BEETLE /SX

Modular POS System

User Guide

Edition April 2010

Linux™ is a registered trademark of Linus Torvalds
Pentium™ is a registered trademark of the Intel Corporation
MS-DOS™, WEPOS™ and Windows XP™ are registered trademarks of the Microsoft Corporation
uDiskOnChip™and uDOC™ are registered trademarks of the M Systems Flash Disk Pioneers, Ltd.
BEETLE™ is a registered trademark of Wincor Nixdorf International GmbH

Copyright© Wincor Nixdorf International GmbH, 2010

The reproduction, transmission or use of this document or its contents is not permitted without express authority.
Offenders will be liable for damages.
All rights, including rights created by patent grant or registration of a utility model or design, are reserved.
Delivery subject to availability; technical modifications possible.

Contents

Manufacturer´s Certification 1
Tested Safety 1
FCC-Class A Declaration 1
Note on the laser 2
Important notes 2

Introduction 4
About this manual 5
Care of the BEETLE /SX 5
Recycling the BEETLE /SX 5
Warranty 7

BEETLE /SX- the individual POS System 8
Overview 8
- BEETLE /SX Peripherals 9
- BEETLE /SX in a network 10

Before switching on the System 11
- Unpacking and checking the System 11
- Setting up the device 12
- Vertical installation of the equipment 12

Cabling of the BEETLE /SX 14
Securing the data cable 15
Mounting the cable cover 16
Connecting to the Mains Power Supply 17
Disconnecting cables 18
Basic settings 20
Adjusting the loudspeaker 20
Light emitting diode (LED) 20
Connecting Peripherals 21
- Keyboard (KYBD) 21
- Cash drawer 22
- Scanners and scales (COM1, COM2* - COM4*) 22
- Customer or Cashier display (COM2* - COM4*) 23
- Monitor 23
- TFT - LCD Display 24
- Connecting standard PC peripherals (COM1) 24
- Network 24
- Modular printers 25
- USB (Universal Serial Bus) 25
- RJ10/RMT jack (optional) 26

BEETLE /SX- the Components 27
Overview 27
DVD Drive (Option) 29
General 29
Operating the Drive 29
Notes 29
Power Supply Unit 30
I/O Hub (Option) 31
Securing the USB Cable 32
2.5" SSD (Option) 33
Changing a Solid State Drive (SSD) 33
3.5" Hard Disk (SATA) 38
Changing a Hard Disk 38

Configuration variants 41
Submodules for the Motherboard 41
CRT- or TFT- adapter 41
Installing the submodules and adapters 41
PCI plug-in cards 43
Installing an expansion card 43

Starting up the system 46

Appendix 48
Technical data for the BEETLE /SX 48
Interfaces 49
Power Supply 50
I/O- Hub 50
Connections 51
Standard 51
Total Current Consumption of Interfaces 53
Wall Mounting 54
BEETLE /SX 54
Power Supply 55
I/O Hub 55
Glossary 56
Abbreviations 58

Manufacturer´s Certification

The device complies with the requirements of the EEC directive 89/336/EEC with regard to ‘Electromagnetic compatibility" and 73/23/EEC “Low Voltage Directive”.

Therefore, you will find the CE mark on the device or packaging.

Tested Safety

The POS system has been provided with the symbol for “Tested Safety”.

In addition, the BEETLE has received the UL symbol and cUL symbol.

FCC-Class A Declaration

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful inter-ference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not authorized by the manufacturer may void users authority to operate this device. This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe A est conforme à la norme NMB-003 du Canada.

Note on the laser

If your device is equipped with a DVD drive, the following condition applies:

The DVD drive contains a light-emitting diode (LED), classified according to IEC 825-1:1993:LASER CLASS 1; it must not be opened.

Important notes

The modular POS system BEETLE /SX conforms to the current safety standards for data processing equipment.

- If this device is taken from a cold environment into the operating room, moisture condensation may form. The device must be absolutely dry before being put into service; an acclimatization period of at least two hours must therefore be observed.
- This device is equipped with a safety-tested power cable and may be connected only to a prescribed grounded-contact power socket.
- When setting up the device, ensure that the power socket on the device and the grounded-contact power socket are easily accessible.
- To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug of the power supply.
- Ensure that no foreign objects (e.g. office clips) find their way into the device, as this may lead to electric shocks or short-circuits.
- Never plug in or unplug data communication lines during thunderstorms.
- Protect devices from vibrations, dust, moisture and heat.
- Always dispose of used parts, such as batteries, in an environmentally safe manner.
- The ventilation slots of the power supply must remain unobstructed to ensure sufficient ventilation of the equipment. If the equipment is to be fitted, you must ensure that the specified minimum distances are maintained and constant ventilation is provided.

- In emergencies (e.g. damaged housing or damaged power cable, penetration by liquids or foreign bodies), the device must be switched off immediately, the power plug disconnected and the Customer Service of Wincor Nixdorf or your dealer must be notified.

- The lithium battery must be disposed of in accordance with local regulations for special waste. In case of an improper change of the lithium battery it exist an explosion risk.

- The device may only be repaired by authorized qualified personnel. Unauthorized opening of the device and inexpertly carried-out repairs may not only seriously jeopardize the safety of the user, but also cancel all warranty and liability agreements.

- Your BEETLE system is the result of modern technical innovation. So please see for according structural and technical surroundings to guarantee a faultless and efficient work of your BEETLE. Therefore, you should connect your BEETLE or other IT-devices only to power supply systems with separately guided protective earth conductor (PE). This kind of electricity system is known as TN-S network. Do not use PEN conductors!
  Please also observe the recommendations of the norm DIN VDE 0100, Part 540, Appendix C2 as well as EN50174-2, §5.4.3.Thus you can help to avoid possible malfunctions.

Introduction

The BEETLE /SX is the compact, powerful and economical basis for your POS system.

The BEETLE /SX conforms to the PC/AT industry standard. Powerful Celeron- M processors ensure a quick processing of all operations.

You can connect a variety of different peripheral devices to your BEETLE /SX and even the choice of the software is not limited to a certain product.

Optional the BEETLE /SX can be equipped with a DVD drive.

This provides you with a considerable degree of flexibility when arranging the configuration of your POS system.

The BEETLE can also be connected to a network once an appropriate network card has been installed.

Whatever configuration you need: Wincor Nixdorf International GmbH offers the right solution. So, whenever you want to expand your BEETLE /SX, please contact your Wincor Nixdorf International GmbH branch office or your dealer.

About this manual

This manual describes the modular POS system BEETLE /SX with a Celeron- M processor.

This documentation is intended to help you to work with the POS system and to serve as a reference work. The detailed table of contents help you find the desired information quickly and easily.

Notes in the manual are marked by this symbol.

This symbol is used for warnings.

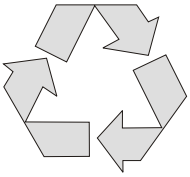
The type and scope of application programs depend on the customer's own selection; therefore, software will not be discussed further in this manual.

You will find a description of the BIOS Setup and the Central Processing Unit in a separate manual ("POS Motherboard, F2-ULV-CPU"), see http://www.wincor-nixdorf.com/internet/us/Services/Support/TechnicalSupport/POSSystems/index.html.

Care of the BEETLE /SX

Clean your BEETLE /SX at regular intervals with a suitable plastic-surface cleaner which can be ordered from Wincor Nixdorf International GmbH. Make sure that the power plug is disconnected and that no liquid finds its way into the device.

Recycling the BEETLE /SX



Environmental protection does not begin when the time has come to dispose of the BEETLE; it begins with the manufacturer. This product was designed according to our internal norm "Environmental conscious product design and development".

The modular BEETLE /SX system is manufactured without the use of CFCs and CCHS and is produced mainly from reusable components and materials.

The processed plastics can, for the most part, be recycled. Even the precious metals can be recovered, thus saving energy and costly raw materials.

Please do not stick labels onto plastic case parts. This would help us to re-use components and material.

You can protect our environment by only switching on your equipment when it is actually needed. If possible, even avoid the stand-by-mode as this wastes energy, too. Also switch your equipment off when you take a longer break or finish your work.

At this time, there are still some parts that are not reusable. Wincor Nixdorf International GmbH guarantees the environmentally safe disposal of these parts in a Recycling Center, which is certified pursuant to ISO 9001 and ISO 14001.

So don't discard your BEETLE /SX system on the garbage when it has served its time, but take advantage of the environmentally smart, up-to-date recycling methods!

Please contact your competent branch or the Recycling Center Paderborn (for European countries) for information on how to return and re-use devices and disposable materials under the following mail address.

Email: info@wincor-nixdorf.com
or on the internet.

We look forward to your mail.

Warranty

Wincor Nixdorf guarantees generally a warranty engagement for 12 months beginning with the date of delivery. This warranty engagement covers all damages which occur despite a normal use of the product.

Damages because of

- improper or insufficient maintenance,
- improper use of the product or unauthorized modifications of the product,
- inadequate location or surroundings

will not be covered by the warranty.

For further information on the stipulation consult your contract.

All parts of the product which are subject to wear and tear are not included in the warranty engagement. For detailed warranty arrangements please consult your contract documents.

Please order spare parts at the Wincor Nixdorf customer service.

BEETLE /SX- the individual POS System

Overview

You can connect a variety of peripherals to your modular POS system BEETLE /SX and thus implement a wide range of expansion stages. You can connect a four-line alphanumeric customer display and a four line cashier display. Alternatively, you can connect flat screens.

