

# **KISS 4U**

User's Manual

Version 1.10 preliminary

Kontron Embedded Computers GmbH

0-0096-3077



---

# Contents

<b>Introduction</b> .....	<b>3</b>
Symbols used in this Manual .....	4
<b>Important Instructions</b> .....	<b>5</b>
Note on the Warranty.....	5
Exclusion of Accident Liability Obligation.....	5
Liability Limitation / Exemption from the Warranty Obligation .....	5
<b>Safety Instructions</b> .....	<b>6</b>
Operation of Laser Source Devices .....	6
Electrostatic Discharge (ESD) .....	7
Grounding Methods.....	7
Instructions for the Lithium Battery .....	8
FCC Statement.....	8
Electromagnetic Compatibility.....	9
<b>Scope of Delivery</b> .....	<b>10</b>
Type Label and Product Identification.....	10
<b>Product Description</b> .....	<b>11</b>
Front Side.....	17
Interfaces on the Front Side.....	19
LED Indicators.....	19
Operating Elements .....	20
Front Access Door .....	21
Filter Mat Holder.....	21
External Accessible Drive Bays.....	21
External Accessible Slim-Line or Internal 3.5" Drive Bay (Option) .....	21
Rear Side.....	22
Interfaces on the Rear Side.....	23
Power Supply Unit.....	24
Fan Slide-In Module .....	25
Side View.....	26
<b>Assembly, Disassembly</b> .....	<b>27</b>
Attaching the Rubber Feet.....	27
Removing the Drive Locking Screws .....	27

Accessing Internal Components.....28  
    Installing/Removing the Expansion Cards .....28  
Instruction for Installation in a 19" Cabinet .....31

**Starting Up.....32**

Power Cord Connection .....32  
    AC Connection .....32  
    DC Connection .....33  
Operating System and Hardware Components Drivers.....34

**Maintenance and Prevention .....35**

Replacing the System's Fans.....36  
Cleaning the Filter Mat .....39  
Replacing the Lithium Battery .....41

**Slide Rails (Option).....42**

Slide Rails Accessories and Assembling.....43  
    Mounting into an Industrial Cabinet (with Slide Rails).....44

**Main Specifications.....45**

Electrical Specifications .....45  
Mechanical Specifications .....46  
Environmental Specifications .....46  
CE Directives and Standards .....47

**Standard Interfaces – Pin Assignments.....48**

Serial interface COM (RS232).....48  
Parallel Port (LPT).....49  
PS/2 Mouse Connector .....50  
PS/2 Keyboard Connector .....50  
VGA Port.....51  
USB Port .....51

**Technical Support.....52**

Returning Defective Merchandise .....53

# Introduction

Kontron Embedded Computers would like to point out that the information contained in this manual may be subject to technical alteration, particularly as a result of the constant upgrading of Kontron Embedded Computers products. The attached documentation does not entail any guarantee on the part of Kontron Embedded Computers with respect to technical processes described in the manual or any product characteristics set out in the manual. Kontron Embedded Computers does not accept any liability for any printing errors or other inaccuracies in the manual unless it can be proven that Kontron Embedded Computers is aware of such errors or inaccuracies or that Kontron Embedded Computers is unaware of these as a result of gross negligence and Kontron Embedded Computers has failed to eliminate these errors or inaccuracies for this reason. Kontron Embedded Computers expressly informs the user that this manual only contains a general description of technical processes and instructions which may not be applicable in every individual case. In cases of doubt, please contact Kontron Embedded Computers.

This manual is protected by copyright. All rights are reserved by Kontron Embedded Computers. Copies of all or part of this manual or translations into a different language may only be made with the prior written consent of Kontron Embedded Computers. Kontron Embedded Computers points out that the information contained in this manual is constantly being updated in line with the technical alterations and improvements made by Kontron Embedded Computers to the products and thus this manual only reflects the technical status of the products by Kontron Embedded Computers at the time of printing.

© 2009 by Kontron Embedded Computers

Printing and duplication, even of sections, is only permissible with the express approval of

Kontron Embedded Computers GmbH  
Oskar-von-Miller-Str. 1

85386 Eching near Munich  
Germany

## Symbols used in this Manual

**Symbol**

**Meaning**



This symbol indicates the danger of injury to the user or the risk of damage to the product if the corresponding warning notices are not observed.



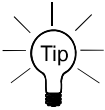
This symbol indicates that the product or parts thereof may be damaged if the corresponding warning notices are not observed.



This symbol indicates general information about the product and the user manual.



This symbol indicates detail information about the specific product configuration.



This symbol precedes helpful hints and tips for daily use.

## **Important Instructions**

This chapter contains instructions which must be observed when using your KISS 4U-Platform.

The manufacturer's instructions provide useful information on your KISS 4U-Platform.

### **Note on the Warranty**

Due to their limited service life, parts which by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law. This applies to batteries, for example.

### **Exclusion of Accident Liability Obligation**

Kontron Embedded Computers shall be exempted from the statutory accident liability obligation if the user fails to observe the "General Safety Instructions for IT Equipment" included and the hints in this manual and on the device.

### **Liability Limitation / Exemption from the Warranty Obligation**

In the event of damage to the device caused by failure to observe the hints in this manual or on the device and the included "General Safety Instructions for IT Equipment", Kontron Embedded Computers shall not be required to honor the warranty even during the warranty period and shall be exempted from the statutory accident liability obligation.



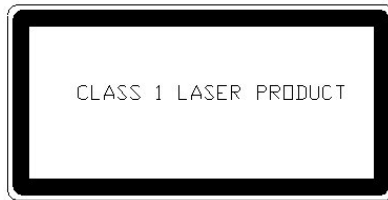
## Safety Instructions

Please consider the included “General Safety Instructions for IT Equipment”.



If at the rear side of the system (power supply area) is attached a hazard warning sign, please observe especially the appropriate instructions in the chapter “DC Connection”.

## Operation of Laser Source Devices



*Fig. 1: Warning about laser radiation*

The optional CD ROM and DVD drives contain light-emitting diodes (classified in accordance with EN 60825-1/A2.2001: LASER CLASS 1) and therefore must not be opened.

If the enclosure of such a drive is opened, invisible laser radiation is emitted. Do not allow yourself to be exposed to this radiation.

The laser system meets the code of Federal Regulations 21 CFR, 1040 for the USA and the Canadian Radiation Emitting Devices Act, REDR C 1370.





## Electrostatic Discharge (ESD)

A sudden discharge of electrostatic electricity can destroy static-sensitive devices or micro-circuitry. Therefore proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following precautions:

1. Transport boards in ESD-safe containers such as boxes or bags.
2. Keep electrostatic sensitive parts in their containers until they arrive at the ESD-safe workplace.
3. Always be properly grounded when touching a sensitive board, component, or assembly.
4. Store electrostatic-sensitive boards in protective packaging or on antistatic mats.

### Grounding Methods

The following measures help to avoid electrostatic damages to the device:

1. Cover workstations with approved antistatic material. Always wear a wrist strap connected to workplace as well as properly grounded tools and equipment.
2. Use antistatic mats, heel straps, or air ionizers for more protection.
3. Always handle electrostatically sensitive components by their edge or by their casing.
4. Avoid contact with pins, leads, or circuitry.
5. Turn off power and input signals before inserting and removing connectors or connecting test equipment.
6. Keep work area free of non-conductive materials such as ordinary plastic assembly aids and styrofoam.
7. Use field service tools such as cutters, screwdrivers, and vacuum cleaners which are conductive.
8. Always place drives and boards PCB-assembly-side down on the foam.

## Instructions for the Lithium Battery

The implemented motherboard or SBC-board is equipped with a Lithium battery. For the replacing of this battery please observe the instructions described in the chapter “Replacing the Lithium Battery”.



### Caution

Danger of explosion when replacing with wrong type of battery. Replace only with the same or equivalent type recommended by the manufacturer. The Lithium battery type must be UL listed.



Do not dispose of lithium batteries in general trash collection. Dispose of the battery according to the local regulations dealing with the disposal of these special materials, (e.g. to the collecting points for dispose of batteries).

## FCC Statement

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 interference when the equipment is operated in 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 residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(English): This Class A digital apparatus complies with the Canadian ICES-003.

