

# » Kontron User's Guide «



## KISS 4U V2

User's Guide (Version V1.01)  
0-0096-6766

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## 2. Introduction

Kontron Europe 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 Europe products. The attached documentation does not entail any guarantee on the part of Kontron Europe with respect to technical processes described in the manual or any product characteristics set out in the manual. Kontron Europe does not accept any liability for any printing errors or other inaccuracies in the manual unless it can be proven that Kontron Europe is aware of such errors or inaccuracies or that Kontron Europe is unaware of these as a result of gross negligence and Kontron Europe has failed to eliminate these errors or inaccuracies for this reason. Kontron Europe 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 Europe.

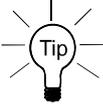
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## 2.1. Symbols used in this Manual

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.

## 3. Important Instructions

This manual provides important information required for the proper operation of the KISS 4U V2 platform!

This chapter contains instructions which must be observed when working with the KISS 4U V2 platform.

### 3.1. Warranty Note

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.

### 3.2. Exclusion of Accident Liability Obligation

Kontron Europe shall be exempted from the statutory accident liability obligation if the user fails to observe the included document: "General Safety Instructions for IT Equipment" the hints in this manual or eventually the warning signs label on the device.

### 3.3. Liability Limitation / Exemption from the Warranty Obligation

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

## 4. General Safety Instructions for IT Equipment



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

**Caution:**

**Energy hazards > 240 VA are present inside the chassis!**

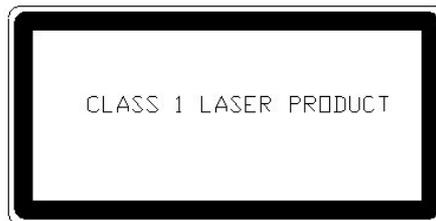
**Activities such as system expansion with expansion cards, or maintenance have to be carried-out by qualified personnel familiar with the associated dangers!**

**The installation instructions for the KISS 4U V2 Platform is the responsibility of the distributor.**

When used as intended the KISS 4U V2 platform is to operate only closed and locked.

Only when the cover is properly installed, secured with the knurled screws on the rear and the cover fastening screw on the front, and the access panel is locked with the key, it is ensured that the user doesn't have access to the internal parts of the KISS 4U V2 platform, loaded with hazardous energy.

### 4.1. Operation of Laser Source Devices



*Fig. 1: Laser radiation warning label*

The optional DVD drives contain light-emitting diodes (classified in accordance with IEC 825-1:1993: 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.



## 4.2. Electrostatic Discharge (ESD)

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

1. Transport boards in static-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.

### 4.2.1. 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 anti-static mats, heel straps, or air ionizers to give added protection.
3. Always handle electrostatic 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.

## 4.3. Instructions for the Lithium Battery

The installed motherboard or SBC (Single Board Computer) is equipped with a Lithium battery. When replacing the lithium battery, please follow the corresponding instructions in the chapter 10.3 "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 recognized.



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).

## 5. Electromagnetic Compatibility (Class A Device)

### 5.1. Electromagnetic Compatibility (EU)

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.

**Warning!**

This is a class A product. In domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### 5.2. FCC Statement (USA)

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.

### 5.3. EMC Compliance (Canada)

The method of compliance is self-declaration to Canadian standard ICES-003:

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

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

## 6. Scope of Delivery

- KISS 4U V2 platform (system configuration ordered)
- Two keys for the access panel lock
- Rubber feet (self-adhesive)
- AC power cable
- General Safety Instruction for IT Equipment

### Optional Parts

- Slide Rails (PN: 1016-5807)
- Rack Slide Rails Kit for KISS 1U and KISS 2U/4U V2 (PN: 1051-7200)

### 6.1. Type Label and Product Identification

The type label (product designation, serial number) and the inspection status label of your KISS 4U V2 platform are located on the right side of the device.

System Type	Product Designation	Product Identification
KISS 4U V2	KISS 4U V2-xxxxxxx-y	<p>KISS 4U V2 = System type</p> <p>The "xxxxxxx" group is replaced by up to a max. 8-digit combination of numbers, letter or space, and represents the installed CPU board</p> <p>The "y" is replaced by a single letter (A through Z) representing the power supply installed into the system.</p>

