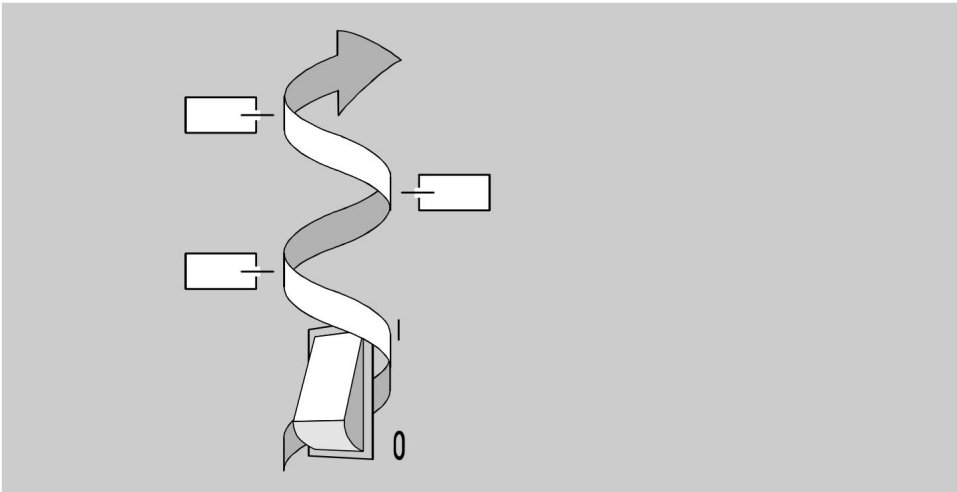
Supply and exhaust air rooms to ensure adequate ventilation	
in front	min. 200 mm
rear	min. 200 mm
left (ventilation slots!)	min. 200 mm

Weight

Weight of the system unit	11.5 kg
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13

Settings



Default settings for screens and printers

Device names of the drives

Addresses for SCSI devices

13.1 Default settings for screens and printers

You can connect a variety of different display units and printers to the system. Detailed information about these peripherals can be found in the accompanying operating instructions. Contact your SNI office to find out which display units and printers are suitable for your system.

Since display units and printers are delivered with default settings, you must adapt these to the system unit interface if necessary.

13.1.1 Configuring the V.24 interfaces

 The designations shown in the tables in this section correspond ^{*} marked to those used in the *Config* user interface. Further information on configuring the interfaces can be found in the manual "System Administration and Hardware Configuration with the SYSADM User Interface" and the manual "Hardware Configuration with Config under SINIX/Windows."

Direct serial interfaces

The two direct serial interfaces can be controlled via the following device files (*Attachment Device column*) :

interface	Attachment Type*	Attachment Device*	Connect-Tor Name*	Major, Minor Dev. No.
CONSOLE/COM1	DIRECT*	MOTHERBOARD*	port_0	128.5
PORT1/COM2	DIRECT*	MOTHERBOARD*	port_1	128.6

Interfaces of the Intelligent Terminal Controllers

The interfaces of the Intelligent Terminal Controller can be addressed using the following names (*Attachment Device* and *Connector Name* columns) after they have been created with *Config* .

interface	Attach- ment Type*	Attachment Device*	Connector Name*	Major, Minor Dev. No.
1. ITC, connector	itc	itc0	C1	128, 10
1. ITC, connector 2	itc	itc0	C2	128, 11
:	:	:	:	:
1. ITC, connector 15	itc	itc0	C15	128, 24
1. ITC, connector 16	itc	itc0	C16	128, 25
2. ITC, connector 1	itc	itc1	C1	128, 26
2. ITC, connector 2	itc	itc1	C2	128, 27
:	:	:	:	:
2. ITC, connector 16	: itc	itc1	C16	128, 41
3. ITC, connector 1	itc	itc2	C1	128, 42
3. ITC, connector 2	itc	itc2	C2	128, 43
:	:	:	:	:
3. ITC, connector 16	: itc	: itc2	C16	128, 57
4. ITC, connector 1	itc	itc3	C1	128, 58
4. ITC, connector 2	itc	itc3	C2	128, 59
:	:	:	:	:
4. ITC, connector 16	itc	itc3	C16	128, 73

Terminal controller interfaces

The terminal controller interface can be addressed using the following names (Attachment *Device* and *Connector Name* column) after they have been created with *Config* .

Example of two installed and configured terminal controllers

interface	Attachment Type*	Attachment Device*	Connector Name*	Major, Minor Dev. No.
1. TC, connector 1 :	tc:	tc0:	unit0_1 :	79, 0-127 :
1. TC, connector 16	tc	tc0	unit0_16	79, 0-127
1. TC, connector 17 :	tc:	tc0:	unit1_1 :	79, 0-127 :
1. TC, connector 32	tc	tc0	unit1_16	79, 0-127
1. TC, plug 33 :	tc:	tc0:	unit2_1 :	79, 0-127 :
1. TC, connector 48	tc	tc0	unit2_16	79, 0-127
1. TC, connector 49 :	tc:	tc0:	unit3_1 :	79, 0-127 :
1. TC, connector 64	tc	tc0	unit3_16	79, 0-127
2. TC, connector 1 :	tc:	tc1:	unit0_1 :	79, 0-127 :
2. TC, connector 16	tc	tc1	unit0_16	79, 0-127
2. TC, connector 17 :	tc:	tc1:	unit1_1 :	79, 0-127 :
2. TC, connector 32	tc	tc1	unit1_16	79, 0-127
2. TC, connector 33 :	tc:	tc1:	unit2_1 :	79, 0-127 :
2. TC, connector 48	tc	tc1	unit2_16	79, 0-127
2. TC, connector 49 :	tc:	tc1:	unit3_1 :	79, 0-127 :
2. TC, connector 64	tc	tc1	unit3_16	79, 0-127

13.1.2 Configuring the Bitronics interface

The Bitronics interface for the system printer can be accessed via the device file `/dev/cpt`.