(French): Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## **Electromagnetic Compatibility**

This product is intended only for use in industrial areas. The most recent version of the EMC guidelines (EMC Directive 2004/108/EC) and/or the German EMC laws apply. If the user modifies and/or adds to the equipment (e.g. installation of add-on cards), the prerequisites for the CE conformity declaration (safety requirements) may no longer apply.

## Scope of Delivery

- KISS 4U-Platform (corresponding the ordered configuration)
- Two keys for the front access door lock
- Power cord (for AC power supply units only)
- General Safety Instruction for IT Equipment

### Optional Parts

- Slide rails

## Type Label and Product Identification

The type label (Product Designation, Serial Number) and the inspection status label of the KISS 4U-Platform is placed on the right side of the unit.







System Type	Product Designation	Product Identification
KISS 4U	KISS 4U xxx-y	<p>KISS 4U = System type</p> <p>The "xxx"-Group is replaced by figures (100 through 999), representing the installed CPU board.</p> <p>"y" is replaced by a single letter (A through Z) representing the power supply installed in the system.</p>

# Product Description

KISS 4U is a scalable 4U (19") Platform, that can be alternatively equipped with either a motherboard or a **Single Board Computer (SBC)**-board. The KISS 4U-Platform hardware can be flexibly configured corresponding to the customized requirements. In addition, the sturdy design with excellent mechanical stability meets the demanding characteristics required for use in harsh industrial environments.

The KISS 4U-Platform is designed to be installed in 19" racks. It is also offered as tower- and desktop version.

### Versions of the KISS 4U-Platform:

		
<i>Fig. 2: Rackmount version with closed access door</i>	<i>Fig. 3: Tower version with closed access door</i>	<i>Fig. 4: Desktop version with closed access door</i>
		
<i>Fig. 2a: Rackmaunt version with opened access door</i>	<i>Fig. 3a: Tower- version with opened access door</i>	<i>Fig. 4a: Desktop- version with opened access door</i>

The system can be equipped with up to five front accessible drive bays (two 3.5" and three 5.25" bays) and one internal drive bay (1x 3.5").

The operating controls of the KISS 4U-Platform are located behind the front access door and include an "ATX-power button" and a "Reset-button" in the standard configuration.

LED-indicators are located on the front side; for the standard version these include the "power-LED" and "hard disk activity-LED".

Two of the system fans are installed at the front side of the unit. These are attached to the system by means of a fan slide-in module. The fan slide-in module simplifies the installation and removal of these components, including during operation.

The washable filter mat, which protects your system against dust and dirt, is located behind the air grilles of the front access door. The outside accessible filter mat is changeable while the KISS 4U-Platform is powered-up.

The type label is attached to the right side of the unit.



*Fig 5: KISS 4U-Platform*



Ensure the proper operating position for the KISS 4U systems:

- horizontal position for rack and desktop version
- vertical position for the tower version

When switching on the system, make sure that the air intake and exhaust openings are not obstructed by objects.



**For rack and desktop version only:**

Before putting the system into operation for the first time (before mounting / installation into an industrial cabinet), you have to open the unit as described in the "Accessing Internal Components" section in order to remove the drive locking screws (*fig. 6, 6a, 7, 7a pos. 13*).

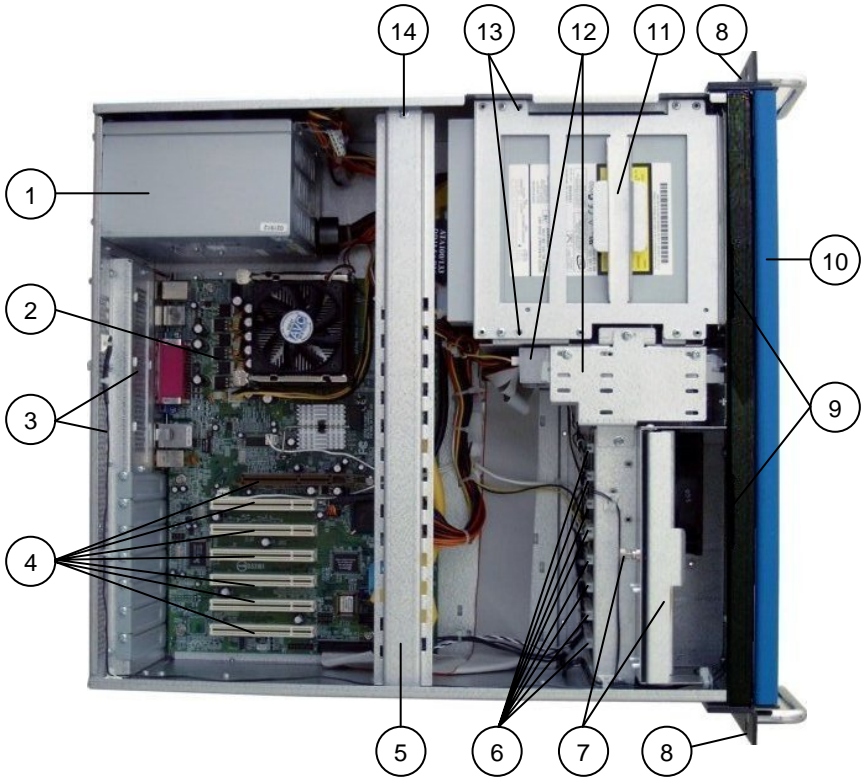


Fig 6: KISS 4U-Platform, opened rackmount version (with motherboard)

**Legend for figures: 6 and 6a**

- |  |   |
|--|---|
| 1 Power supply unit  | 10 Front access door  |
| 2 Motherboard (example)  | 11 Drive cage for 3x 5.25" drive bay and 1x 3.5" internal drive bay |
| 3 Exhaust openings on the rear side  | 12 Drive bracket for 2x 3.5" drive bay                              |
| 4 Free slots for expansion cards   | 13 Locking screws for the 5.25" drive                               |
| 5 Cards holder   | 14 Fastening screw for the card holder                              |
| 6 Card guides  | 15 External interfaces of the motherboard                           |
| 7 Fan slide-in module with captive screw   | 16 Grounding stud   |
| 8 19" rack mountable bracket with handle (not available for tower and desktop version) | 17 Expansion card slots   |
| 9 Guide openings for the cover   |   |

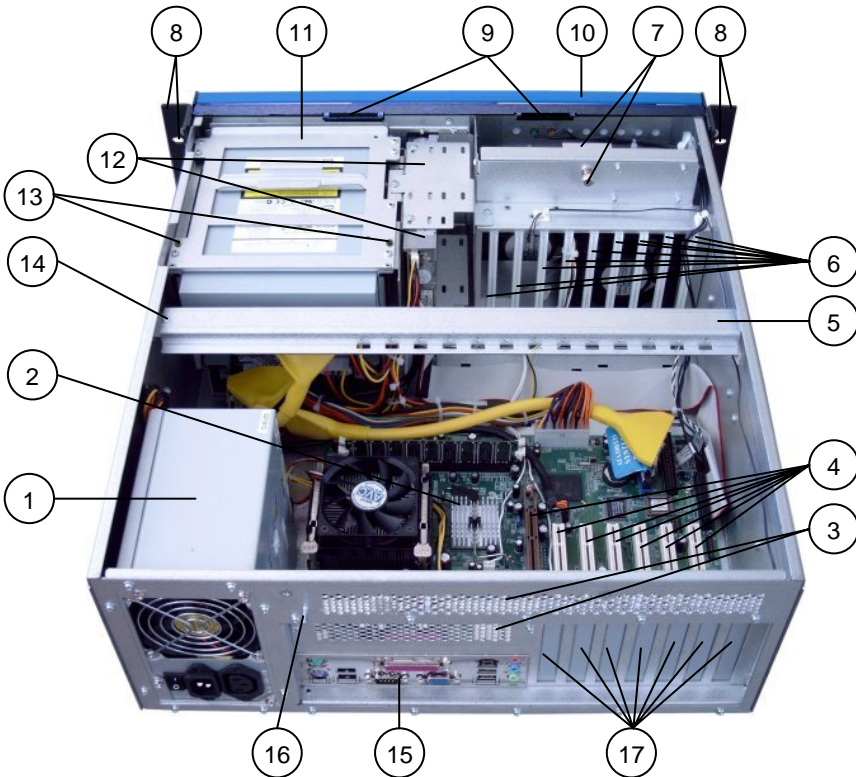


Fig 6a: KISS 4U-Platform, opened rackmount version (with motherboard)



When switching on the KISS 4U system, make sure that the air intake and exhaust openings are not obstructed by objects.