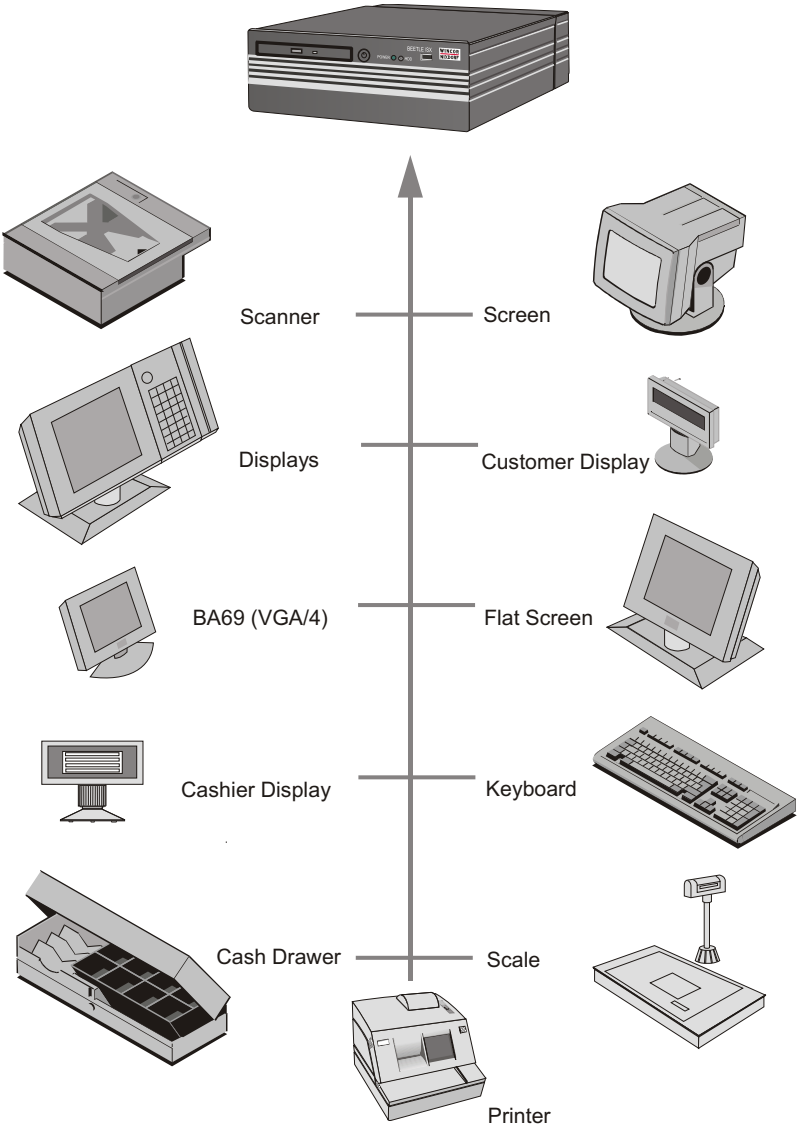
You can

- use various types of scanners such as distance, touch or stationary scanners,
- use scales and scanner scales (please take into account the official certification regulations),
- connect various printers,
- use POS keyboards,
- use different types of cash drawers,
- connect a monitor,
- integrate the BEETLE /SX in a network and
- upgrade the BEETLE /SX, since it can accommodate one PCI card (PCI and PCI-e).

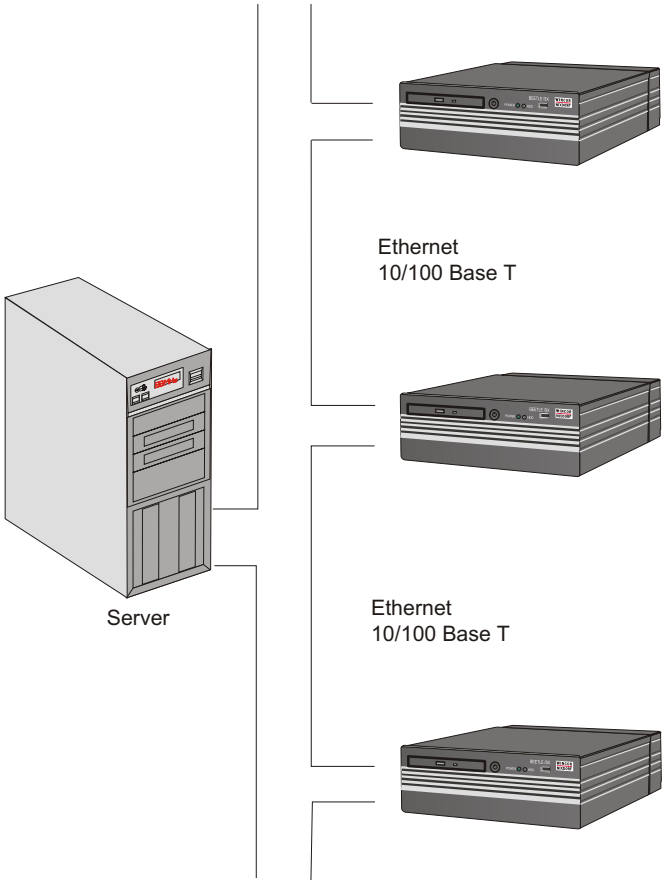
This means that the BEETLE /SX can meet your requirements at all times, without having to exchange the complete system for a new one, thus saving you time and money.

The illustrations below show you how your modular POS system can grow - from a scanner to integration in a network.

BEETLE /SX Peripherals



BEETLE /SX in a network



Before switching on the System

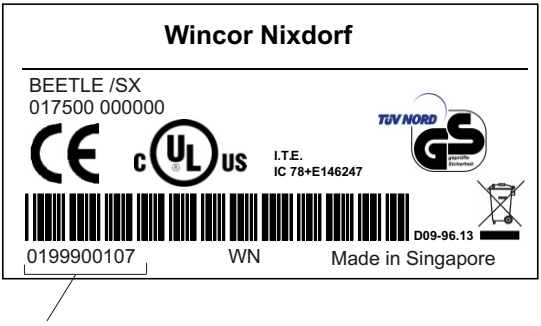
Unpacking and checking the System

Unpack the components and verify that the scope of delivery is identical to the information on the delivery ticket.
The cardboard box contains the basic unit and a country-specific package. In addition, the basic unit may be equipped with the hard disk and VGA-card or a combination of these components.

Should you notice any

- transport damages or
- discrepancies between package contents and delivery ticket or
- functional defects,

please inform your contracting parties or the branch office of Wincor Nixdorf immediately. Please indicate the number of your delivery ticket and delivery ticket position and serial number of the respective device. The serial number can be found on the label illustrated below which is located at the rear of the housing; it may be necessary to remove the cable cover and storage battery.



The serial number is located on the label below the bar code.

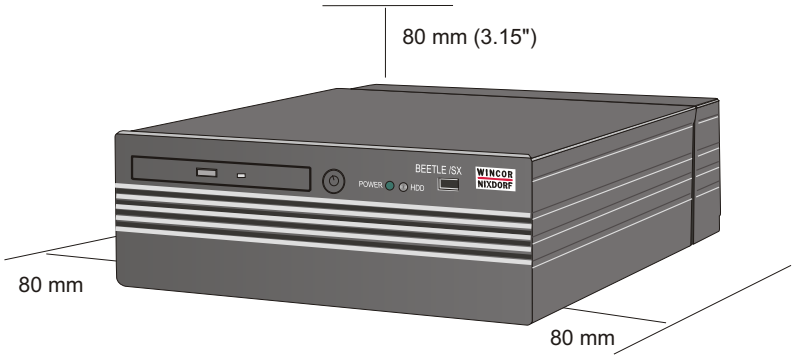
It is absolutely necessary to check the function of the original equipment before you perform any changes (e.g. by installing an expansion card). Only then it is possible to accept a functional defect as a claim.

We recommend saving the original packaging for transport at a later time (protection from impact and shock).

Setting up the device

Set up the BEETLE /SX system where it will not be exposed to extreme environmental conditions. Protect the device from vibrations, dust, moisture, heat and strong magnetic fields.

Mind the **minimum distances** indicated below! If the equipment is to be fitted, you also must ensure that the specified minimum distances are maintained and constant ventilation is provided. The immediate ambient temperature of the system must not exceed 40° C (104° F).



The fitting depth may be equal to the overall depth of the equipment including the cable cover.

Please meet these minimum distances also with the power supply pack.

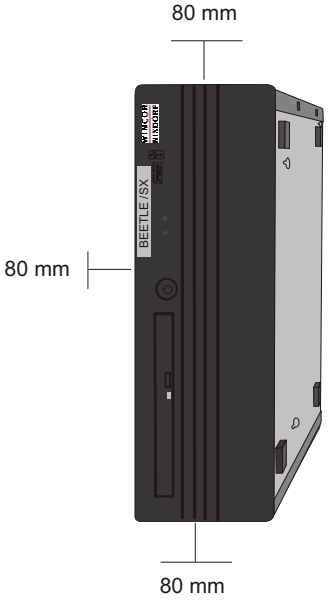
If an optional I/O hub is used the minimum distances to that device are 50 mm (1.97").

Vertical installation of the equipment

Three bore holes are located at the underside which allows the BEETLE /SX to be suspended by means of 3 screws. The minimum distances listed in the figure must be maintained; otherwise, a sufficient ventilation of the equipment is not guaranteed.

The BEETLE /SX is designed for horizontal mounting. If you install the BEETLE /SX in vertical position, you have attend to the following:

- Three breakable bore holes are located at the underside, which allow the BEETLE /SX to be suspended by means of the screws.



- The screws must not be stronger than 4.5 mm (0.18").
- Mind the following minimum clearances also for vertical mounting to ensure sufficient ventilation:

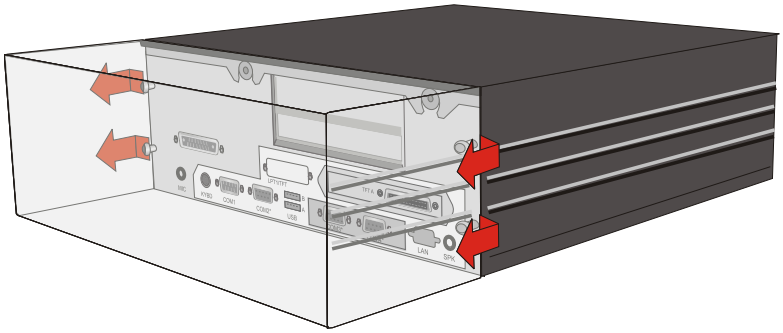
  upwards: 80 mm,
  downwards: 80 mm
  sideways: 80 mm

- A surface made of nonflammable material (e.g. concrete or metal) must be located underneath the vertically mounted power supply unit.