13.1.3 Default settings for serial console screens

To operate the system, you need either a graphics monitor or a serial display unit as a console. The alphanumeric display unit is connected to the V.24 socket of the first serial interface.

This interface was already configured when the operating system was installed on your system. You still need to adjust the console screen settings to this configuration. Please refer to the operating manual for your display unit for assistance. In addition to the default settings printed here, the displays offer additional, irrelevant settings in the parameter menus.



At the very least, check the line speed setting on your console monitor. For console monitors, the baud rate must be set to 19200. Refer to the monitor's manual for details on how to set the line speed.

Setting the console parameters for the screen type 9766

The console screen must be set to the following values (host interface):

Baud rate:	19200
Parity:	no parity
Character length:	8 bit
Length of stop bits:	1 bit

During the installation phase, the 9766 should be operated in firmware mode (vt220 emulation). In this mode, only the international keyboard is supported.

Via *SYSADM->Software_products* you need to download the following packages from the Install the operating system CD to operate the 9766 in multiscreen mode:

- DPTGUNIT
- CONS (from a secondary terminal, not from the console)

Setting the console parameters for the TC20-V100 screen type

Set the same parameters here as for screen type 9766.

Setting the console parameters for the TC10-V100 screen type

Set the same parameters here as for screen type 9766.

Connecting additional screens

If additional monitor units are connected in addition to the console, the corresponding interfaces must be configured via the *Config* user interface . The parameters specified above must be set for all V.24 interfaces to which monitors are connected. The monitors must then also be adapted to the interface configuration.



If you want to deviate from the above-mentioned standard parameters, you must also adapt the corresponding interface in the operating system to the changed values.

The maximum permissible line speed of the V.24 interfaces (direct and distribution box) is 38,400 baud.

The maximum permissible value for the screen can be found in the operating instructions for the respective device.

The *Config* user interface is available for configuring the interfaces (see the manuals "System Administration and Hardware Configuration with the SYSADM User Interface" and "Hardware Configuration with Config under SINIX/Windows"). You will also find practical examples there.

The following table lists different screen types and their connection options:

Screen	Mother-board	TC		TC IHSS	TACLAN		TACSI Controller (E-Sim)	TC4P			ITC
	V.24 V.24	V.11	MP di-		rect	Modem	direct	V.24 V.11	IHSS	IHSS	
97801-524	X	X	-	-	XX	-					-
97801-502	-	-	X	-	X	-	X	-	X	-	-
97801-VT02	X	X	-	-	XX		X	X	-	-	-
97801-VT01	-	-	X	-	X	-	X	-	X	-	-
9766-M971	-	-	X	-			-	-	XX		
9766-M973	X	X	-	-	XX		X	X	-	-	-
BA80 (V.24)	X	X	-	-	XX		-	X	-	-	-
BA80 (IHSS)	-	-	X	-			-	-	XX		
TC20-V100	X	XX		-	XX		X	XX		-	-
TC20-V801	-	-	X	-	X	-	X	-	X	-	-
TC10-V240	X	X	-	-	XX		X	X	-	-	-
TC10-V110	-	-	X	-	X	-	X	-	X	-	-

Information on connecting the screens can also be found:

- in the chapter "Installing the system unit" on page 23
- in the operating instructions for the respective screen

13.1.4 Default settings for printers with serial connection

The printers suitable for the system can be connected according to the following table.

To ensure smooth data transfer between the respective interface of the system unit and the printer, the printer must be adapted to the configuration of the interface.

Set the following parameters on the printer:

Baud rate:	9600
Parity:	no parity
Character length:	8 bit
Number of stop bits:	1

You can find out how to set these values on the printer in the printer's operating instructions.

The maximum permissible value for the line speed of the V.24 interfaces is 38,400 baud. The maximum permissible value for the printer can be found in the operating instructions for the respective device.

If you want to deviate from these default parameters, you must also adapt the corresponding interface in the operating system to the changed values.
sen.

To configure the interfaces, you can use the *Config* user interface.
available (see the manual "System Administration and Hardware Configuration with the SYSADM User Interface"). Further information on printer operation, administration, and configuration can be found in the "SPOOL V4.2" manuals.

The following table shows you which interfaces the printers can be operated via:

Printer	Mother-board		TC		9766/ BA80	TACLAN		LAN (Ethnic)	TC4P	
	V.24	Centro- nothing	V.24	V.11 MP	V.24 V.11				V.24	V.11
4009-ND10/60 X		X	X	—	X	X	—	— X—		
4011-ND10/60 X		X	XX		X	X	X	—	X	—
4011- N920/970	X	XX—X				X	—	— X—		
9014-11	—	—	—	X	X	—	X	—	—	X
9014-12	—	X	—	—	X	—	—	—	—	—
4812-111	X	X	X	—	X	X	—	—	X	—
4813-110/60	X	X	XX		X	X	X	—	—	—
4819-P10	X	X	XX		X	X	X	—	XX	
4820-P10	X	X	XX		X	X	X	—	XX	
4821-P15	X	X	XX		X	X	X	X	—	—
4824-P20/25	X	X	XX		X	X	X	X	—	—

Setting the default values



In addition to setting the parameters, you must ensure that the printer is set to the default values specified in the printer's operating instructions (DIP (Dual Inline Package) switches, control panel).