**For rack and desktop version only:**

Before putting the system into operation for the first time (before mounting / installation into an industrial cabinet), you have to open the unit as described in the "Accessing Internal Components" section in order to remove the drive locking screws (Fig. 6, 6a, 7, 7a pos. 13).



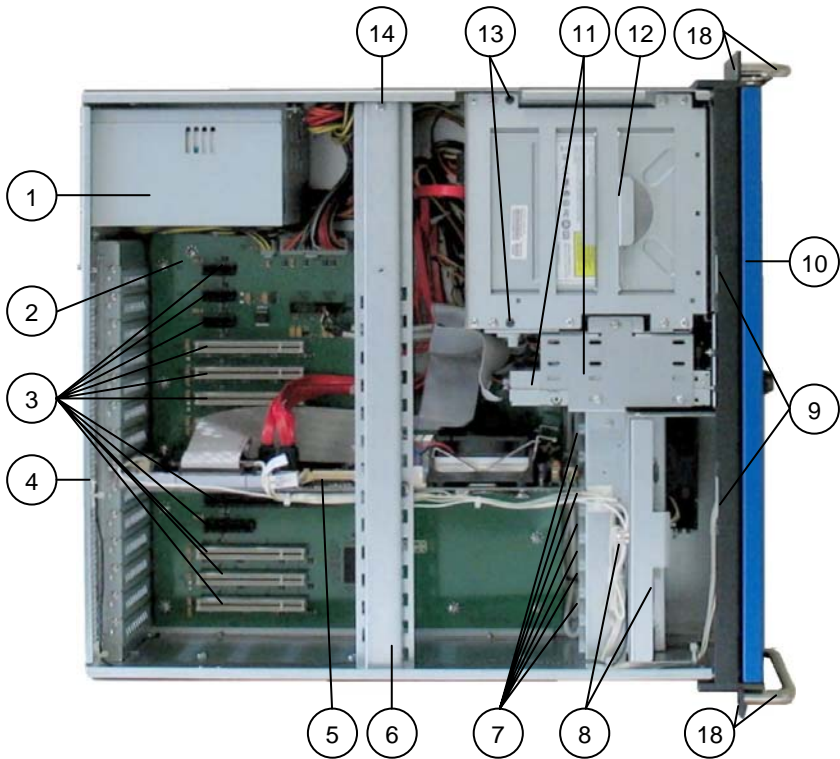


Fig. 7: KISS 4U-Platform, opened rackmount version (with SBC)

**Legend for figures: 7 and 7a:**

- |  |   |
|--|---|
| 1 Power supply unit  | 12 Drive cage for 3x 5.25" drive bay and 1x 3.5" internal drive bay                     |
| 2 Backplane (example)  | 13 Locking screws for the 5.25" drive   |
| 3 Free expansion PCI-slots (depends on the ordered system config.) | 14 Fastening screw for the card holder  |
| 4 Exhaust openings on the rear side                                | 15 External interfaces of the SBC-board   |
| 5 Single Board Computer (example)                                  | 16 Grounding stud   |
| 6 Cards holder   | 17 Expansion card slots   |
| 7 Card guides  | 18 19" rack mountable bracket with handle (not available for tower and desktop version) |
| 8 Fan slide-in module with captive knurled screw                   |   |
| 9 Guide openings for the cover                                     |   |
| 10 Front access door   |   |
| 11 Drive cage for 2x 3.5" drive bay                                |   |

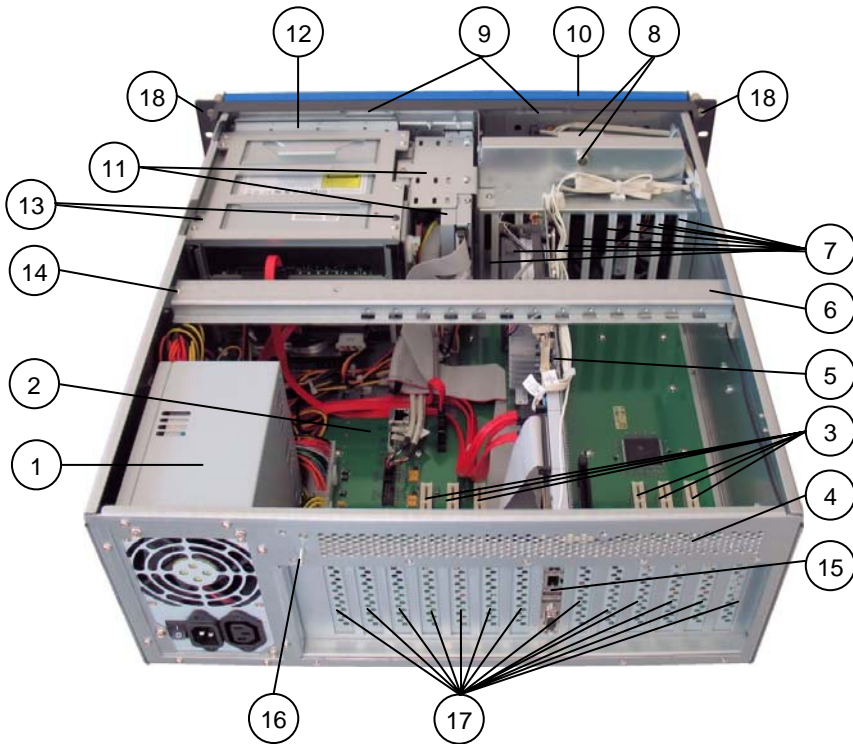


Fig. 7a: KISS 4U-Platform, opened rackmount version (with SBC)



When switching on the system, make sure that the air intake and exhaust openings are not obstructed by objects.



**For rack and desktop version only:**

Before putting the system into operation for the first time (before mounting / installation into an industrial cabinet), you have to open the unit as described in the "Accessing Internal Components" section in order to remove the drive locking screws (Fig. 6, 6a, 7, 7a pos. 13).

## Front Side

The system is available as rackmount version.

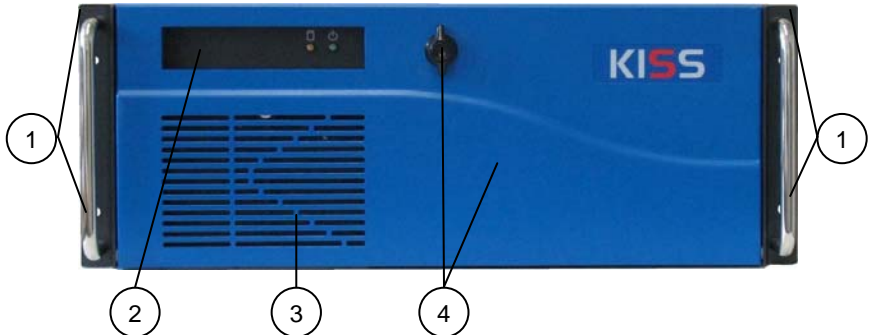
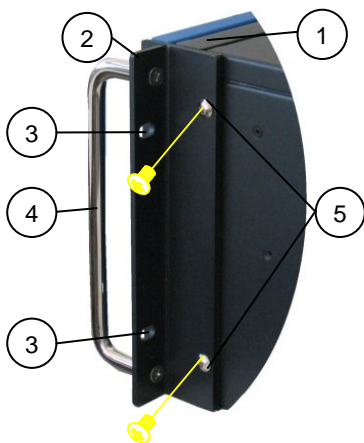


Fig. 8: Front side (rackmount version) with closed front access door

- |   |  |
|---|--|
| 1 19" rack mountable bracket with handle<br>(not available for tower version) | 3 Air grilles                              |
| 2 Cut-out for LED indicators  | 4 Front access door with<br>lock mechanism |

You can adapt your system to a desktop unit by removing the two 19" rack mountable brackets with handle (one off on each side).