Cabling of the BEETLE /SX

Follow the steps below in the order given when installing devices:

- Make sure that the power switch on the power supply is set to OFF.
- If present, the cable cover must be removed.

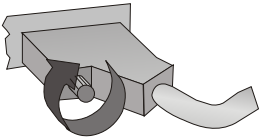


In order to remove the cable cover, push it out off the guides marked with arrows in the figure above.

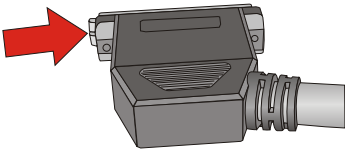
- Connect the data cables and fix them.
- Connect the power supply unit via the DC cable to the BEETLE /SX.
- Connect the power cable to the plug socket of the power supply unit.
- Connect the power cable to the socket outlet.

Always make sure that the system is switched off when you do cabling works.

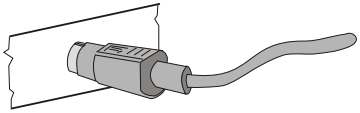
Securing the data cable



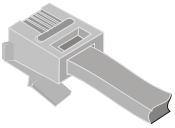
Secure interface connectors with knurled screws manually.



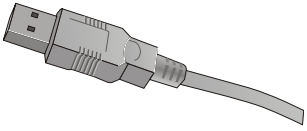
To secure the DC plug push the metal locking to the right.



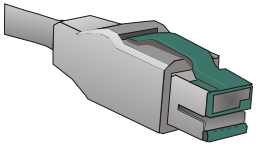
Mini-DIN plugs (Wincor Nixdorf) latch in when you insert them. Check the lock by slightly pulling the cable. Maybe you will have to lock the plug by slightly pushing the cable.



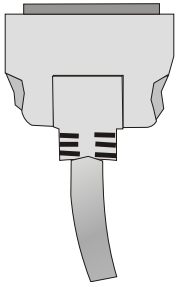
RJ12 plugs latch in when you insert them.



Standard USB connectors do not latch in place when plugged in and can be unplugged with a gentle pull.



USB Plus Power connectors lock in place when plugged in.



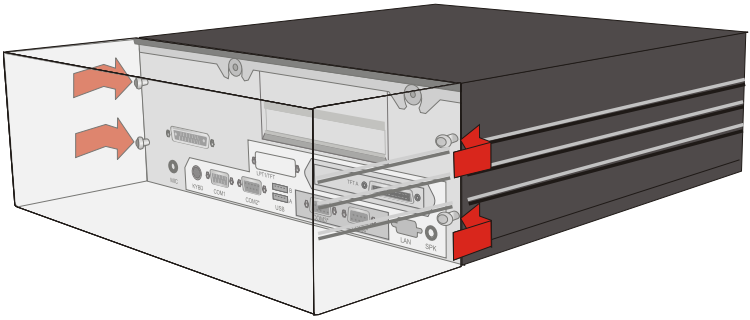
TFT connectors lock in place when plugged in.

Mount the cable cover after the cables have been plugged.

Mounting the cable cover

The scope of supply of your BEETLE /SX includes a cable cover. Before mounting the device, you should first remove the cable openings where necessary. This depends on the cables which you wish to lay.

Tools are not required as the plastic parts can be removed by hand.



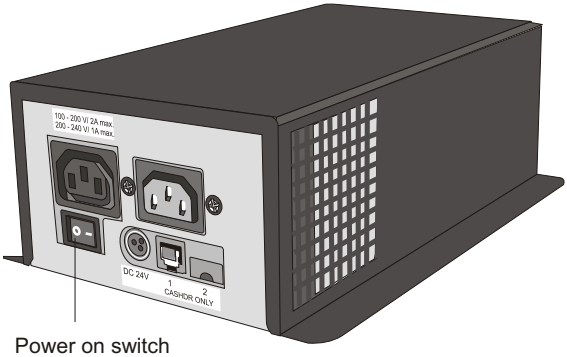
In order to mount the cable cover, insert it in the bolts at the backside of the BEETLE (see arrows).

Connecting to the Mains Power Supply

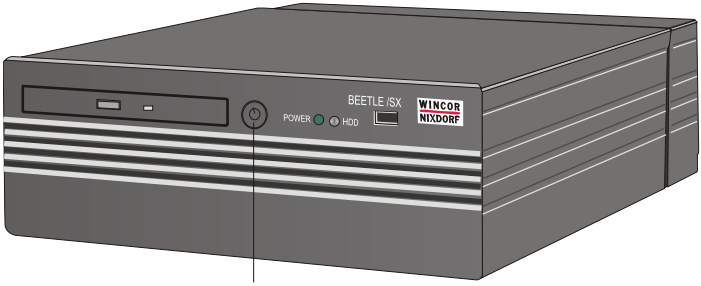
All devices belonging to the modular BEETLE /SX POS system that have a separate power cable must be connected to the same electric circuit.

- Ensure that the power switch at the backside of the power supply is switched off.
- Make sure that all data cables on the system unit and peripherals are connected correctly.
- Plug the power cable into the socket at the rearside of the power supply unit.
- Connect the power supply unit to the power outlet.
- Connect the power supply unit via DC cable to the BEETLE /SX.

Start the system by switching on the power supply unit (Power on switch at the backside) and the BEETLE /SX (Power on button at the front side).



Power on switch

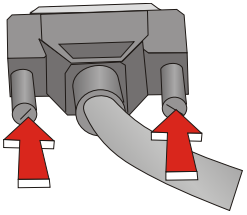


The power pack can be connected to all standard power supply networks. The unit adjusts automatically to the respective voltage. A fan provides the required ventilation. The maximum output of the power pack is 245 W.

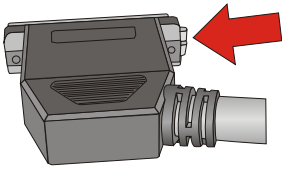
Disconnecting cables

Never unplug a cable by pulling on the cable; always take direct hold of the plug itself. Follow the procedure below when disconnecting cables:

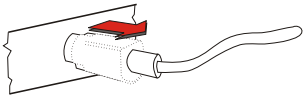
- Turn off all power and equipment switches.
- Remove the cable cover.
- Unplug all data communication cables from the sockets of the data networks.
- Unplug all power plugs from the grounded-contact power sockets.
- Unplug all cables from the devices.



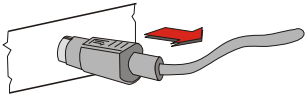
Manually loosen the knurled screws of the DC connector at the power supply.



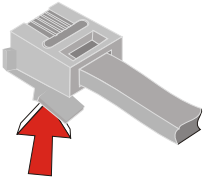
To release the DC plug push the metal locking to the left.



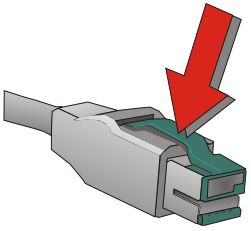
With MINI-DIN plugs (Wincor Nixdorf), the plug remains inserted until released.



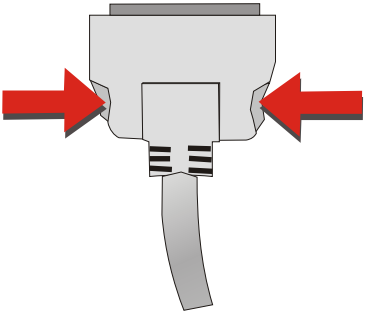
Pull the plastic covering from the connecting socket with your thumb. The lock is released. The metal of the plug is visible.



RJ12 plugs lock in when you insert them. To release them push the latch under the plug to the top.



The powered USB connector is disengaged by pressing the spring that is marked by an arrow.



To release TFT (LCD) connectors, press the interlocks on the left and right side.

Basic settings

Ex works, the BEETLE /SX is configured to your order. Your configuration must be subsequently adapted to support supplementary devices such as scanners. For more information, contact the Wincor Nixdorf International GmbH branch office responsible for your area.

Adjusting the loudspeaker

You can set the volume as desired by means of a menu in the BIOS Setup (see chapter "BIOS setup" in the manual “POS Motherboard, F2-ULV-CPU”).

Light emitting diode (LED)

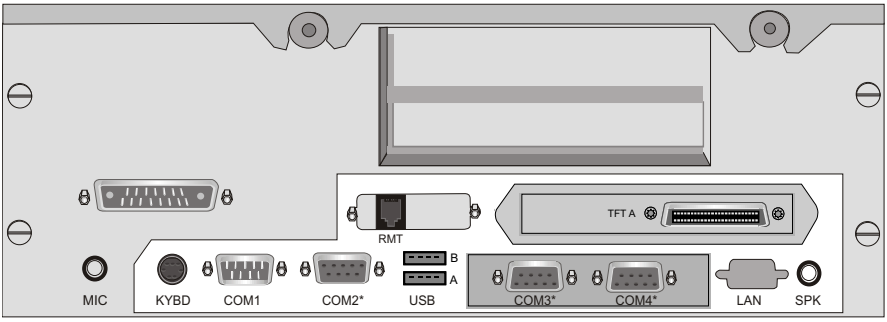
The LEDs are labelled with HDD for the left LED and with POWER for the right LED. The left LED (yellow) lights while the hard disk is beeing accessed. The right LED (green) lights when the BEETLE /SX is switched on. The LED on the right side will light yellow, when the system is in Stand-by-mode.