13.1.5 Settings for screens for administering CMX

If you want to administer CMX (Communication Management under UNIX®) , you must set the respective screen unit as follows:

Screen type	Operating mode	Keyboard	Shell variable \$TERM
97801-524	97801	Reliant UNIX SINIX V5.42	97801
97801-524	VT220	Reliant UNIX SI NIX V5.42	vt220 or ansi
BA 80/9766	VT220*	ct08/TA31	ba80-08
BA 80/9766	VT220*	ct06/TA28	ba80-06
97801-VT02	VT320	VT	vt02
TC20	97801 VT320 ANSI	97801 VT/MF2 MF2	97801 vt320 ansi-tc20



It is recommended to set the terminals according to the table above.

13.2 Device names of the drives

This section lists the drive-specific device names you can use to access the drives. If you want to execute a write or read command for a data medium, you must specify the device name of the corresponding drive in which the data medium is located. You can use options to determine how the drives are accessed. These options and their meanings can be found after the overview. There you will also learn how to determine the device names.

Device name (autoconf output)	type	Device file name
fd01	floppy disk drive	/dev/at/ftp/rf[0t x3ht x3dt]
HP 88780	MB 1/2 inch 160 Mbytes	/dev/ios0/rstapeXXY[h][n][o]
MC23	MBK 4 mm (Dat, 4 GB)	/dev/ios0/rstapeXXY[h][n][o][c]
MC41	MBK changer 4 mm (Dat, 6 x 4 GB)	/dev/ios0/rstapeXXY[h][n][o][c]
MC43	MBK 4 mm (DAT 2.0 GB)	/dev/ios0/rstapeXXY[h][n][o]
MC10	MBK 8 mm (5 GB and Data compression)	/dev/ios0/rstapeXXY[c][h][n][o]
MC75	MBK 8 mm (20 GB and data compression)	/dev/ios0/rstapeXXY[c][h][n][o]
MC12	MBK 1/4 inch 525 Mbytes	/dev/ios0/rstapeXXY[h][n][o][v]
OS26 (CD-ROM)	CD-ROM (650 Mbytes)	/dev/ios0/sdiskXXYs0
OS28 (CD-ROM)	CD-ROM (650 Mbytes)	/dev/ios0/sdiskXXYs0

Options (in square brackets) for device file names

- c Data compression
- h High density
- n No rewinding
- O No rewinding, stop in block

Determine device name

You can view which devices are installed under the system administrator ID using *XConfig* or *SYSADM* -> *Hardware Configuration* or with the *autoconf* command .

Example:

Ê For example, enter the following command:

```
$ /sbin/autoconf -l | pg
```

This way, the names of the peripheral devices are output as they appear in the overview. Before this name, you will find a portion of the symbolic device name in the *autoconf* output, for example: *ios0/stape006 MC12*.

If you look under *MC12* in the overview, you'll see that this is the name for the 1/4-inch MBK drive. From the *autoconf* output , you'll need to find the bus address and drive address (see example above: Bus Address = 00, Drive Address = 6). You'll use this sequence of numbers (here: 006) in the device file name for read/write commands, instead of the character string *XXY*.

a.

Example:

You want to save a *file* in tar format to your 1/4 inch magnetic tape cassette:

```
$ tar cvf /dev/ios0/rstape006 file
```

13.3 Addresses for SCSI devices

All devices connected to the SCSI SE interface or a SCSI controller (hard disks and other drives) must have a unique address. This address is referred to as an ID (identifier). The IDs of the installed drives are preset at the factory. When connecting external drives, ensure that no duplicate IDs are assigned.



For each device that receives an address, a device name must be assigned in Reliant UNIX or SINIX V5.42. This name must be unique. For information on assigning device names, please also refer to the manual "Installing and Using Reliant UNIX – RM200, RM300, RM400" or the corresponding manual for SINIX V5.42.

Addresses for SCSI devices on onboard controllers

You can use *XConfig* or the *autoconf* command , for example, to display which addresses the SCSI controllers are using.

É For example, enter the following command:

```
$ /sbin/autoconf -l | pg
```

You will find part of the symbolic device name in the autoconf output, for example: *ios0/stape006 MC12*.

The bold number is the SCSI address (ID).



The CD-ROM drive always receives the ID 5. The operating system can also be installed from this drive (boot process).