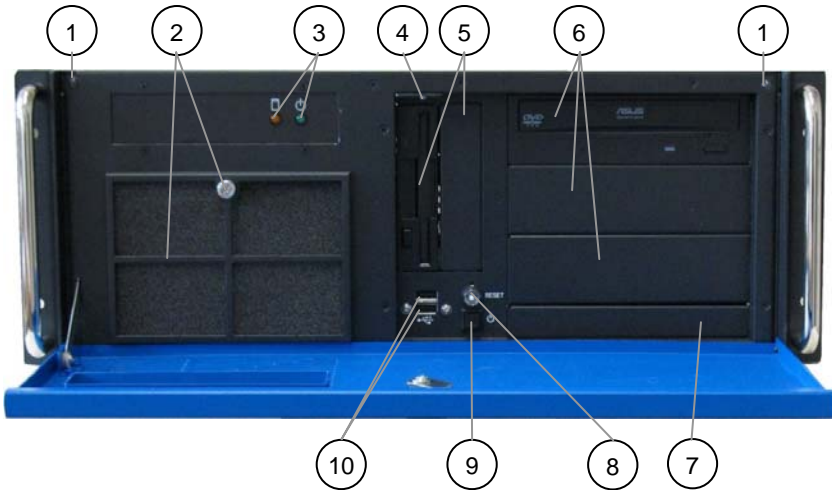


- |   |
|---|
| 1 Chassis of the KISS 4U-Platform                     |
| 2 19" rack mountable bracket with handle              |
| 3 Holes for mounting in rack cabinets                 |
| 4 Handles   |
| 5 Screws for fastening the 19" rack mountable bracket |

Fig. 9: 19" rack mountable bracket with fastening screws

The KISS 4U tower version is delivered without the 19" rack mountable brackets.

The operating controls (ATX-power button and reset button), the USB interfaces and the integrated drives are located at the front side of the KISS 4U-Platform, behind the front access door.



*Fig. 10: Front side (rackmount version) with opened front access door*

- |   |  |
|---|--|
| 1 Buffer for the front access door                  | 6 3x 5.25" external accessible drive bay (shown with one DVD-drive installed)      |
| 2 Bracket with knurled screw for the air filter mat | 7 1x internal 3.5"- or 1x external Slim-drive bay (not available in tower version) |
| 3 LED indicators                                    | 8 Reset-button   |
| 4 Slot for the locking mechanism                    | 9 ATX-power button   |
| 5 2x 3.5" drive bay (shown with one FDD installed)  | 10 2x USB interface  |

## Interfaces on the Front Side

### USB Interfaces

KISS 4U is equipped with two USB interfaces at the front side. These connectors allow you to connect different USB devices to the KISS 4U-Platform.



When USB devices are connected to the USB ports on the front of the device, the front access panel cannot be closed and locked.

### LED Indicators

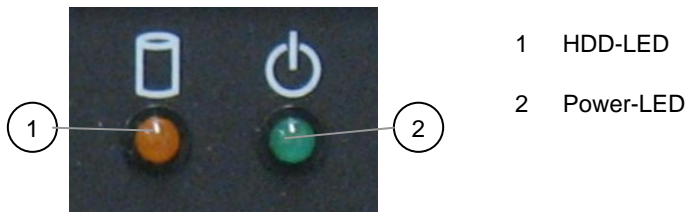
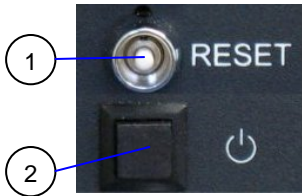


Fig. 11: LED indicators

Following LED indicators at the left front side of the KISS 4U-Platform:


LED Indicators	
<b>Power LED</b> (green)	Lights up green if the system switched on by pressing the "ATX-power button".  <b>Prerequisite:</b> The system must be attached by means of the power cord to an appropriate mains. The power switch of the PSU located on the rear side of the unit must be set to "On" (for those systems equipped with a PSU with PSU switch).
<b>HDD Activity LED</b> (orange)	Indicates hard disk activity.

## Operating Elements



- 1 Reset Button
- 2 ATX-Power Button

Fig 12: Operating elements

<b>ATX-power button</b>	Press this button to turn the system on or off. Please observe the setting options for the power button in the BIOS-Setup.
<b>Reset-button</b>	If your system no longer reacts, you have to restart the KISS 4U-Platform. Press the reset button to restart your system.
	When resetting all data in the main memory is erased. The system restarts without having to turn the computer off and on again.

## Front Access Door

You can protect the drives and operating elements at the front side of the KISS 4U-Platform from unauthorized use, by means of the front access door equipped with a securing lock mechanism (usable only when no USB devices are attached).



The key should be kept somewhere where it is not accessible to unauthorized persons.

The KISS 4U-Platform comes equipped with two keys. If the keys get lost or damaged, then the front access door can be opened only by Kontron Embedded Computers service personnel.



When USB devices are connected to the USB ports on the front of the device, the front access panel cannot be closed and locked.

## Filter Mat Holder

The filter mat holder is located behind the air grilles of the front access door inserted in the air filter holder. The filter mat protects your system against dust and dirt. It can be changed while the system is powered up (refer to the "Cleaning the Filter Mat" section).

## External Accessible Drive Bays

The KISS 4U system can be equipped with up to five externally accessible drives.

- 3x 5.25" drive bay (horizontal position)
- 2x 3.5" drive bay (vertical position)

## External Accessible Slim-Line or Internal 3.5" Drive Bay (Option)

The KISS 4U desktop and rackmount version can be optionally equipped with:

- 1x internal (not visible from the outside) 3.5" drive bracket in horizontal position (for IDE/SCSI/SATA hard disk drive)  
or
- 1x externally accessible slim-drive bay in horizontal position.



This option is not available in systems configured as tower version.

## Rear Side

Depending on the KISS-Platform configuration ordered, the rear panel will have the external interfaces of the integrated motherboard or SBC-board, any additional interfaces (in system configurations with an SBC-board), the power supply unit and the air exhaust openings.

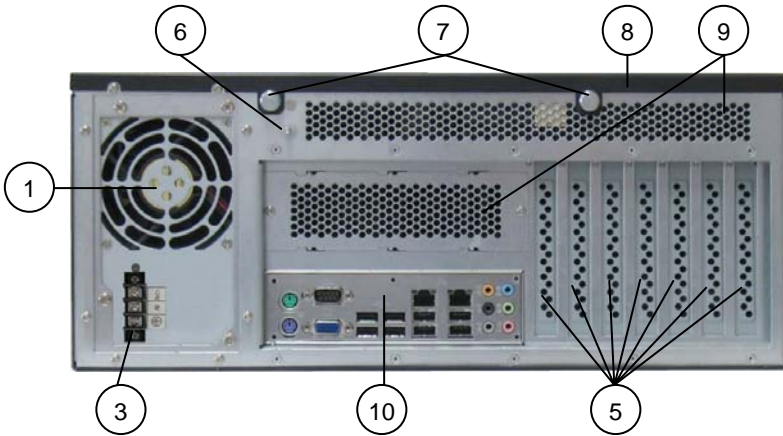


Fig. 13: Rear side of the KISS 4U with motherboard (configuration with DC PSU)

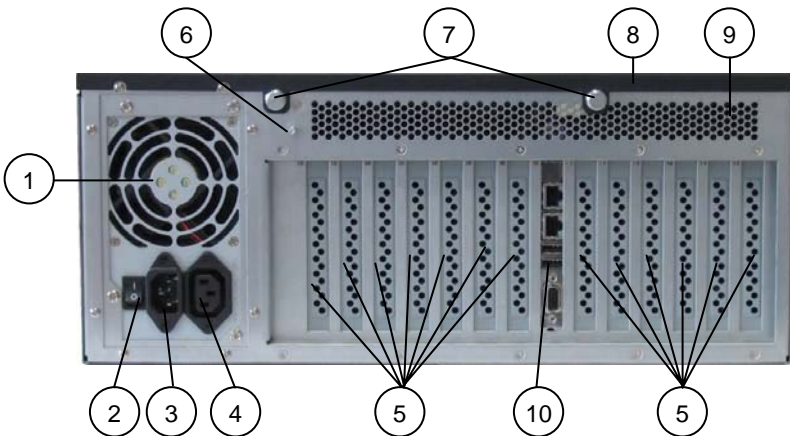


Fig. 13a: Rear side of the KISS 4U with SBC (configuration with AC PSU)



**Legend for figures: 13 and 13a:**

- |  |   |
|--|---|
| 1 (AC / DC) PSU Fan  | 6 Grounding stud  |
| 2 PSU On/Off switch (depending on the integrated PSU)                            | 7 Captive knurled screws to secure the cover  |
| 3 AC-power plug / DC screw terminals (depending on the equipped PSU)             | 8 Device cover  |
| 4 AC-socket for monitor (depending on the integrated PSU)                        | 9 Air exhaust openings  |
| 5 32 bit or 64 bit free expansion card slots (depending on the integrated board) | 10 Interfaces of the SBC-board or of the motherboards (depending on the system configuration) |

**Interfaces on the Rear Side**

The positioning and number of the KISS 4U-Platform interfaces may vary depending on the system configuration.