Connecting Peripherals

The peripherals mentioned here are available as options and are not part of the basic configuration. A separate manual is provided for each of the connectable components. For more detailed information, please consult the relevant documentation.

The figure shows the back panel of the BEETLE /SX, standard version, with the locations of the connecting sockets and connecting plugs. If you wish to connect a monitor, however, you must also have a video board.

Connecting peripherals with the system switched on is not allowed (exception: USB devices).



Rear panel of the BEETLE /SX (Standard)

Keyboard (KYBD)

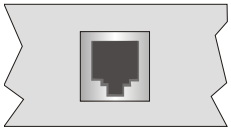
The BEETLE /SX has a 6-pin mini-DIN jack for connecting a keyboard. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. Power is supplied to the keyboard via this socket. If you wish to connect a standard PC keyboard with DIN connector, you must use a special adapter cable, obtainable from the Wincor Nixdorf International GmbH branch office responsible for your area.

In addition to the keyboard it is possible to connect a PS/2 mouse via y-adapter, activation via BIOS setup.

When removing cables with locks, please pull the cable at the connector housing.

Cash drawer

The power supply unit has one RJ12 socket for connecting a cash drawer. Make sure that the connector is plugged firmly into the socket to prevent malfunctioning. RJ12 plugs lock in when you insert them. Power is supplied to the cash drawer via this socket, P24V +5% / -15%.



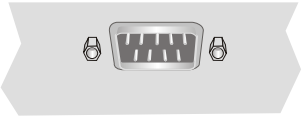
Connecting daisy chained cash drawers and 12V OEM-drawers is prohibited!

Connect cash drawers only (no telephon).

Scanners and scales (COM1, COM2* - COM4*)

Depending on the systems configuration, scanners not supplied with power are connected to the COM2*, COM3* or COM4* serial interface (standard setting COM3). Connect scales with their own power supply to the COM1 interface. COM1 is designed as a 9-pin D-sub plug, whereas COM2* - COM4* are 9-pin D-sub jacks.
Make sure that the scanner connector is plugged securely into the socket to prevent possible malfunctioning.

If scales which are not supplied by Wincor Nixdorf International GmbH are connected to the BEETLE /SX, you must obtain a Wincor Nixdorf licence for the driver software.

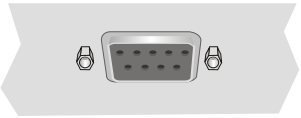


If COM2 is equipped with a connector, the interface does not carry a current.

The COM1 or COM2 interface is without effect if a TFT adapter with touchscreen function is installed (adjustment necessary in the BIOS setup).

Customer or Cashier display (COM2* - COM4*)

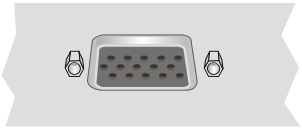
Depending on how the system is configured, the customer display is connected to either the COM2*, COM3* or COM4* serial interface. The interface connection is a 9-pin D-sub jack. Make sure that the connector for the customer display is screwed firmly to the socket to prevent possible malfunctioning. Power is supplied via this jack.



If COM2 is equipped with a connector, this interface does not carry a current.

Monitor

If a CRT adapter is installed, you can connect a monitor to the BEETLE /SX via the 15-pin D-sub jack on the CRT adapter. Power is supplied to the monitor via the AC-outlet on the BEETLE /SX, located on the back of the housing.

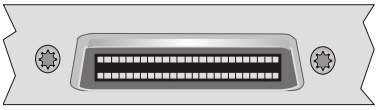


A LCD screen can be connected alternatively if a TFT adapter is installed.

TFT - LCD Display

If a TFT adapter is installed you can connect a Panellink-TFT to the BEETLE /SX. Connect the 40-pin data cable of the LCD to the system. The signals for the touch screen function and the power supply is also made via this cable. To implement the touch screen functionality for the COM1 or COM2* interface you have to change some system settings in the BIOS setup.

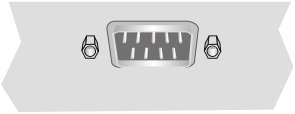
The COM1 or COM2* interface is without effect if the onboard TFT adapter with touch screen function is installed. In this case the interface is not available for other peripherals.



Connecting standard PC peripherals (COM1)

You can connect standard peripherals to the BEETLE /SX via the COM1 serial interface.

Make sure that all additional devices are provided with the CE mark.



Network

The system can be connected to a network (LAN) from the POS terminal back panel.

Only connect shielded LAN cables (CAT5) as these offer a better protection in case of interferences in a network.

Modular printers

Appropriate POS printers can be connected via the low-voltage jack 24V, max. 3A via non-UPS. A connecting cable with a HOSIDEN plug is required for this.

Connect only cables to the 24V connector which are marked with DP-1 or DP-2.

Do not connect the HOSIDEN plug when the system is turned on, this can lead to an automatical reboot of the system.

USB (Universal Serial Bus)

You can connect several USB peripheral devices to the USB or powered USB interface (12V or 24V).

12V 24V

Only connect devices equipped with a shielded cable to the USB-interface.

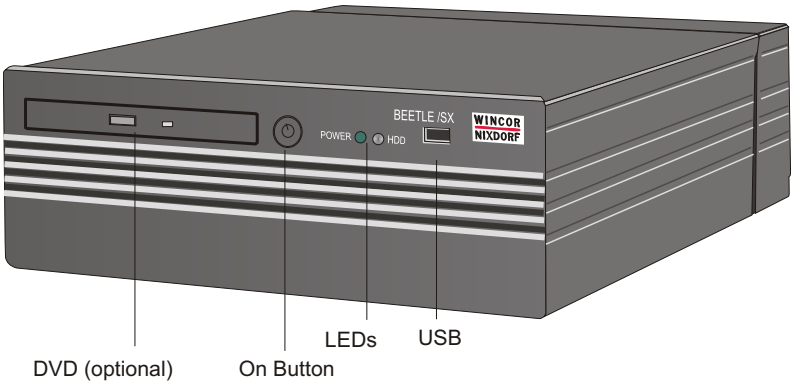
RJ10/RMT jack (optional)

You connect the remote (RMT) interface of your POS system via a cable to the RMT interface of the display (BA8X). You use the RMT function by pushing the ON/OFF button of the display. The Remote On/Off function (RMT) enables you to wake up a BEETLE system out of either standby/ hibernation or soft-off mode. It also puts a running system into standby / hibernation mode. The activated mode is depending on the settings of the operating system.

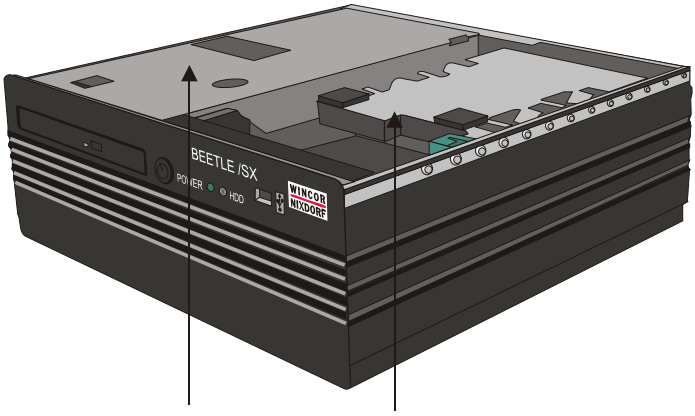
BEETLE /SX- the Components

Overview

BEETLE /SX: Exterior view.

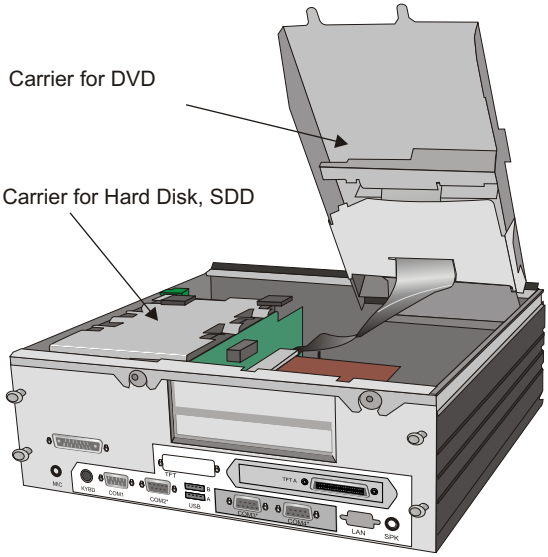


BEETLE /SX: Interior view.



Carrier for DVD

Carrier for Hard Disk Drive, SDD



DVD Drive (Option)

General

The BEETLE /SX can be equipped with a DVD drive. The LED of the drive lights up whenever the system accesses the drive.

Operating the Drive

To start the drive, follow the procedure below:

- Start the BEETLE /SX.
- Press the ejection button.
- The drawer is ejected from the drive.
- Place the disc into the drawer with the disc label facing up. Warily push back the drawer until it is locked in the drive.

Notes

- Never bend a disc.
- Never write on a disc with the a hard object, like a ball-point pen or pencil and never fix a label directly on the disc.
- Do not expose discs to direct sunlight and avoid storing them in areas subject to high temperatures or humidity.
- Never touch the surface of the disc. Always handle by their edges.
- For best results, periodically wipe each disc with a soft, dry cloth, gently rubbing outward from center.