Floppy drive addresses

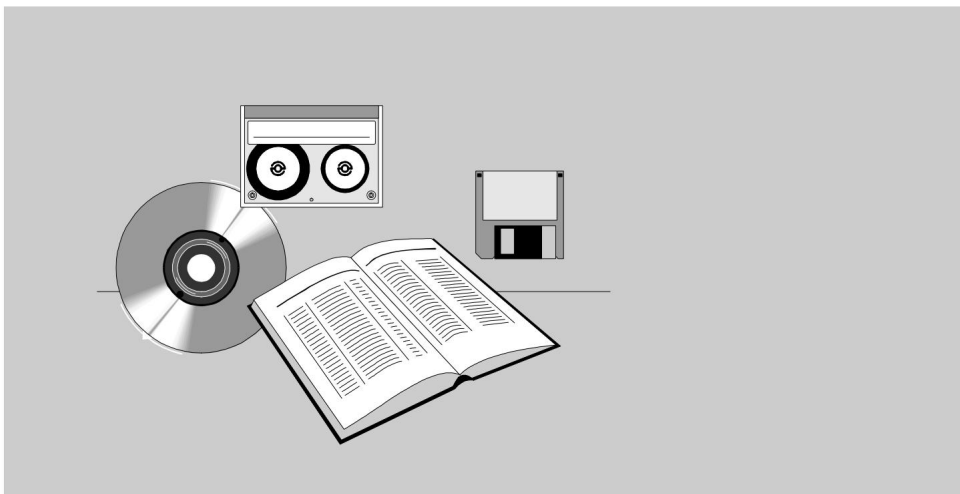
The floppy disk drive in the system unit has its own controller.

Major/Minor Dev. No.	Storage capacity	Device names in Reliant UNIX/ SINIX V5.421
23/116	1.44 Mbytes /dev/at/ flp/ [r]fx3h	

1For some device entries, additional device names have been set up.

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Order accessories



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floppy disks

	Order number
3.5 inch floppy disks unformatted, 1.44 Mbyte	106 0000 3138
3.5- inch floppy disks, DOS formatted, 1.44 MB	106 0000 3139

Magnetic tape cassettes

	Order number
Magnetic tape cassette 1/4 inch, 155 Mbyte	106 0000 3137
Magnetic tape cassette 1/4 inch, 525 MB	106 0000 3141
Magnetic tape cassette 4 mm (90 m), 2 GB	106 0000 3142
Magnetic tape cassette 4 mm (120 m), 4 GB	106 0000 3143

Optical discs

	Order number
Magneto-optical disk, 650 Mbytes	106 0000 3148
Magneto-optical disk, 1.3 GB	106 0000 3150
Magneto-optical disk, 2.6 GB	106 0000 3098

Cleaning sets

	Order number
Cleaning cassette for MBK drive 1/4 inch	106 0000 3332
Cleaning cassette for MBK drive 4 mm	106 0000 3258
Professional cleaning kit for computer equipment (with screen and plastic cleaner, nonwoven cloths, etc.)	106 0000 3259

Cables for peripheral devices

The cables are not included in the scope of delivery of the individual peripheral devices. The following lists show the most common cable types. The designation xx stands for the part of the order number that specifies the length (e.g. M5 = 5 m, C250 = 250 cm).

Cables for monitors and printers

Devices	Cable labeling	Product number
9766 (V.24)	T26139-Y2081-M xx	KB063-M5/-M10
TC10-V24 (V.24)	T26139-Y2052-M xx	KB064-M5/-M15
TC20-V100	T26139-Y2377-M xx	KB168-M5/-M15
Printer V.24	T26139-Y2052-M xx	KB064-M5/-M15
Printer V.24	T26139-Y2094-M xx	KB069-M5/-M15
Printer V.24	95929.0x.7.16	KB005-M5/-M10/-M15
Printer (Bitronics)	T26139-Y1891-V2	KB065-M3

Cable for connection to terminal controller TC4 (P) with V.24, IHSS or V.11 interface

Device type	Cable labeling	Product number
Adapter cable V.24	T26139-Y2107-V1	KB030-C120
TC10-V24	T26139-Y2108-Vx	KB031-M15/-C750
TC20 to adapter cable	T26139-Y2106-M3	KB032-M3
Printer (V.24) on adapter cable	T26139-Y2102-M xx	KB028-M5/-M15
9766 to adapter cable	T26139-Y1309-Mxx	KB078-M7/-M15
Adapter cable for V.11	T26139-Y2221-C120	KB077-C120
V.11 extension cable	T26139-Y457-Vxx	KB068-M15/-M20 /-M30/-M40
V.11 devices on TC4P	T26139-Y2105-Mxx	KB076-M3/-M10/-M30
TC20-V100	T26139-Y2376-Mxx	KB167-M3/-M5/-M10
TC4P to IHSS line	51410.07.0.16	KB191-M5
BA80/9766 to IHSS	T26139-Y2061-Mxx	KB008-M1/-M5/-C250

Connection to terminal controller

Device type	Cable labeling product number	
Adapter cable V.24	T26139-Y2107-C120 KB030-C120	
TC10-V24	T26139-Y2108-Vx	KB031-M15/-C750
TC20 to adapter cable	T26139-Y2106-M3	KB032-M3
Printer (V.24) on adapter cable	T26139-Y2102-Mxx	KB032-M3
9766 to adapter cable	T26139-Y1309-Mxx	KB078-M7/-M15
Adapter cable for V.11	T26139-Y2221-C120 KB077-C120	
V.11 extension cable T26139-Y457-Vxx		KB068-M15/-M20 /-M30/-M40
V.11 devices on TC4 (P) T26139-Y2105-Mxx		KB076-M3/-M10/-M30
TC20-V100	T26139-Y2376-Mxx	KB167-M3/-M5/-M10