Information and technical data can be found in the corresponding board manual. You can download the relevant board manual for your system configuration from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product name.

**External Interfaces of the integrated Motherboard**

The external interfaces of the motherboard can be different, depending on the integrated motherboard.

A detailed description of the ports can be found in the manual of the installed motherboard.

**External Interfaces of the integrated SBC-board**

The external interfaces of the SBC-board can be different, depending on the integrated SBC-board.

A detailed description of the ports can be found in the manual of the installed SBC-board.

## Additional Interfaces in Configuration with SBC-Board

### Serial Interfaces (COM1, COM2)

Depending on the installed SBC-board on the rear side of the system can be available additional interfaces. These connections are available as 9-pin D-SUB plug and allow you to connect serial peripherals. These additional interfaces are configured as RS232.



A detailed description of the SBC ports (for your system configuration) can be found in the manual of the equipped SBC-board.

You can download the relevant board manual for your system configuration from our web site at [www.kontron.com](http://www.kontron.com) by selecting the board name. Refer to the "Configuration Guide" on our web site.

## Power Supply Unit

The power supply unit (PSU) is placed on the rear side of the unit.

The KISS 4U Platform can optional be equipped with an AC wide rage PSU, a redundant AC wide rage PSU or with a +24V DC PSU.

For information about the integrated power supply unit (PSU) and the supply voltage of your system, refer to the type label attached on the right side of the unit.



*Fig. 14: Detail - Wide Range PSU 300W (AC)*



*Fig. 14a: Detail - Wide Range PSU 460W (AC)*



*Fig. 14b: Detail - redundant Wide Range PSU (AC)*



*Fig. 14c: Detail - +24V DC PSU*

## Fan Slide-In Module

Two system fans are firmly mounted in a user friendly, exchangeable fan slide-in module (hot swap). The fan slide-in module is installed in the fan case located at the front side of the system.



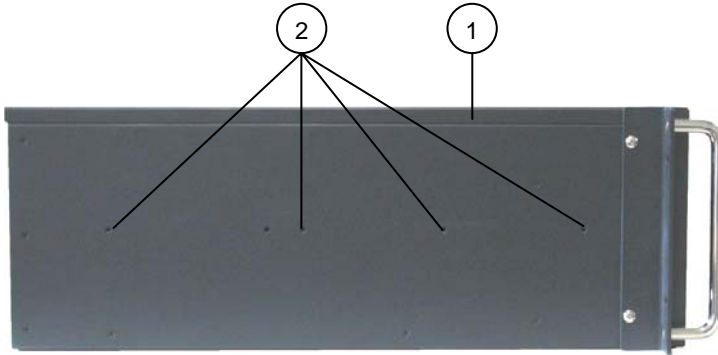
The KISS 4U-Platform should only be operated with a functioning fan slide-in module (refer to the “Replacing the System’s Fans” section).

Defective components should only be replaced by Kontron original spare parts.

- ❑ part number of the fan slide-in module: 0-0084-3604

## Side View

Four M4 metric tapped holes are available at the left and right side of the unit. These can be used in order to attach slide rails (not included in the scope of delivery) to the KISS 4U-Platform for system installation into a 19" industrial cabinet. Refer to the "Slide Rails (Option)" chapter.



*Fig. 15: Tapped M4 metric holes to attach a telescope rail*

- 1 Side view of the KISS 4U-Platform
- 2 4x tapped M4 metric holes (on both sides)

# Assembly, Disassembly

## Attaching the Rubber Feet

The rubber feet can be used for the desktop version of the system. Please follow these steps to attach the rubber feet to the bottom side of the chassis:



Before attempting to mount the rubber feet, the system must be powered-down and the power cord has to be disconnected from the mains supply.

1. Turn your system off and disconnect it from the mains supply.
2. Make sure that all cards are secured into unit and that the system cover is installed and secured.
3. Turn the system upside down.
4. Remove the protect foil from the delivered self adhesive rubber feet.
5. Attach the self adhesive rubber feet to the bottom side of the chassis.

## Removing the Drive Locking Screws

Before you start-up the system for the first time and before mounting/mounting into an industrial cabinet, open the system as described in the “Accessing Internal Components” section and remove the drive locking screws (for rackmount and desktop version only).

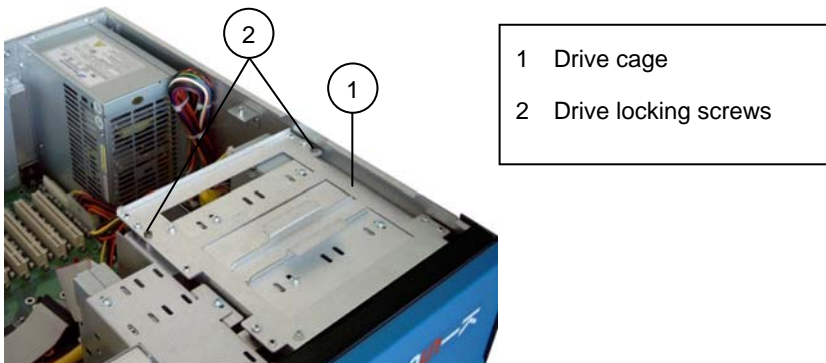


Fig. 16: KISS 4U-Drive cage with drive locking screws

## Accessing Internal Components

This section contains important information that you should read before accessing the internal components. You should follow these procedures when handling any boards or replacing the fan slide-in module.

### Installing/Removing the Expansion Cards



When you install (or remove) expansion cards please consider the corresponding safety instruction of the included “General Safety Instruction for IT Equipment”.

**Caution:**

**Hazardous Energy > 240 VA are present inside the chassis! Activities such as working inside the system or handling the expansion cards have to be carried-out by the service person for this area or a suitably instructed user which are familiar with the associated dangers.**



Please observe the safety instruction for handling assemblies with static sensitive device. Failure to take heed of this warning instruction can result in damage to the device.



Please consult the documentation provided by the manufacturer of the expansion card for instructions before attempting to install/remove an expansion card into/from the KISS 4U-Platform.

To install or remove an expansion card, perform the following steps:

1. Turn off all power sources. Disconnect the power cord from power source.
2. Loosen the captive knurled screws on the rear side of the unit that secure the cover.



*Fig. 17: Loosen the captive knurled screws*

3. Lift the cover away.

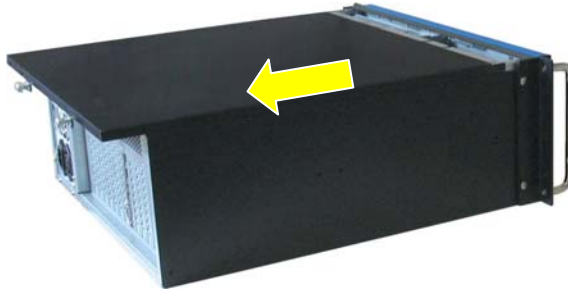


Fig. 18: Removing the device cover



Fig. 19: KISS 4U-Platform without cover

4. To remove the card holder, loosen the screw of the card holder (1). Slide the card hold-down bracket to right (2), to pull it out from the two laterally located bolts. Lift the card hold-down bracket away (3). Retain the card hold-down bracket and the screw for later use.