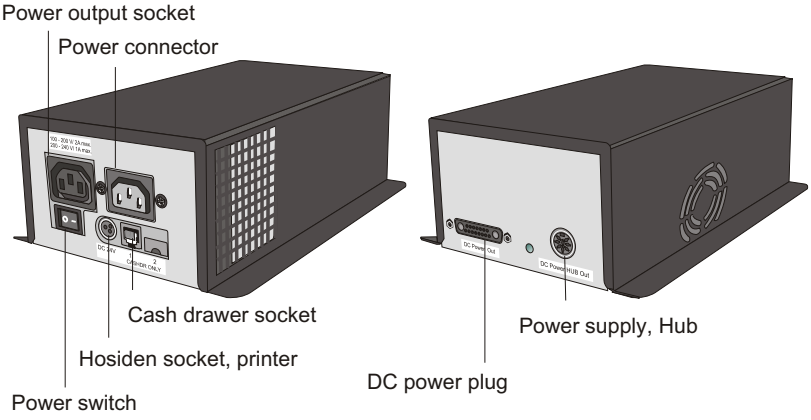
Never use fluids such as petrol, record cleaning or anti-static fluid. Use of such fluids can damage the disc.

Power Supply Unit

The external power supply can be connected to all conventional power supply networks. It automatically adjusts itself to the particular voltage and is fan-cooled. The power output of the power pack is maximum 245 W.

Interfaces at the rear side:
- Power connector
- Power output for a monitor
- Power switch
- Cashdrawer socket
- Power supply for the printer (DC24V, HOSIDEN socket)

Frontside:
- Power supply for BEETLE /SX (DC)
- Power supply for I/O hub



The power pack must be removed or replaced by authorized qualified personnel only. Only replace power packs released by Wincor Nixdorf!

To disconnect the device from the supply voltage completely, switch off the device and disconnect the power plug.

I/O Hub (Option)

A USB cable connects the (optionally available) I/O hub to the BEETLE system and carries out the data exchange. Power is supplied via connection to the power supply unit (DC power-in). Besides the power distribution the hubs make sure that always but one USB device can send it's data to the host controller.

The hubs can be connected arbitrarily, thus resulting in a tree structure.

There are five 12V and one 24V USB interfaces available. A USB cable (connected to the «USB- in» socket) carries out the data exchange between BEETLE system and peripheral devices.

The LEDs report the following:

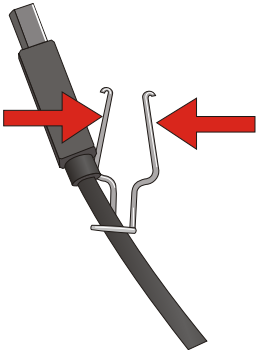
Blue LED: Ligths when the hub is operable *and* a USB device is connected to «USB In»".

Green LEDs: Ligth when a USB device is recognized as connected and operable.

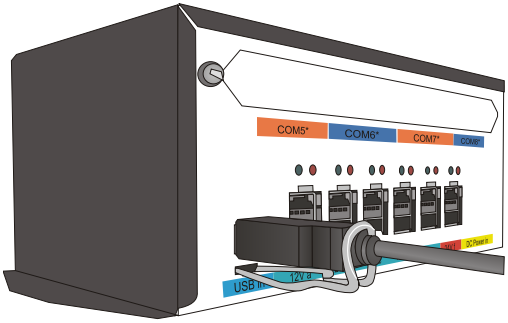
Red LEDs: Over-current at one of the 5V standard USB connections.

Securing the USB Cable

To protect the USB cable against accidental removing it is fixed by a clamp. Mind the following:



Plug the connector into the socket and push the clamp inwards. When the clamp is fixed, release it and the USB connector will be secured.

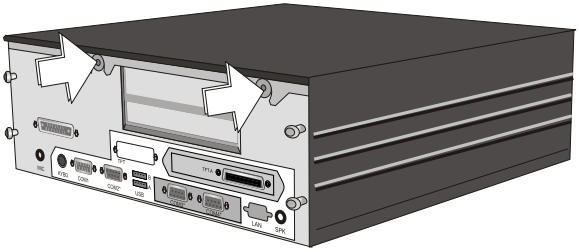


2.5" SSD (Option)

Optionally the BEETLE can be equipped with a 2.5“ SSD (Solid State Drive) storage medium. The SSD is to be installed like a usual Hard Disk Drive and is connected via a SATA interface.The storage is done on semiconductor modules and not on rotating disks as with hard disks.

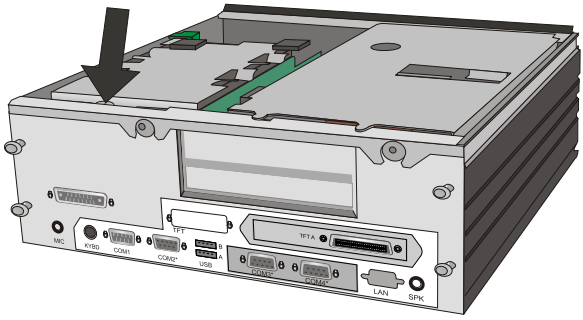
Changing a Solid State Drive (SSD)

Make sure that the device is switched off and that the power connector is disconnected.

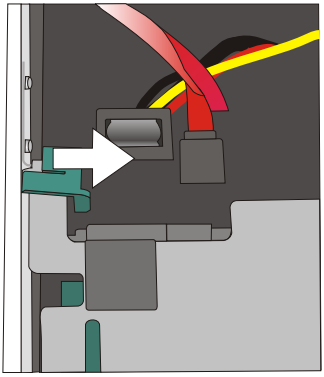


Loosen the two knurled screws at the rear side (see arrows).

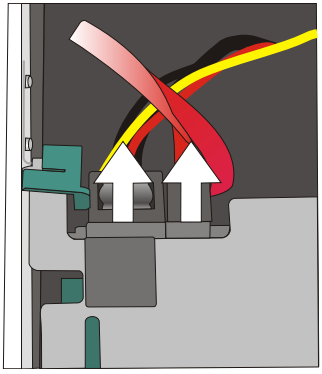
Lift the top cover at the back side and then shift it out of the front guide.



Loosen the screw of the disk driver (see arrow).

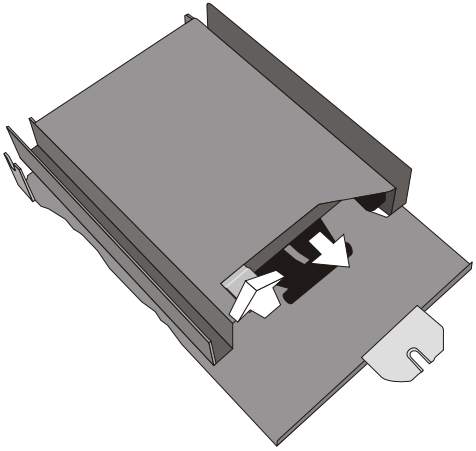


Loosen the green clamp (see arrow).

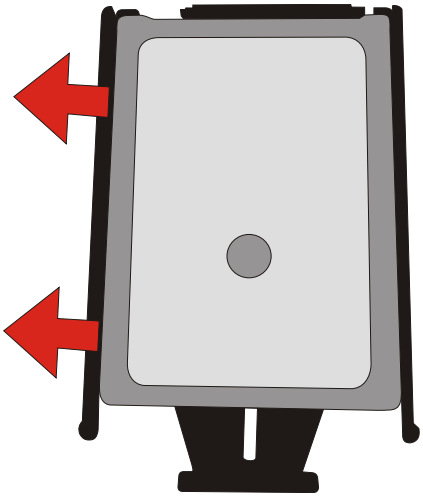


Disconnect all cables (SATA, power supply). Don't take hold of the cable but of the connector housing.

Remove the drive carrier.



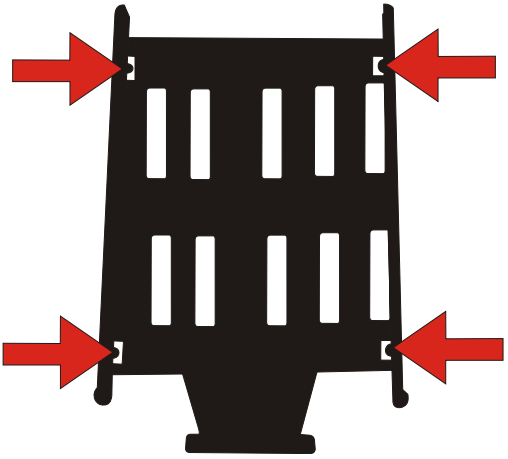
Turn the drive carrier upside down. To remove the SSD press the metal clip upwards and simultanously pull out the holder (see arrows).



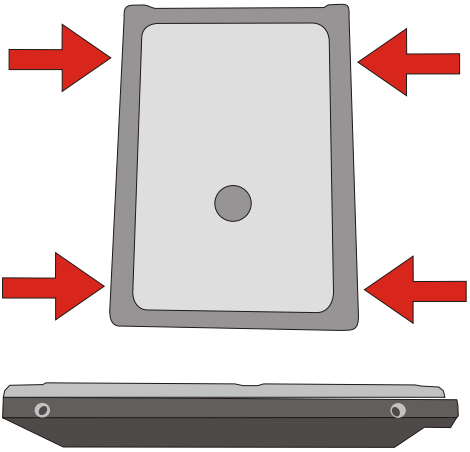
The SSD is placed in a holder. To remove the SSD. press one side of the holder outwards (see arrows).

Ensure that the settings of the new solid state disk are correct. It may also be necessary to change settings in the BIOS (see the manual for the motherboard).

Handle the solid state disk with care when installing it and never touch bare electronics.

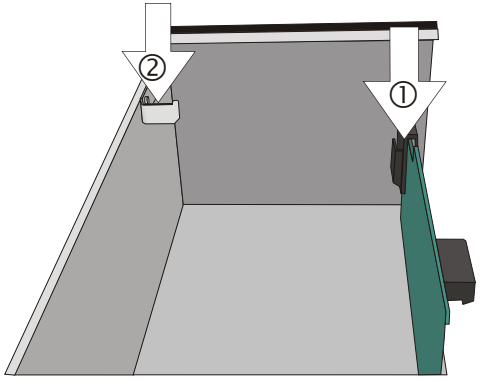


Make sure that the four knobs (see arrows) match with the borings in the solid state disk.