Connection to Intelligent Terminal Controller with IHSS

Device type	Cable labeling product number	
ITC to IHSS	T26139-Y2125-V1	KB006-M5
BA80/9766 to IHSS	T26139-Y2061-M xx	KB008-M1/-M5/-C250

Connection to IHSS multipoint controller

Device type	Cable labeling product number	
SW8 to IHSS	90893.00.7.16	KB154-M5
BA80/9766 to IHSS	T26139-Y2061-M xx	KB008-M1/-M5/-C250
SW8R/M to modem	90883.00.4.15	KB156-M5

Connection to TACSI controller (E-SIM)

Device type	Cable labeling product number	
E-SIM to AFP network	T26139-Y1333-V1	KB087-M10
97801-530 to AFP (RJ45) T26139-Y1776-Mx		KB119-M4/-M8
7801-530 to AFP (IHSS) T26139-Y955-Mx		KB145-M4/-M8
TC10-V24 to TAK (V.24) TC10-V110 to TAK (V.11)	T26139-Y970-Mxx T26139-Y457-Vxx	KB146-M10/-M20/-M30 KB068-M15/-M20/-M30/-M40
TC20-V100 to TAK (V.24) TC20 adapter cable (V.24) TC20-V100 to TAK (V.11) TC20 adapter cable (V.11)	T26139-Y2108-Vx T26139-Y2365-V1 T26139-Y2332-Mx T26139-Y2364-C120	KB031-M15/-C750 KB141-C120 KB099-M3/-M5 KB134-C120
PC to TAK (V.24)	93155.0x.8.16	KB003-M5/-M10
9766/PC to TAK (V.24)	T26139-Y2035-M xx KB018	M5/-M10
Printer to TAK (V.24)	95930.0x.7.16	KB022-M5/-M10
Printer to TAK (V.11)	T26139-Y457-Vxx	KB068-M15/-M20/-M30/-M40

Cable for connection to LAN controller

Device type	Cable labeling	Product number
Ethernet connection cable AUI	V45590-A112-A2/-A3/-A4/-A5	KB026-M3/-M10/-M20/-M30
Ethernet connection cable 10BaseT	T26139-Y2425-M xx	KB192-M3/-M6/-M12/-M30/-M50/-M100

14 _ Order accessories

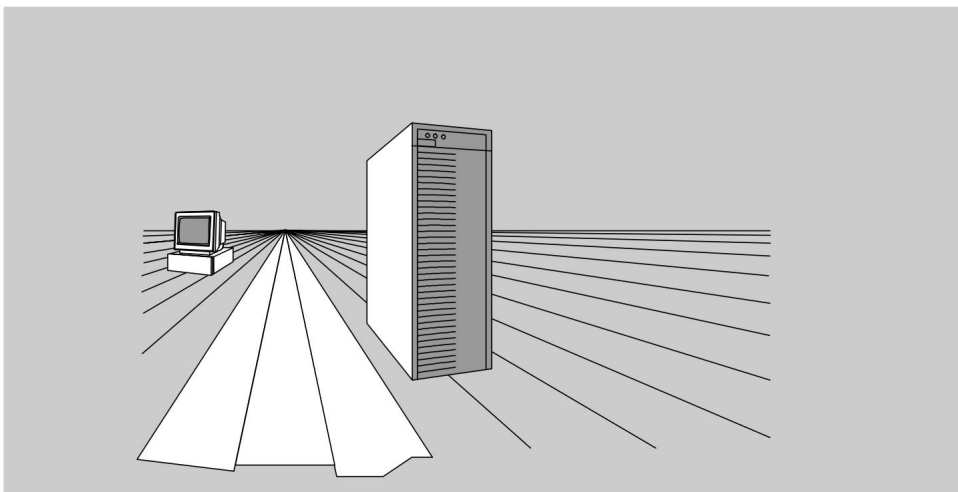
Connection to WAN controller (EWAN/EWAN-L)

Device type	Cable labeling	Product number
V.24 connection cable T26139-Y1517-M xx X.21		KB024-M3/-M5/-M10/-M15
connection cable T26139-Y1013-M x		KB025-M3/-M5/-M7
only EWAN: Adapter cable (1 x V.24 1 x V.11)	T26139-Y2297-M1	KB148-M3/-M6 /-M12/-M30/-M50/-M100
Adapter cable (3 x V.24 1 x V.11)	T26139-Y2298-M1	KB149-M3/-M6 /-M12/-M30/-M50/-M100
Adapter cable (1 x V.24 3 x V.11)	T26139-Y2299-M1	KB150-M3/-M6 /-M12/-M30/-M50/-M100

Cable for connecting peripheral box to system unit

Device type	Cable labeling	Product number
Peripheral box (BG50) SCSI connection cable	T26139-Y2207-x xx	KB044-C35/-M1

Directories



Technical terms

Abbreviations

Pictures

literature

Keywords

Technical terms American National Standards Institute

(ANSI)

An organization that develops and publishes standards to make products compatible (interchangeable or combinable). Comparable to DIN in Germany.

Asynchronous data transfer

A transmission method in which synchronization is established between the transmitter and receiver for a sequence of bits. Start and stop bits form the beginning and end of a character. The time intervals between the transmitted characters can vary. This transmission method is also known as start/stop transmission.