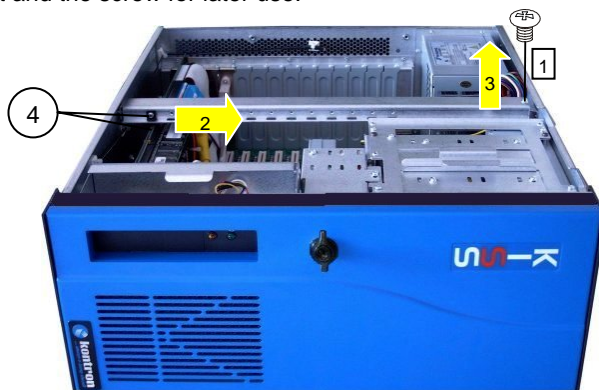


Fig. 20: Removing the fastening screw and the card hold-down bracket



Fig. 21: Bolts and fastening point for the card hold-down bracket

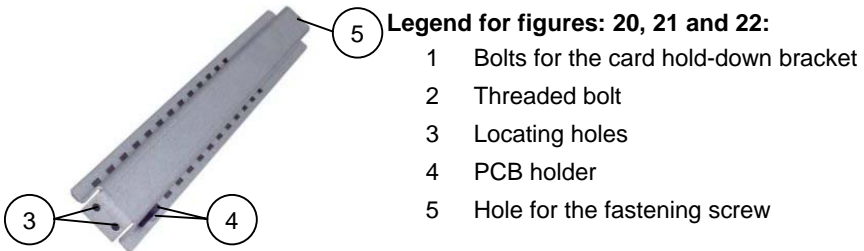


Fig. 22: card hold-down bracket

5. Put/pull the expansion card into/out from the expansion card slot of the backplane/motherboard and fasten the mounting bracket of the expansion card/filler bracket to the rear slot of the device.
6. Reinstall the card holder and secure it using the retaining screw (see Fig. 20).
7. The PCB holder (refer to Fig.: 20, Fig. 22, pos. 4) has to be installed into the appropriate hole of the card hold-down bracket by means of the provided screw, if necessary. Fix the upper edge of the expansion card (especially for full-length card) into the slot of the PCB holder (height adjustable). Thus the card is firmly kept in place during high mechanical load (shock and vibrations).
8. Close the KISS 4U-Platform and secure the cover with the captive knurled screws.



---

## Instruction for Installation in a 19" Cabinet



In order to setting-up installing / removing the KISS 4U-Platform into/from a 19" industrial cabinet, please observe the instructions described in this manual.

The system has to be mounted and installed only by the service person for this area familiar with the associated dangers.

Ensure there is sufficient air circulation around the device when installing the KISS 4U-Platform.

The openings for air intake and exhaust on the device must not be obstructed by objects.

Leave at least 5 cm (1.969 ") of free space in front and behind the unit to prevent the device from possibly overheating!

The KISS 4U Platform should be installed into a 19" industrial cabinet with slide rails.

The 19" industrial cabinet must stand firmly in place. You can improve its stability by placing the components into it from the bottom up. Heavy components should be placed down below. If further stabilization is necessary, then bolt the 19" industrial cabinet to the floor or anchor it on the wall.

The voltage feeds must not be overloaded. Adjust the cabling and the external overcharge protection to correspond with the electrical data indicated on the type label.

The type label is located on right side of the unit.

# Starting Up



The rated voltage of the mains (AC/DC) must agree with the voltage value on the type label.

## Power Cord Connection

The AC power plug / DC screw terminals of the PSU (depending on the configuration of your system) is located on the rear side of the KISS 4U-Platform.

### AC Connection



**AC power plug**

*Fig. 23: KISS 4U (example with AC-power connection)*

1. Connect the supplied AC power cord into the system AC power plug (see fig. 23).
2. Connect the other end of the AC power cord into a corresponding mains outlet.



Use the power cord suitable for the mains in your country.

Do not remove or alter the grounding prong on the power cord. In situations where a two-slot receptacle is present, have it replaced with a properly grounded three-prong grounding type receptacle.

## DC Connection

The DC version of the KISS 4U platform is equipped with a +24V DC PSU (with three screw terminals and without an ON/OFF power switch).



The KISS 4U (DC version) is designed without a disconnecting device!

In order to reduce injuries and damage by hazardous voltages (risk to injury by direct or indirect contact with electrical energized bare parts of the DC screw terminals) the following measures should be adopted:

- ❑ The KISS 4U system should be mounted and installed into a SERVICE ACCESS AREA or into a RESTRICTED ACCESS LOCATION].
- ❑ It must be ensured that the system can be powered ON and OFF via a readily accessible two-pole disconnect device that shall be incorporated in the building installation wiring (e.g. overload protection switch).
- ❑ Users which are admitted to the SERVICE ACCESS AREA or to the RESTRICTED ACCESS LOCATION must be suitably instructed and sufficiently informed about the associated dangers.



Fig. 23: KISS 4U-System (example) - DC Connection (permanently connected)

1. Ensure that the system is disconnected from the DC mains by the disconnect device.
2. Loosen the screws on the DC terminal far enough so that you can insert the end of the power cord [Minimum cross section: 1.25 mm<sup>2</sup> (16 AWG)]. Make sure that you have the right polarity of the connection.
3. Fasten the screws to secure the DC power cord into the DC terminal.

## Operating System and Hardware Components Drivers

The KISS 4U system can optionally be supplied with or without a pre- installed operating system.

If you have ordered your system with a pre- installed operating system, all drivers are installed, corresponding to the ordered computer configuration (optional hardware components). Your computer is fully functional, when you switch it on for the first time.

If you have ordered your system without a pre- installed operating system, you have to install the operating system and the corresponding drivers for the ordered computer configuration (optional hardware components).



The needed drivers for the hardware configuration of your system can be downloaded from the web page [www.kontron.com](http://www.kontron.com) by selecting the product name.

Consider the manufacturer's specifications for the operating system and the integrated hardware components.

## Maintenance and Prevention

Kontron Embedded Computers systems require minimal maintenance and care to keep them operating correctly.

- Occasionally wipe the system with a soft dry cloth.
- You should only remove persistent dirt by use of a soft, slightly damp cloth (use only a mild detergent).
- Clean the air filter mats regularly (refer to the “Cleaning the Filter Mat” section).

## Replacing the System's Fans



The KISS 4U-Platform should only be operated with a functioning fan slide-in module (refer to the “Replacing the System's Fans” section).

Defective components should only be replaced by Kontron original spare parts.

- part number of the fan slide-in module: 0-0084-3604



The fan slide-in module may be changed while the KISS 4U-Platform is powered-up. This maintenance should only be carried out by service personnel or users suitably instructed and sufficiently informed about the associated dangers.

Keep your hands and fingers away from rotating parts of the fans. Before taking out the fan slide-in module, wait until the fans have totally stopped.

To replace fan slide-in module, proceed as follows:

1. Open the unit as described in the “Accessing Internal Components” section, step 2-3. Pull out the device cover only so far as necessary to have access to the fan slide-in module.
2. Loosen the captive knurled screw (Fig. 24, pos. 4). Use the handle (Fig. 24, 24a, pos. 2) of the fan slide-in module and pull it out from the fan case (Fig. 24c, pos. 9).

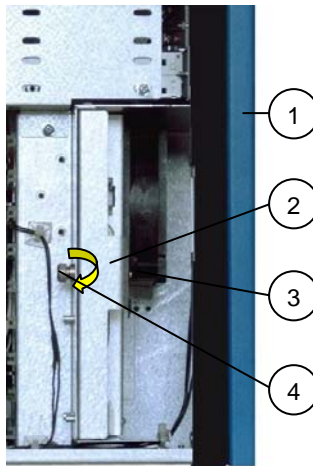


Fig. 24: KISS 4U-Platform with fan slide-in module (Detail)

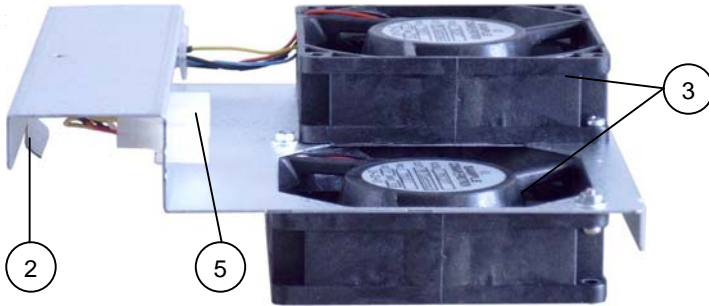


Fig. 24a: Side view of the fan slide-in module

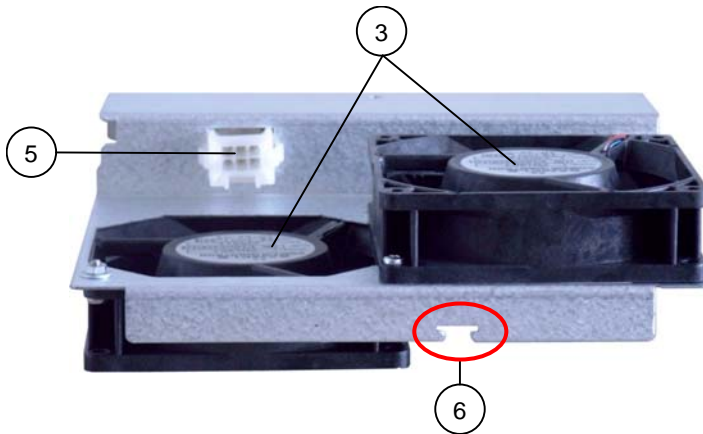
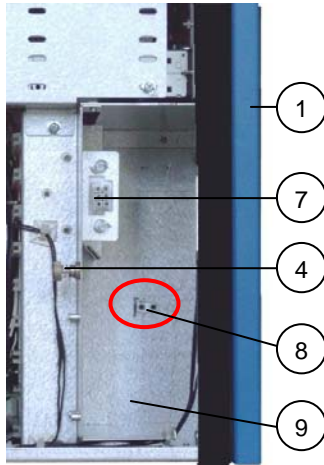