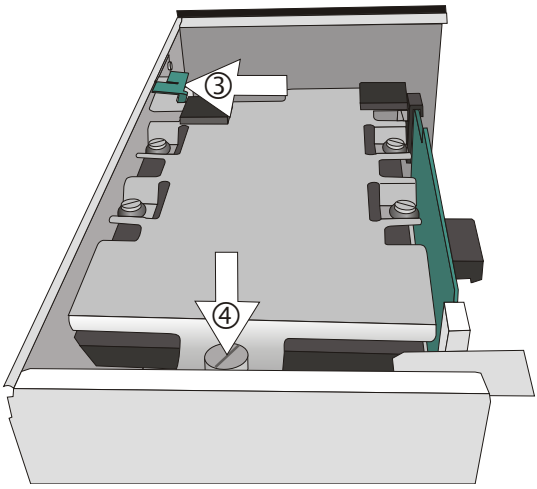


Solid state disk in top and side view

Insert the SSD into the holder and put both into the carrier.



Make sure that the drive carrier is hooked in at the right side (1) and bears on the metal clip on the left side (2).
It is absolutely necessary to ensure that cables are not pinched.



Mount the green clamp at the correct position (3).

Fix the screw of the hard disk driver (4).

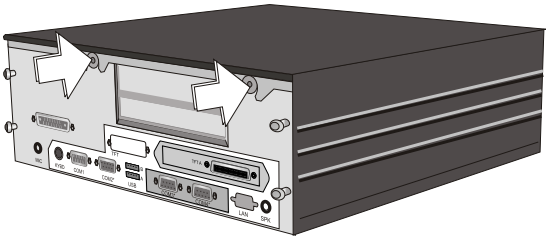
Connect both cables to the solid state disk.

Close the cover and connect the mains plug. You may now switch on the system.

3.5" Hard Disk (SATA)

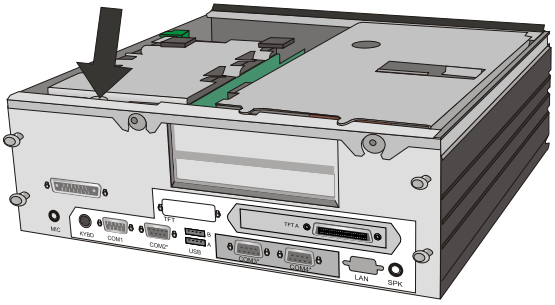
Changing a Hard Disk

Ensure that the device is switched off and that the power connector is disconnected.

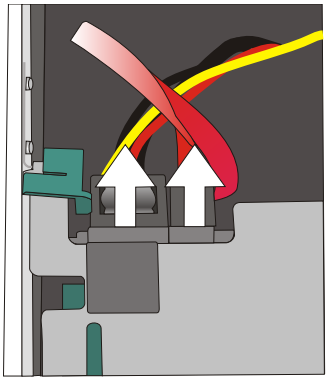


Loosen the two knurled screws at the rear side (see arrows).

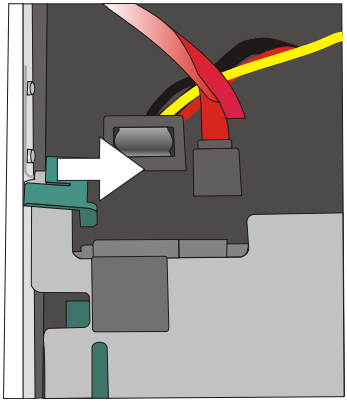
Lift the top cover and shift it upwards out of the front guide.



Loosen the screw of the hard disk driver (see arrow).

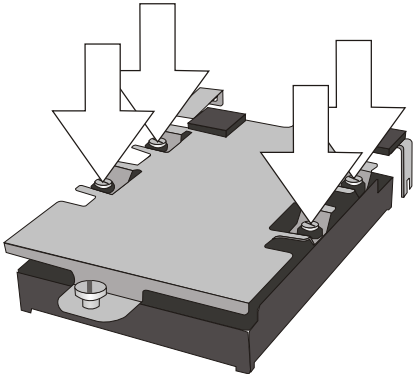


Disconnect all cables (SATA, power supply). Don't take hold of the cable but of the connector housing.



Loosen the green clamp.

Remove the hard disk drive carrier.

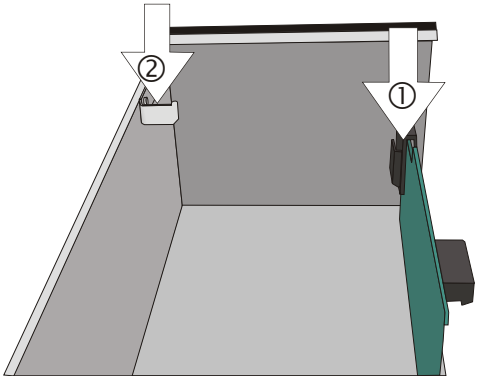


Now remove the four screws marked in the illustration and detach the carrier.

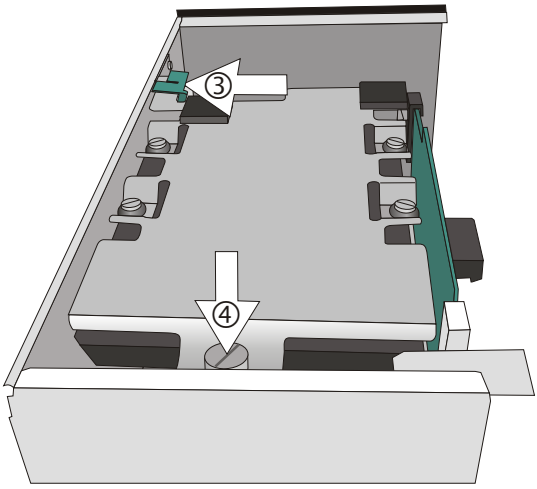
Note the mounting position of the hard disk.

Ensure that the settings of the new hard disk are correct. It may also be necessary to change settings in the BIOS (see the manual for the motherboard).

Handle the hard disk with care when installing it and never touch bare electronics.



Insert the hard disk carrier.
Make sure that the drive carrier is hooked in at the right side (1) and bears on the metal clip on the left side (2).
It is absolutely necessary to ensure that cables are not pinched.



Mount the green clamp at the correct position (3).

Fix the screw of the hard disk driver (4).

Connect both cables to the hard disk.

Close the cover and connect the mains plug. You may now switch on the system.

Configuration variants

Submodules for the Motherboard

Various controllers and adapters can be connected to the motherboard. The following is a brief description of the available options:

CRT- or TFT- adapter

Both adapters may be installed in parallel. You can connect a CRT monitor or/and a TFT-LCD module with optional touch screen functionality.

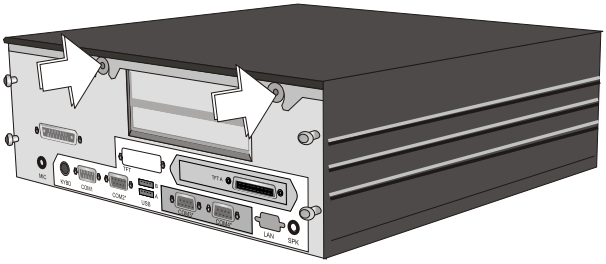
When installing a TFT- adapter with touchscreen functionality the cable for the internal loudspeaker must be removed to activate the loudspeaker in the screen display.
The touch functionality must be activated via BIOS setup.

The COM2- interface will be covered and is no longer valid for external use.

Installing the submodules and adapters

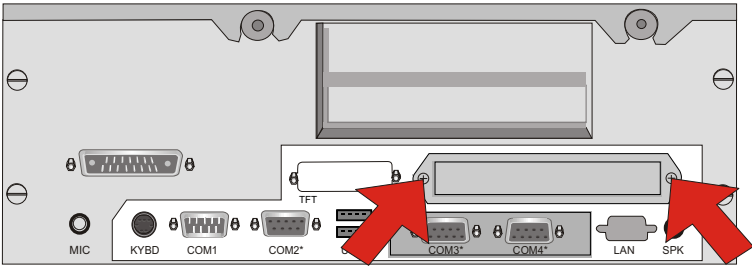
First ensure that the device is switched off. Remove the cable cover and disconnect the power connector or turn it to position "0". Pull the power plug.

Loosen the two knurled screws at the rear side (see arrows).

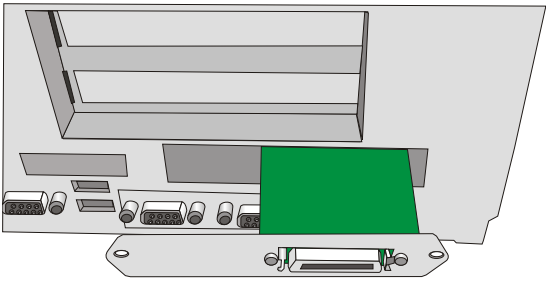


Lift the top cover at the back side and then shift it upwards out of the front guide.

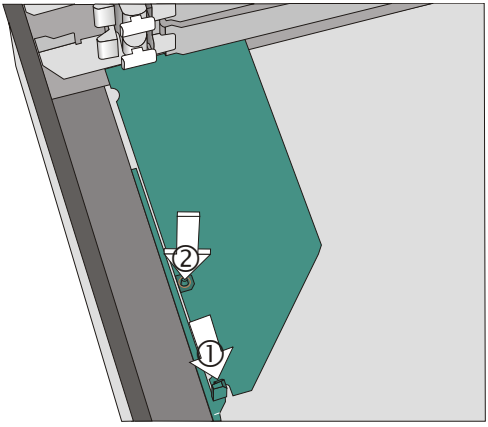
Remove the metal cover from the rear side.