Asynchronous transfer mode (ATM)

ATM is a method for high-speed data transmission in both LAN and WAN areas. Data is transmitted in data cells with a fixed size of 53 bytes. This method can be used on various cables (fiber optic, copper cable). Different transmission speeds (e.g., 155 Mbit/s or 25.6 Mbit/s) are possible.

Screen unit

A display unit consists of a screen, keyboard and cables (see also *terminal*).

Bitronics interface

The Bitronics interface enables bidirectional communication between the system and printer. It is based on the Centronics interface standard, but transfers data faster than this interface. Printers with a *standard Centronics interface* can also be operated via the Bitronics interface.

Boot process

Turning on or starting up a computer on a daily basis and loading the operating system is also known as the boot process.

bus

A (computer) bus is part of a system consisting of several parallel lines and corresponding connectors. This system is used to transmit signals, data, and supply voltages. A bus refers to the busbar-like lines for control signals in a central processing unit or microprocessor. All devices or systems connected to the bus can, in principle, receive any transmitted signal or character if these signals or characters are addressed to that device.

Cache

A buffer memory with very short access times between the main memory and the other parts of the *central unit* is called a cache. It is used to shorten access times to the main memory. It also serves to accelerate access times to *peripherals*.

Central Processing Unit (CPU)

See *central unit*.

Centronics interface

The Centronics interface enables 8-bit parallel *data transmission* to the system printer.

Controller

A controller is an intelligent control unit for *peripheral devices* or data lines. It more or less independently controls the data input or output between the central processor and a peripheral device.

Data transfer

Data transmission is the exchange of data via cable connections between systems that are geographically separated from one another.

Data transmission is used wherever transporting data on data carriers (e.g. magnetic tape, floppy disk) is not possible due to time constraints.

Electromagnetic compatibility (EMC)

Every electrical device emits and is also affected by electromagnetic interference. Electromagnetic compatibility is achieved when certain limits are observed. These limits are defined in EC Directive 89/336/EEC "Electromagnetic Compatibility (EMC)."

Ethernet

This local network was developed in 1979 by DEC®, Intel® and Xerox®. As one of the first LANs, it became the de facto standard and was adopted by the IEEE as a standard. Currently, Ethernet is the most widely used local area network; transmission occurs over a yellow coaxial cable, the so-called "yellow cable" (also known as 10 base 5).

Fan-Out Unit

A fan-out unit is an interface multiplier. Using a fan-out unit, the system can be connected to a LAN.

FDDI

FDDI is an interface to a network standard using fiber optic cables as the transmission medium, with transmission speeds of up to 100 Mbit per second. This network requires two fiber optic pairs through which the signals are transmitted in opposite directions. FDDI is based on an ANSI standard and, due to its high data throughput, can be used as a connection between individual Ethernet segments.

Hard disk drive

Data sets are stored on an external storage medium that can hold large amounts of data and ensures fast access. This storage medium contains one or more continuously rotating magnetic disks. Read/write heads transfer data to or from the magnetic disk.

Firmware

Once you turn on the system, the firmware starts automatically. It checks the hardware and logs the results to the console. After this basic system initialization, the firmware monitor starts. The firmware monitor has commands for system configuration that are available even if the operating system has not yet been loaded.

High Availability (Height Availability)

High system availability means that errors that could lead to interrupted system operation are avoided or circumvented by the system through automatically initiated measures. High availability, for example, refers to a system configuration consisting of two or more systems that operate with one or more shared peripheral cabinets. If one system fails, the system switches over to the second system and continues working with the same data. This minimizes downtime for the entire system, resulting in high availability.

Institute of Electrical and Electronics Engineers (IEEE)

A standardization body for electrical and electronic standards.

IHSS multipoint controller

The IHSS multipoint controller enables the connection of up to four *display units* to one IHSS line (up to 2000 m in length). The maximum *synchronous data transmission* speed is 64 kbit per second. Secure *data transmission* is achieved through an HDLC (High Level Data Link Control) procedure .

In-house interface (IHSS)

An in-house interface is an interface within a local network. It enables the connection of *peripheral devices* via standard telephone cabling.

configuration

Configuration refers to the hardware composition of a system. The predefined basic configuration can be expanded to the full (maximum) configuration.

console

Refers to the *screen workstation* through which a computer system can be operated. The console displays all system messages and allows the user to manage the computer system. A color monitor can also function as a console.

Local Area Network (LAN)

A LAN is a local network of several – even different – systems within a local area that use common resources.

magnetic tape cassette

In the magnetic tape cartridge, the magnetic tape is protected from dust and mechanical damage by a housing. Handling, especially insertion into the drive, is also made easier. Magnetic Tape Cartridges 1

are used in the formats 4 inches, 4 mm and 8 mm.

modem

A modem (modulator-demodulator) is a data transmission device that converts digital data signals into analog signals and vice versa. This adapts data signals to DC-impermeable transmission paths. In public telecommunications networks, modems are provided by the postal service and delimit the postal service's area of responsibility from the user. The modems have internationally standardized interfaces for connecting the data terminal equipment.

OD drive

The OD drive is a multifunctional drive for the magneto-optical media *WORM* and *ROD*.

OD changer

An OD changer is a fully automated disk changing subsystem for *WORM* and *ROD magneto-optical media*. Access to the disks is software-controlled.

Open Systems Interconnection (OSI)

An interface standard for communication between systems from different manufacturers.

OSI Ethernet protocols

A reference model for a network developed by ISO. It defines the interface standards for the hardware and software requirements of different manufacturers.