Fig. 24b: Bottom view of the fan slide-in module

**Legend for figures: 24, 24a, 24b and 24c**

- |  |  |
|--|--|
| 1 Front access door of the system                                  | 6 Centering slot on the bottom side of the fan slide-in module |
| 2 Handle of the fan slide-in module                                | 7 Socket in the fan case for fan control                       |
| 3 2x system fan (temperature controlled, independently controlled) | 8 Centering angle  |
| 4 Captive knurled screw  | 9 Fan case   |
| 5 Plug for fan control   |  |



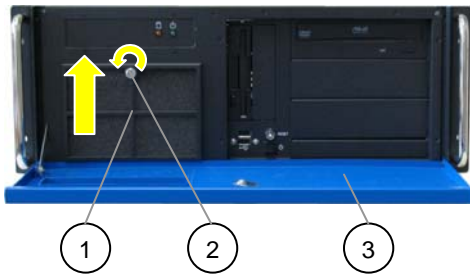
*Fig. 24c: Fan case of the KISS 4U-Platform without fan slide-in module*

3. Replace the fan slide-in module with a new functional module. Push the fan slide-in module carefully into the fan case socket connector, by aligning the centering angle (*Fig. 24c, pos. 8*) to the centering slot (*Fig. 24b, pos. 6*).
4. Secure the fan slide-in module with the captive knurled screw.
5. Close the KISS 4U-Platform and secure the cover with the captive knurled screws.



## Cleaning the Filter Mat

The filter mat is inserted in the filter mat holder at the front side of the system. Cleaning frequency of the filter mat will depend on the operating environment. If the environment is extremely dusty, clean the filter mat more often. The filter mat may be changed while the system is powered-up.



- 1 Filter mat holder
- 2 Fastening screw of the filter mat holder
- 3 Front access door

Fig. 25: Location of the filter mat

To replace or clean the air filter mat, proceed as follows:

1. Open the front access door.
2. Loosen the knurled screw that secure the filter mat holder with the air filter mat to the chassis.
3. Pull out the filter mat holder into the marked direction.
4. Remove the dirty air filter mat.
5. To clean the filter mat:
  - Rinse in water (up to approx. 40°C; you may add mild-duty commercial detergent).
  - It is also possible to beat it out, vacuum it or blast it with warm compressed air.
  - If the filter is soiled with greasy dust, you should rinse it with warm water with degreaser added. Do not clean the filter mat with a piercing jet of water or wring it out.

- After cleaning and drying the filter mat, replace it into the filter mat holder. Replace the filter mat holder to the front side of the chassis (see Fig. 26, pos. 3 and Fig. 26a, pos. 4).
- Tighten the screw to secure the filter mat holder to the chassis.



When inserting the filter mat, ensure that the denser side of the mat is facing the fans.



Defective components may be replaced only by Kontron original spare parts.

part number of the filter mat: 0-0084-2953

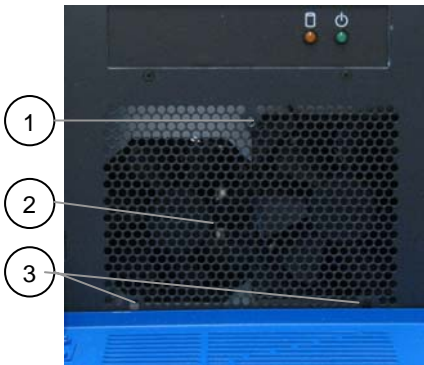


Fig. 26: Location for filter mat holder

**Legend for figures: 26, 26a and 26b:**

- Threaded M4 metric stud
- Air intake openings
- Centering holes for the filter mat holder
- Locking tabs
- Inserted filter mat
- Fastening screw of the filter mat holder
- Filter mat holder

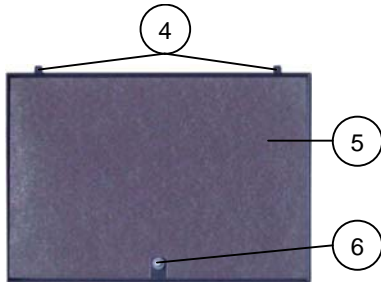


Fig. 26a: Filter mat holder with filter mat

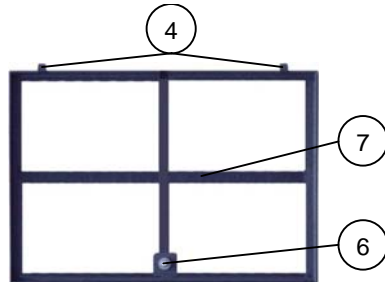


Fig. 26b: Filter mat holder without filter mat

## Replacing the Lithium Battery

The integrated motherboard or SBC-board of your system is equipped with a lithium battery. To replace the battery, please proceed as follows:

1. Open the unit as described in the “Installing/Removing the Expansion Cards” chapter (step 1-4).
2. If your system has expansion cards, first remove the cards and their corresponding data cables in order to have access to the lithium battery.
3. Remove the old battery by pressing outwards on the ejector spring.
4. Place the new battery into the socket.
5. Make sure that you insert the battery the right way around. The plus pole must be on the top!
6. The lithium battery must be replaced with an identical battery or a battery type recommended by Kontron Embedded Computers. The Lithium battery type must be UL listed.
7. Reinstall the expansion cards which you removed and reconnect their data cables.
8. Close the Unit as described in chapter “Installing/Removing the Expansion Cards” (step 5-8).



### Caution

Danger of explosion when replacing with wrong type of battery. Replace only with the same or equivalent type recommended by the manufacturer. The Lithium battery type must be UL listed.



Do not dispose of lithium batteries in general trash collection. Dispose of the battery according to the local regulations dealing with the disposal of special materials, (e.g. at the designated collecting points for dispose of batteries).

## Slide Rails (Option)

Kontron offers slide rails for installing the KISS 4U-Platform into a 19" industrial cabinet. These can be ordered under:

“Slide rails” - Set No.: 3-A260-0244.

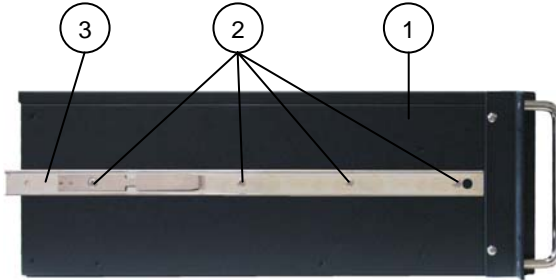


Fig. 27: Attaching the inner side of the slide rail



Fig. 27a: KISS 4U-Plattform with slide rail

### Legend for figures: 27 and 27a:

- |   |  |   |  |
|---|--|---|--|
| 1 | Side view of the KISS 4U-Plattform                     | 3 | Slide rail inner part  |
| 2 | 4x M4x6 rounded head screw (per each side of the unit) | 4 | Slide rail outer part [with brackets (short at the front, long at the rear)] |



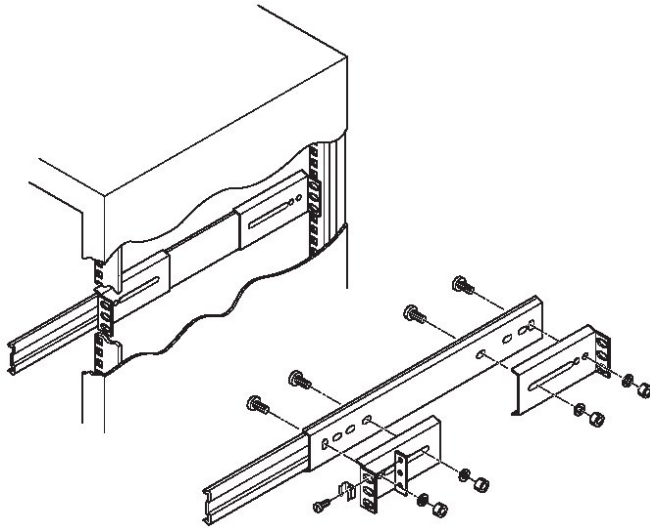
Only the specified M4x6 screws should be used to attach telescope rails to the KISS 4U-Plattform.