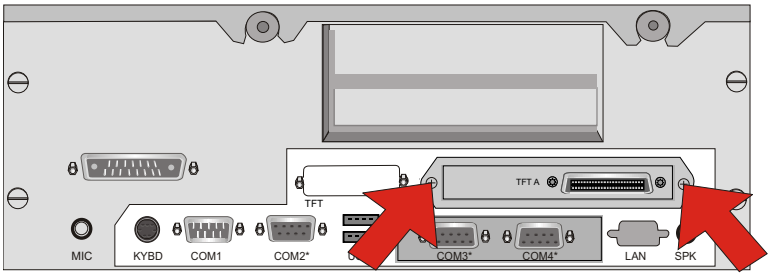
Push the submodule through the recess of the housing.



Bend the green clamp (1) carefully in direction of the illustrated arrow. Stick the submodule to the motherboard and release the clamp thus to fix the submodule. It has to be plugged correctly on the green pin of the motherboard (2).



Attach the bezel of the submodule using the screws that you removed before.



Switch on the device and mount the cable cover. Connect the mains plug. Now you may switch on the system with the ON button.

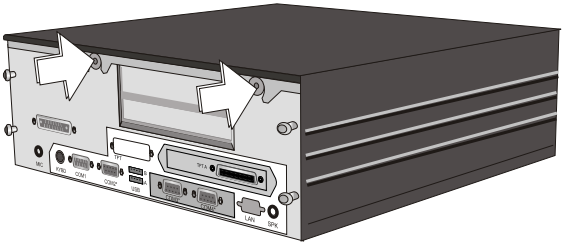
Attach the top cover and switch on the system (power switch) at the rearside. Install the cable cover and connect the power plug. Now you can switch on the device with the on/off push button.

PCI plug-in cards

You can use nearly all standard PCI cards with your BEETLE /SX.

Installing an expansion card

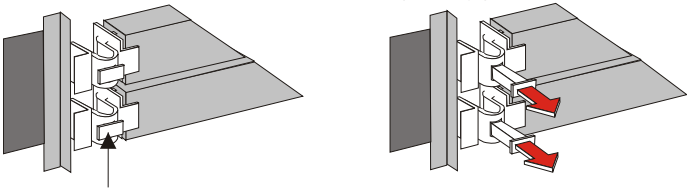
First ensure that the device is switched off. Disconnect the power connector or turn it into the position "0". Pull the power plug.



Loosen the two knurled screws at the rear side (see arrows).

Lift the housing upwards out of the front guide.

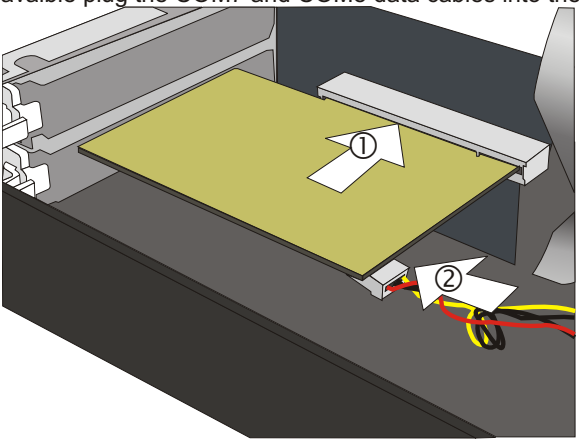
Pull the tappet of the clamp forwards (see fig.) and remove the metal cover.



Tappet of the clamp

Flap the CD/DVD carrier upwards.

Push the card sidewards (see 1) into the connection. Ensure that the card establishes contact with the terminal strip. Plug the power cord and if avaible plug the COM7 and COM8 data cables into the PCI/COM card (2).



Finally, insert the housing side and attach the housing cover. Tighten it with the knurled screws. Connect the mains plug and switch the power switch of the power supply unit to position "1". Now attach the cable cover and switch on the BEETLE /SX.

Expansion cards with electrostatically sensitive devices (ESD) can be marked with this sticker.

When you handle boards fitted with ESDs (electronical components), you must observe the following aspects under all circumstances:

- You must always discharge yourself (e. g. by touching a grounded object) before working with boards containing ESDs.
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or pulling out boards containing ESDs.
- Always hold boards with ESDs by their edges.

Never touch pins or conductors on boards fitted with ESDs.

Starting up the system

After installing the BEETLE /SX, switch on the POS system using the ON/OFF button on the front panel and the power switch on the power supply.

The system first performs an automatic self-test to test its basic functions.

For example, you may see the following message (irrespective of processor type) on the monitor:

```
WN ID xx/xx Datum
```

xx/xx is the placeholder of the BIOS version number.

The system then determines the medium from which the operating system and POS application are to be booted. Each medium is assigned a logical drive according to the configuration of your BEETLE /SX.

The following media can be assigned a drive:

- Network
- Hard disk
- DVD-ROM
- USB drive

The logical drives are designated C: and D:.

The network is always assigned to the C: drive during the runup procedure. The hard disk can be assigned to the C: or D: drive. The system can only be started from the hard disk if the disk has been configured as the C: drive.

Corresponding to the Setup configuration the modular BEETLE /SX system can be booted from the following drives:

- Hard disk in drive C:
- DVD ROM
- LAN module with BOOTPROM
- USB drive

Please mind that the storage medium must be system-boot-capable.

If the POS system does not find a CD-ROM, it automatically continues the loading process from drive C:.

If the operating system has started up without error, the POS application software is automatically booted if necessary.

A message is displayed as soon as the BEETLE /SX is ready for operation. For more detailed information, see the description of your application program.

Appendix

Technical data for the BEETLE /SX

Dimensions		
Width	288 mm	11.34"
Depth	286 mm	11.26"
Height	103 mm	4.06"
Weight	approx. 5 kg	
Climatic category		
Class 3K3	DIN IEC 721-3-3	
Class 2K2	DIN IEC 721-3-2	
Class 1K2	DIN IEC 721-3-1	
Temperature		
Operating (3K3)	+5°C bis +40°C	
Transport (2K2)	-25 C bis +60 C	
Storage (1K2)	+5 C bis +40 C	
Input voltage	100 - 120 V 200 - 240 V .	
Max. power consumption	4A / 7A	
Frequency of the system voltage	50/60 Hz	
Noise development	< 47 dB (A)	
Mains power outlet	100 - 120 V /2 A max. 200 - 240 V /1 A max	

Interfaces

COM	COM 1 (w/o power supply), COM2*- 4* (power supplied) or COM1 (w/o power supply) COM2 (power supplied expanded) + 12V/900mA (max. sum), 300 mA max. pro COM + 5V/500 mA (max. in sum)
USB (Universal Serial Bus)	2 USB at the rearside, 1 USB at the frontside optional 6 USB at the external I/O- hub and/or 3 USB via USB-board
PS/2 keyboard	PC compatible (6pin Mini DIN connector)
PS/2 mouse	via keyboard Y- cable
On Board Graphic (Display)	supports Onboard adapter for CRT screens and panellink) Resolution: CRT up to 2048x1536 (32Bit Colours) Panellink 1024x768, 800x600
MIC, Speaker	Ports for microphone and loudspeaker
Volume	Adjustable in 3 steps by the BIOS Setup
LAN	RJ45 socket, 10/100 Mbit/s
PCI-Bus	PCI 32 Bit
PCIe	1 x PCIe
SATA	for internal hard disk + solid state drive
E-IDE	DVD

Power Supply

Height	82.6 mm	3.25"
Width	170.6 mm	6.72"
Depth	242.6 mm	9.55"
Weight	2.8 kg	

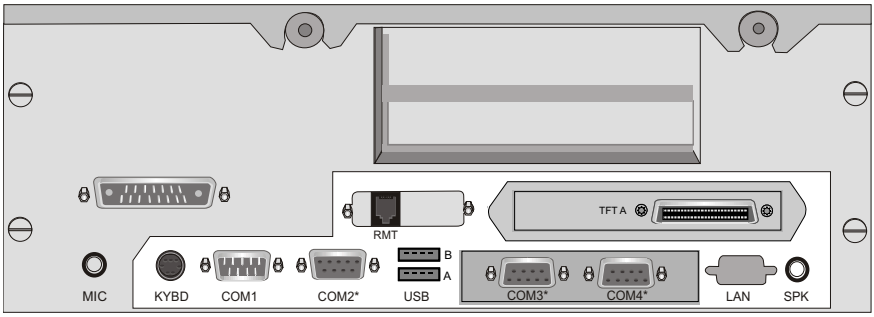
I/O- Hub

Height	73.7 mm	2.9"
Width	223 mm	8.78"
Depth	90.5 mm	3.56"
Weight	0.8 kg	

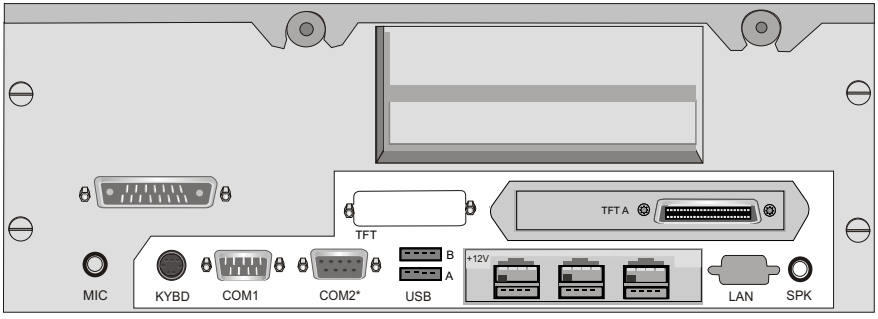
Connections

Standard

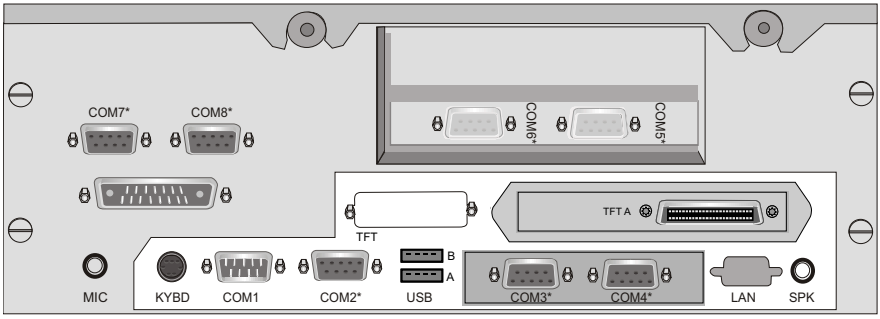
This is the standard version with COM3* and COM4*