Periphery

The entire collection of devices connected to a system is referred to as peripherals. A distinction is made between external and internal peripherals.

Rewritable optical disc (ROD)

The rewritable optical disc (ROD) is another optical storage medium besides the CD-ROM (also called MO or magneto-optical disc). However, the ROD disc can be erased and rewritten.

SCSI controller

A SCSI controller is used to connect *peripheral devices* such as hard disk drives, MBK drives and changers, OD drives and changers, and CD-ROM drives to the system.

Serial interface

Interface for serial data transmission. All bits are transmitted sequentially over a single line (see also *V.24 interface*, *X.21 interface*).

Streaming operation

An MBK drive operates in streaming mode when data is written or read without stopping the magnetic tape.

Start/stop operation

When the MBK drive operates in start/stop mode, the magnetic tape is repeatedly paused during read/write operations. However, the magnetic head drum continues to rotate continuously. This significantly increases wear on the magnetic head drum and the magnetic tapes compared to *streaming mode*.

Synchronous data transmission

Data bits are transmitted from the sender to the receiver at precise time intervals. This eliminates the need for start and stop bits. The time intervals are set by transmitting synchronization characters before the actual *data transmission*. Synchronous transmission is faster and more efficient than *asynchronous transmission*.

System unit

The system unit is the *central unit* of the system. This includes the system cabinet, the processor module, the *controllers*, and the peripheral devices installed in the system cabinet.

terminal

Terminal is another term for a *display workstation* or *screen unit*. It is the end point in a data transmission system, designed to receive or send data, or both. It consists of a screen and a keyboard.

Terminal connection concentrator (TAK)

This connection box for the TACSI connection concept allows screens and printers to be connected to the *system unit*.

Thick Ethernet

Thick Ethernet (also called 10 base 5) is the conventional *Ethernet* which uses the "yellow cable" as a transport medium. This Ethernet variant allows for a greater length of cable segments than *Thin Ethernet*.

Thin Ethernet

Thin Ethernet (also called *Cheapernet* or LAN 10 base 2) is a low-cost variant of Ethernet. It differs from the latter in that the cable segments are shorter. Compared to "Yellow Cable," Thin Ethernet uses a cheaper and lighter coaxial cable and BNC T-connectors for mechanically connecting the stations.

Transceiver

The word transceiver is a combination of the words transmitter and receiver and refers to a transmitting/receiving device. The transceiver forms a station's network access to the *Ethernet*. The transceiver performs the following functions: forwarding, monitoring (collision detection), receiving, and interference detection.

Twisted pair

Twisted pair (also called 10baseT, where T stands for twisted pair) is a cost-effective Ethernet variant. It differs from *thin Ethernet* in that the cable segments are even shorter. Twisted pair uses a twisted pair as the transport medium.

Uninterruptible power supply (UPS)

A UPS system is connected upstream of the system's mains supply. It supplies the system with a consistent voltage regardless of the mains supply. This largely protects the system from power outages, voltage dips, and voltage spikes.

V.24 interface

The V.24 interface is a *serial interface* for the functions and electrical properties of the lines between data terminal equipment and data transmission equipment. Information on the electrical values of the interface line is contained in CCITT Recommendation V.28.

Wide-area network (WAN)

A network with a larger range than a LAN is called a WAN.
A WAN usually extends beyond a property and is operated via Telekom facilities.

Changer

A changer, also called a disk or MTC changer, is a device that can access more than one data carrier on a storage medium under software control. This allows the capacity of a data carrier to be multiplied. Changers for *ROD* and 8 mm *magnetic tape cartridge* media are available for this system.

WORM

The WORM (Write Once Read Many) disk is another optical storage medium alongside *ROD* and CD-ROM (also called MO disk or Magneto-Optical Disk). Unlike the *ROD*, the WORM disk can only be written to once.

X.21 interface

CCITT recommendation (Comité Consultatif International Télégraphique et Téléphonique) for interfaces between data terminal equipment and data transmission equipment for synchronous procedures in public data networks.

Central unit

The central unit of a computer consists of several components that carry out *data transmission* as well as logical and arithmetic operations.

Abbreviations

ANSI	American National Standards Institute
AT	Advanced Technology
ATM	Asynchronous Transfer Mode
AUI	Attachment Unit Interface
BBU	Battery Backup Unit
BMPT	Federal Ministry of Posts and Telecommunications
BNC-T	bayonet standard connector
BZT	Federal Office for Telecommunications Licensing
CCITT	Comité Consultative International Télégraphique et Téléphonique
CDE	Common Desktop Environment
CD-ROM	Compact Disc Read Only Memory
CE	European Community
CMX	Communication Management under UNIX
CPU	Central Processing Unit
CSA	Canadian Standards Association
CTR	Controller
CTRL	Control key
DAT	Digital Audio Tape
DDS	Digital Data Storage
DF	Differential (SCSI interface)
DIP	Dual Inline Package
ECC	European Certification Coordination Committee