## Slide Rails Accessories and Assembling

The “Slide Rails” set consists of following elements:

- ❑ One pair of slide rails
- ❑ One pair of short front brackets (with screws and washers)
- ❑ One pair of long rear brackets (with screws and washers)
- ❑ 2x bar nut kits
- ❑ 8x M4x6 flathead screws

For assembling refer to *Fig. 28*.



*Fig. 28: Assembling the “Telescopic Rail” set*



Short brackets are usually used at the front of the chassis and long brackets at the rear.

### **Mounting into an Industrial Cabinet (with Slide Rails)**

1. Ensure that the sides of the industrial cabinet are parallel and that the sides of the KISS 4U chassis are parallel and square to the industrial cabinet.
2. Using mounting kits and brackets, mount the brackets to the outer part of the slide rails (see *Fig. 27a, pos. 4*). Screw the back brackets on loosely.
3. Install the slide rails into the industrial cabinet.
4. Mount the inner part (see *Fig. 27a, pos. 3*) of the slide rails to the chassis.
5. Insert the KISS 4U-Platform into the industrial cabinet.
6. Check for even and smooth movement of the chassis.
7. If binding occurs, or slide movement is not satisfactory:
  - Loosen the screws on the rear mount brackets and adjust the brackets.
  - Loosen the screws on the chassis side.
  - Cycle the unit a few times.
  - If movement has improved tighten the screws and cycle again.

## Main Specifications

<b>KISS 4U-xxx-y</b>	
<b>Installed Board</b>	*refer to "Configuration Guide"
<b>Interfaces</b>	Interfaces of the board slot  Additional interfaces: on-board interfaces (customized)  * refer to the manual of the installed board
<b>Drive Bays</b>	* Optional configuration (depending on the ordered system configuration (refer also to "Configuration Guide"))
<b>Free Expansion Card Slots</b>	Depending on the installed board
<b>Power Consumption per Expansion Slot (PCI)</b>	max. 25 W
<b>Lithium Batterie</b>	CR2032; 3.0 V; 0.22Ah
<b>Rated Voltage Range</b>	Refer to the type label



KISS 4U = System type

The "xxx"-Group is replaced by figures (100 through 999), representing the built-in CPU board.

"y" is replaced by a single letter (A through Z) representing the power supply installed in the system.\*

The corresponding "Configuration Guide" and the manual of the installed board can be downloaded from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product name.

## Electrical Specifications

The electrical specification you can read off on the type label of your KISS 4U-Platform.

## Mechanical Specifications

Dimension	KISS 4U
Height	4U (177 mm) (6.968 ")
Width	Front: 19"; Gehäuse: 430 mm (16.9")
Depth	Chassis: 471.5 mm (18.543")
Weight	Approx. 15 kg (33.069 lbs.)
Chassis	Chassis: steel sheet, black (RAL 7021) Access door: steel sheet, blue (RAL 5017)

## Environmental Specifications

Operating temperature / relative humidity	0 ... +50 °C / 20-90 % not condensing (32 ... 122 °F / 20-90 %) not condensing
Storage / transit temp. / relative humidity	-20 ... +70 °C / 10-90 % not condensing (-4 ... 158 °F / 10-90 %) not condensing
Operating altitude	3,048 m (10,000 ft)
Storage / transit altitude	10,000 m (32,810 ft)
Operating shock	15 G, 11 ms Dauer, Halbsinus
Storage/transit shock	30 G., 11 ms Dauer, Halbsinus
Operating vibration	10 – 500 Hz, 1.0 G
Storage / transit vibration	10 – 500 Hz, 2.0 G
Acoustic noise	<35 dB at 1m in front of the system, full load
Protection Class	Front IP20



## CE Directives and Standards

CE Directives	
Electrical Safety	General Product Safety Directive (GPSD) 2001/95/EC Low Voltage Directive (LVD) 2006/95/EC
ElectroMagnetic Compatibility (EMC)	EMC Directive 2004/108/EC
CE Marking	Council Directive 93/68/EEC

Electrical Safety	Harmonized Standards
EUROPE	Information technology equipment - Safety - Part 1: General requirements EN 60950-1: 2006
U.S.A. / KANADA	to meet to UL60950-1:2006

EMC	Harmonized Standards
EU	Generic emission standard for industrial environments (Emission): EN 61000-6-4:2007  Generic standards - Immunity for industrial environments (Immunity): EN 61000-6-2:2005
U.S.A.	FCC 47 CFR Part 15, Class A
KANADA	ICES-003, Class A

# Standard Interfaces – Pin Assignments

Low-active are indicated by a minus sign.

## Serial interface COM (RS232)

Pin	Signal Name	9-pin D-SUB Connector
1	DCD (Data Carrier Detect)	
2	RXD (Receive Data)	
3	TXD (Transmit Data)	
4	DTR (Data Terminal Ready)	
5	GND (Signal Ground)	
6	DSR (Data Set Ready)	
7	RTS (Request to Send)	
8	CTS (Clear to Send)	
9	RI (Ring Indicator)	

## Parallel Port (LPT)

Pin	Signal Name	25-pin D-SUB Connector (female)
1	–STROBE	
2	DATA0	
3	DATA1	
4	DATA2	
5	DATA3	
6	DATA4	
7	DATA5	
8	DATA6	
9	DATA7	
10	–ACKN	
11	BUSY	
12	PE	
13	SELECT	
14	–AUTOFD	
15	–ERROR	
16	–INIT	
17	–SLCTIN	
18–25	GND	

## PS/2 Mouse Connector

Pin	Signal Name	6-pin Mini-DIN Connector
1	Mouse data	
2	N.C.	
3	GND	
4	+5 V	
5	Mouse clock	
6	N.C.	

## PS/2 Keyboard Connector

Pin	Signal Name	6-pin Mini-DIN Connector
1	Keyboard data	
2	N.C.	
3	GND	
4	+5 V	
5	Keyboard clock	
6	V.C.	

## VGA Port

Pin	Signal Name	15-pin D-SUB Connector (female)
1	Analog red output	
2	Analog green output	
3	Analog blue output	
4	N.C.	
5–8	GND	
9	+5 V (DDC)	
10	GND	
11	N.C.	
12	SDA (DDC)	
13	TTL HSync	
14	TTL VSync	
15	SCL (DDC)	

## USB Port

Pin	Signal Name	4-pin USB Connector Type A Version 2.0
1	VCC	
2	Data-	
3	Data+	
4	GND	

# Technical Support

For technical support, please contact our Technical Support team:

Tel: +49 (0)9461 950-104

Fax: +49 (0)9461 950-200

e-mail: [support@kontron.com](mailto:support@kontron.com)

Have the following details ready:

- the device's article number (P/No #),
- the device's serial number (S/No #) The serial number can be found on the name plate on the right hand side of the device.

Explain the nature of your problem to the service technician.

Should you require further information about Kontron Embedded Computers, our products or services, please contact us on the aforementioned telephone and fax numbers, or at: [www.kontron.com](http://www.kontron.com) or write to us at:

Kontron Embedded Computers GmbH

Oskar-von-Miller-Str. 1

85386 Eching

Germany

## Returning Defective Merchandise

Before you return any device that is not functioning correctly to Kontron Embedded Computers, please work through the following list:

1. Contact our Customer Service department to obtain an RMA number.  
Fax: (+49) 8165-77 412  
e-mail: [service@kontron.com](mailto:service@kontron.com)
2. Ensure that you have received an RMA number from Kontron Customer Services before returning any device. Write this number clearly on the outside of the package that you are sending to us.
3. Describe the fault that has occurred.
4. Please provide the name and telephone number of a person we can contact to obtain more information, where necessary. Where possible, please enclose all the necessary customs documents and invoices.
5. When returning a device:
  - Pack it securely in its original box.
  - Enclose a copy of the RMA form with the consignment.