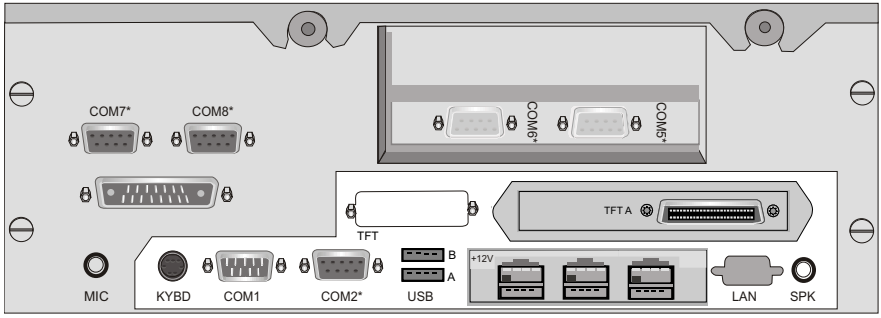
with USB hub.



with COM3* up to COM8* and scale controller



with COM5* up to COM8* and USB hub



Total Current Consumption of Interfaces

The total current consumption at **5V interfaces** must not exceed **5A**.

each COM* = 300mA, in total 500mA
each USB = 500mA, in total 2A
each USB (HUB) = 500mA, in total 2A
TFT/LCD-Display
Max. 5A @ 5V

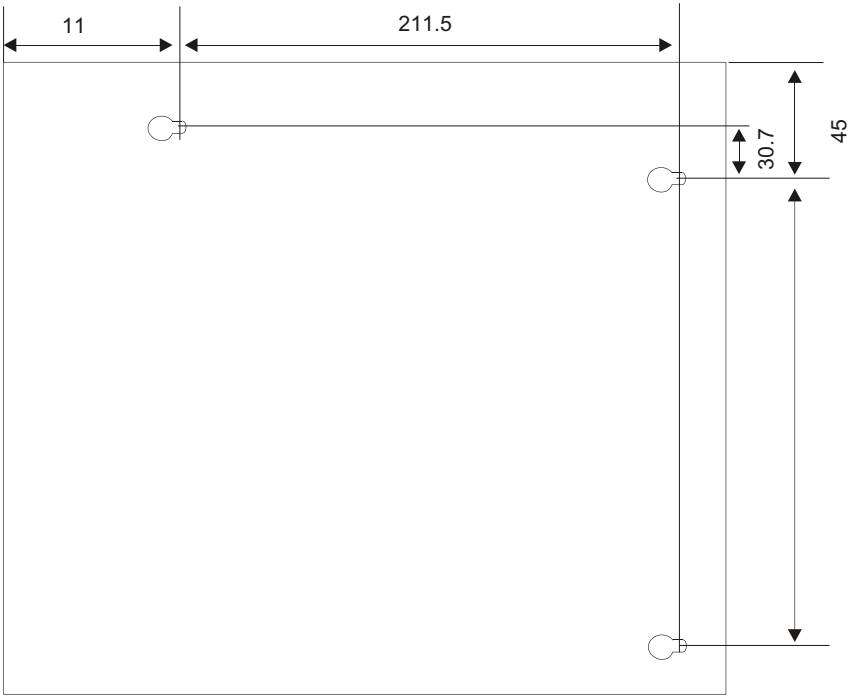
The total current consumption at **12V interfaces** must not exceed **5A**.

each COM* = 600mA, in total 900mA
each USB = 1,5A, in total 2A
each USB (HUB) = 1,5A, in total 2A
TFT/LCD-Display
Max. 5A @ 12V

Power loss of additionally implemented PCI- and PCIe- Controllers is - for thermic reasons - limited to 10W for each slot and all together to 20W.

Wall Mounting

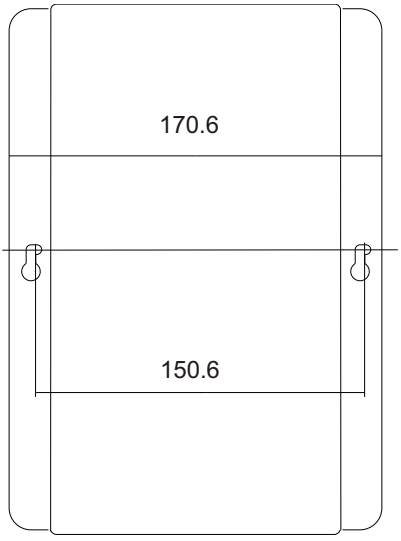
BEETLE /SX



Dimensions in mm

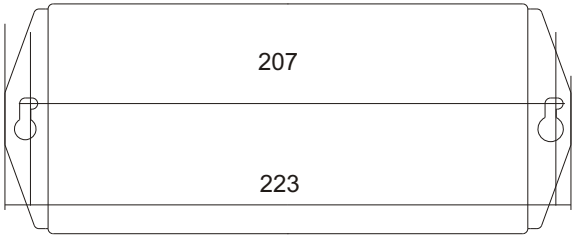
Please mind that the screws used have to carry a weight of 7 kg. The diameter of the four screws must be between 4 mm (min.) and 4.5 mm (max.). The length of the screws depends on the material of the surface you are going to mount the device. When mounting the device to a stone or concrete wall use corresponding dowels.

Power Supply



The diameter of the two shoulder screws must be 4 mm and the diameter of the screw heads must be 8 mm. The length of the screws depends on the material of the surface you are going to mount the device. When mounting the device to a stone or concrete wall use corresponding dowels.

I/O Hub



The diameter of the two shoulder screws must be 4 mm and the diameter of the screw heads must be 8 mm. The length of the screws depends on the material of the surface you are going to mount the device. When mounting the device to a stone or concrete wall use corresponding dowels.

Glossary

Bit
A bit is a binary digit (0 or 1). It is the smallest unit used in data processing.

Controller
Serves to control data input and output in a data processing system or between a computer and the connected peripherals.

CPU
Abbreviation of central processing unit. It includes the main components of a data processing system. The CPU monitors all operations and provides data and programs. It comprises the control unit for input and output, the computer and the main memory, divided into ROM and immediate access storage.

DVI
It is a new standard for digital data transfer. A DVI connection transfers a digital signal to the monitor without converting it to analog, thereby making sure that no information is lost or garbled in the digital-to-analog conversion and following analog-to-digital conversion that can occur in current digital display devices. DVI has three subsets: DVI-A, for analog signals, DVI-D, for digital signals, and DVI-I *(integrated)*, for both analog and digital signals. In the future PCs and laptops are not only equipped with DVI, but also video devices as DVD.

Interface
Designates the transition point between different hardware units and software units or between hardware and software units of computers or their peripherals.

JEIDA
Abbreviation of Japan Electronic Industry Development Association. Industry standard for memory cards.

Operating system
Refers to all programs that are a component of a computer and are required for operating the system and executing application programs.

PCIe
Abbreviation of Peripheral Component Interconnect Express. The basis for the „classical“ bus structure is a parallel architecture, i.e. all connected terminals share an available bandwidth. With the new technology - PCI

Express - the transfer rates are increased by switched point-to-point connections. A switch connects two PCIe components at a time with full bandwidth and speed.

PCMCIA
Abbreviation for Personal Computer Memory Card International Association. Industry standard for memory cards.

Plug and PLay (PnP)
PnP means the automatic recognition of hardware components by the system. Thus the installation, integration and configuration of new components is made substantially easier.

Peripherals
Devices serving as an input/output device or storage for a computer. This includes, for example, document readers, keyboards, printers and disk storage.

SATA
Abbreviation for “Serial Advanced Technology Attachments”, a serial interface. By using the serial transmission SATA will do with a thin four-wired conductor and a small plug. ATA so far was known for the broad ribbon cable.

Server
This is a computer connected to a local network and whose services are available to all of the network subscribers, e.g. a print server for printing the data from all of the network subscribers on the printer connected to the server.

VGA
Stands for Video Graphics Array and is the interface for connecting colour monitors.

Abbreviations

BIOS	Basic Input Output System
BPP	Bits per Pixel (Farbtiefe)
CE	European Symbol of Conformity
COM	RS 232 interface
CPU	Central Processor Unit (for example INTEL Celeron-M)
CRT	Cathode Ray Tube
cUL	Canadian Registration (Recognized by UL)
DIMM	Dual Inline Memory Module
DOC	Disk-On-Chip
ESC	Embedded Scale Controller
ESD	Electrostatic Discharge
HDD	Hard disk drive
FDD	Floppy disk drive
IEC	International Electrotechnical Commission
LAN	Local Area Network
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NV RAM	non violate RAM
OS	Operating System
P-M	Pentium M (INTEL)
POS	Point Of Sales
PnP	Plug and Play, Plug & Play
PS	Power Supply
SSD	Solid State Drive (flash medium)
TCO	Total Cost of Ownership
TDP	Thermal Design Power (INTEL specification)
UL	Underwriters Laboratory (standards)
UPS	Uninterruptable Power Supply
USB	Universal Serial Bus
WAN	Wide Area Network
W LAN	Wireless Local Area Network
WN	Wincor Nixdorf International GmbH
ZC	Zero Cache (technical detail for CPU)