— Abbreviations

EEC	European Economic Community
EISA	Extended Industry Standard Architecture
ETUC	Electrostatically sensitive components or assemblies
EMC	Electromagnetic Compatibility
EN	European standard
ESD	ElectroStatic Discharge
E-SIH	EISA-Bus Serial Interface Multiplexer Inhouse
E-SIM	EISA-Bus Serial Interface Multiplexer
EWAN	EISA Wide Area Network
FCC	Federal Communications Commission
FDDI	Fiber Distributed Data Interface
GB	Gigabyte
GCR	Group Coded Recording
HD	High Density
HDLC	High Level Data Link Control
ID	ID
IEC	International Electronical Conference
IEEE	Institute of Electrical and Electronics Engineers
IHSS	In-house interface
IHSS-MP	in-house multipoint (controller)
IMD	In-house multiplexer data line
I/O	Input/Output
ISA	Industry Standard Architecture

ISDN	Integrated Services Digital Network
ISO	International Standardization Organization
ITC	Intelligent Terminal Controller
KB	kilobyte
LAN	Local Area Network
Mbyte	Megabyte
MBK	magnetic tape cassette
MRS	Media Recognition System
NET	Norme Européenne de Télécommunication
NTFS	New Technology File System
OD	Optical Disk
OSI	Open Systems Interconnection
PCI	Peripheral Component Interconnect
PE	Phase Encoding
PROM	Programmable Read Only Memory
QIC	Quarter Inch Cartridge
RAID	Redundant Arrays of Independent Disks
RISC	Reduced Instruction Set Computers
ROD	Rewritable Optical Disk
SC	Secondary Cache
SCSI	Small Computer System Interface
SE	Single-ended (SCSI interface)
SLC	Second-level cache

— Abbreviations

SNA Systems Network Architecture (IBM)

SNI Siemens Nixdorf Information Systems

SMC Streaming Mode Cassette

STP Shielded Twisted Pair

SVGA Super Video Graphics Adapter

TACSI terminal connection concept SINIX

TAK Terminal connection concentrator

TC Terminal Controller

TCP/IP Transmission Control Protocol/Internet Protocol

TS Teleservice

UL Underwriters Laboratories

UPS Uninterruptible power supply

UTP Unshielded twisted pair

VDE Association of German Electrical Engineers

VESA Video Electronics Standards Association

VGA Video Graphics Adapter

VT Video Terminal

WAN Wide Area Network

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literature

The following manuals are supplied with your system unit in addition to this operating manual:

RM systems
Safety instructions

Reliant UNIX 5.43
Technical Manual RM200 C-Series

and - depending on the operating system used - either

Reliant UNIX 5.43
Installing and using Reliant UNIX – RM200, RM300, RM400
Installation instructions

or

SINIX V5.42
Installing and operating SINIX – RM200, RM400
Installation instructions

The following manuals are recommended as further and in-depth literature:

SINIX V5.43 or SINIX V5.42
User Guide
User manual

Reliant UNIX 5.43
Commandos, Vol. 1/2
User Reference Manual

SINIX V5.42
Commandos, Vol. 1/2/3
User Reference Manual

Reliant UNIX 5.43
Guide for system administrators
User manual

SINIX V5.42
Guide for system administrators
User manual

Reliant UNIX 5.43

System Administrator's Reference Manual, Vol. 1/2

SINIX V5.42

System Administrator Reference Guide

Reliant UNIX 5.43

Network management

System Administrator's Guide

Reliant UNIX 5.43

Network Reference Manual

Reliant UNIX 5.43

**System administration and hardware configuration with the user interface
SYSADM**

System Administrator's Guide

SINIX V5.42

**System administration and hardware configuration with the user interface
SYSADM**

System Administrator's Guide

SINIX V5.43

**Hardware configuration with Config under SINIX/windows
RM200, RM400, RM600**

Product manual

SINIX/windows V3.0

Documentation Overview

SINIX/windows User Environment V3.0

Introduction to operation and configuration

(SINIX Desktop)

User manual

SINIX/windows User Environment V3.0 **User**

Guide

(Common Desktop Environment)

User manual

SINIX/windows User Environment V3.0 **Guide for**

Experts and System Administrators

(SINIX Desktop)

System Administrator's Guide

SINIX/windows User Environment V3.0

Guide for experts and system administrators

(Common Desktop Environment)

System Administrator's Guide

SINIX/windows User Environment V3.0 **Clients**

for Reference *(SINIX Desktop)*

Reference Manual

SINIX/windows User Environment V3.0 **XDCL**

Desktop Configuration Language

(SINIX Desktop)

Reference Manual

RAIDmaster

Guide for system administrators

(Sinix/ Windows NT)

User manual

SPOOL V4.2 (SINIX)

Guide for users and administrators

SPOOL V4.2 (SINIX)

Menus

SPOOL V4.2 (SINIX)

Reference Manual

TACLAN

TACLAN-ADM863 Administrator's Guide

SINIX, IRIX

SINIX (LVS) licensing procedure

OLR hard disk unit

Operating instructions

RM 19-inch rack

Operating instructions

Magnetic tape cassette drive 8 mm 2.3/5.0 Gbyte

SIDATA installation instructions

Operating instructions

Reliant UNIX 5.43

Troubleshooting and troubleshooting

User manual

Peripheral box for SCSI devices

Operating instructions

Optical Disk Library PXM0 - OS 30/31/32
PXM0 - B 10/11/12

Order from manuals

The listed manuals and their order numbers can be found in the Siemens Nixdorf Informationssysteme AG *catalog of printed publications* . Newly published titles can be found in the *New Publications section*.

You will receive both publications regularly if you are added to the corresponding mailing list. Please contact your local office for more information. You can also order the manuals there.

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