#### Note for power supplies (PSU):

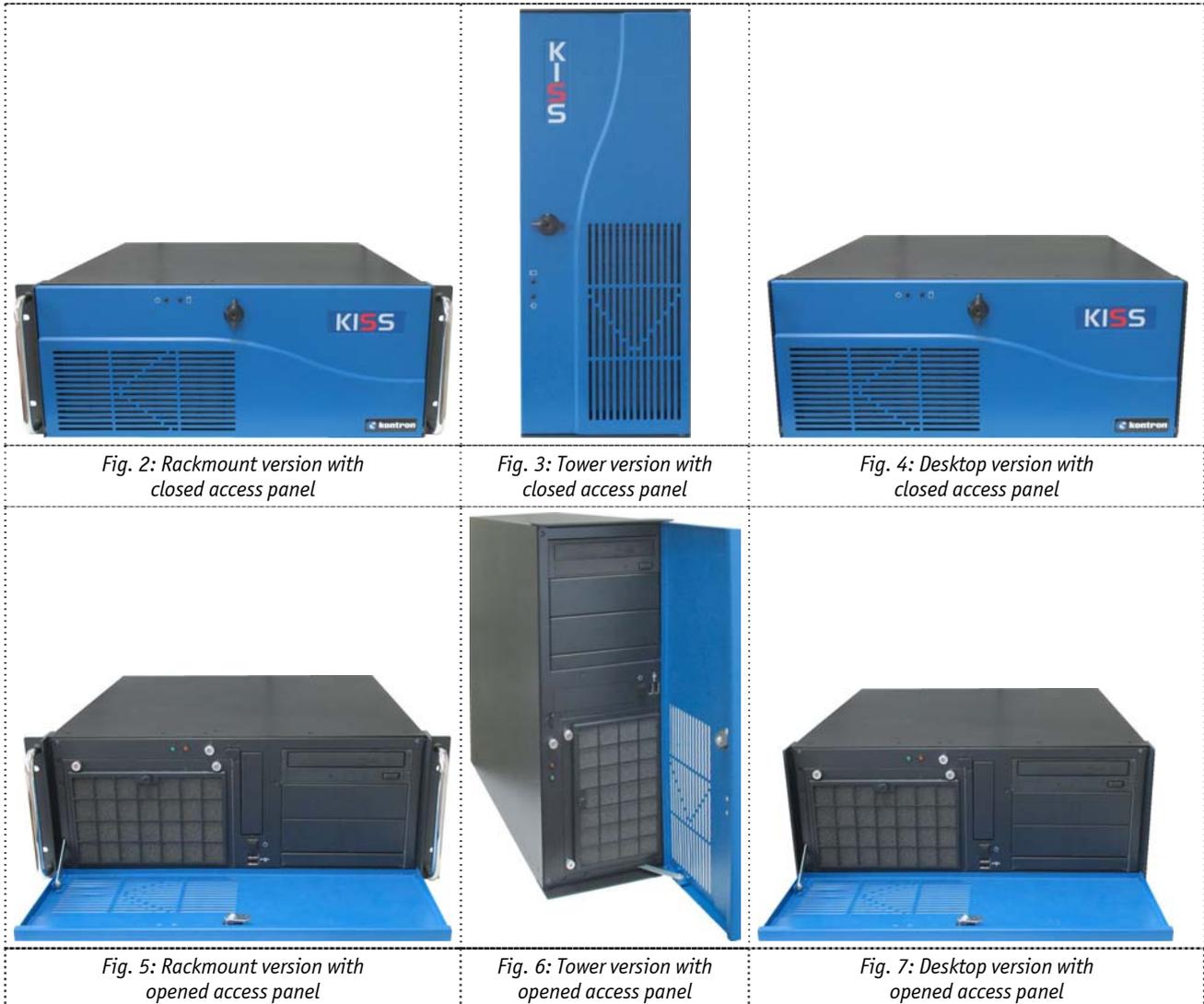
- A:** corresponds to the systems with a 400W wide range AC power supply
- B:** corresponds to the systems with a 650W wide range AC power supply
- C:** corresponds to the systems with a 500W redundant wide range AC power supply
- D:** corresponds to the system configuration with a +24 VDC, 400W power supply
- E:** corresponds to the system configuration with a -48 VDC, 400W power supply

## 7. Product Description

The KISS 4U V2 platform expands the Kontron KISS computer line. KISS 4U V2 is a scalable 4U (19") platform, that can be equipped with either a motherboard or a **Single Board Computer (SBC)** board, supporting various system configurations (refer to "KISS 4U V2 Systems - Configuration Guides" on our website). The flexible customer-specific hardware system configuration and the robust construction with excellent mechanical stability of the KISS 4U V2 platform offer the superior qualities of a computer designed for operation in harsh industrial environment.

The KISS 4U V2 platform is designed to be installed in 19" racks. It is also offered as tower- and desktop version.

### Versions of the KISS 4U V2 platform:



The system can be equipped with up to five drive bays (depending on the system configuration):

- L1, L2 and L3:** three 5.25" front accessible drive bays
- L4:** one internal 3.5" drive bay or one front accessible slim drive bay.
- L5:** one 3.5" front accessible drive bay

The power button of the KISS 4U V2 platform is located on the front side behind the front access panel. The LED indicators are located on the front side and consist of a “power LED” and a “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, even during operation.

The washable filter mat which protects your system against dust and dirt is located on the front side of the system. This filter mat can be replaced during operation.

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

The system can be ordered with frontal IP52 protection class.



The KISS 4U V2 platform may only be operated in horizontal position (rack and desktop version) or in vertical position (tower version).

If you operate the KISS 4U V2 platform in vertical position, please observe that the system fans (slide-in module) must be to the lower front and the drives to the upper front of the system.

When powering on the KISS 4U V2 system, make sure that the air intake and exhaust openings are not obstructed by objects.

The frontal IP52 protection class for the KISS 4U V2 platform is ensured only with an additional inserted steel mesh guard, and with closed front access panel.

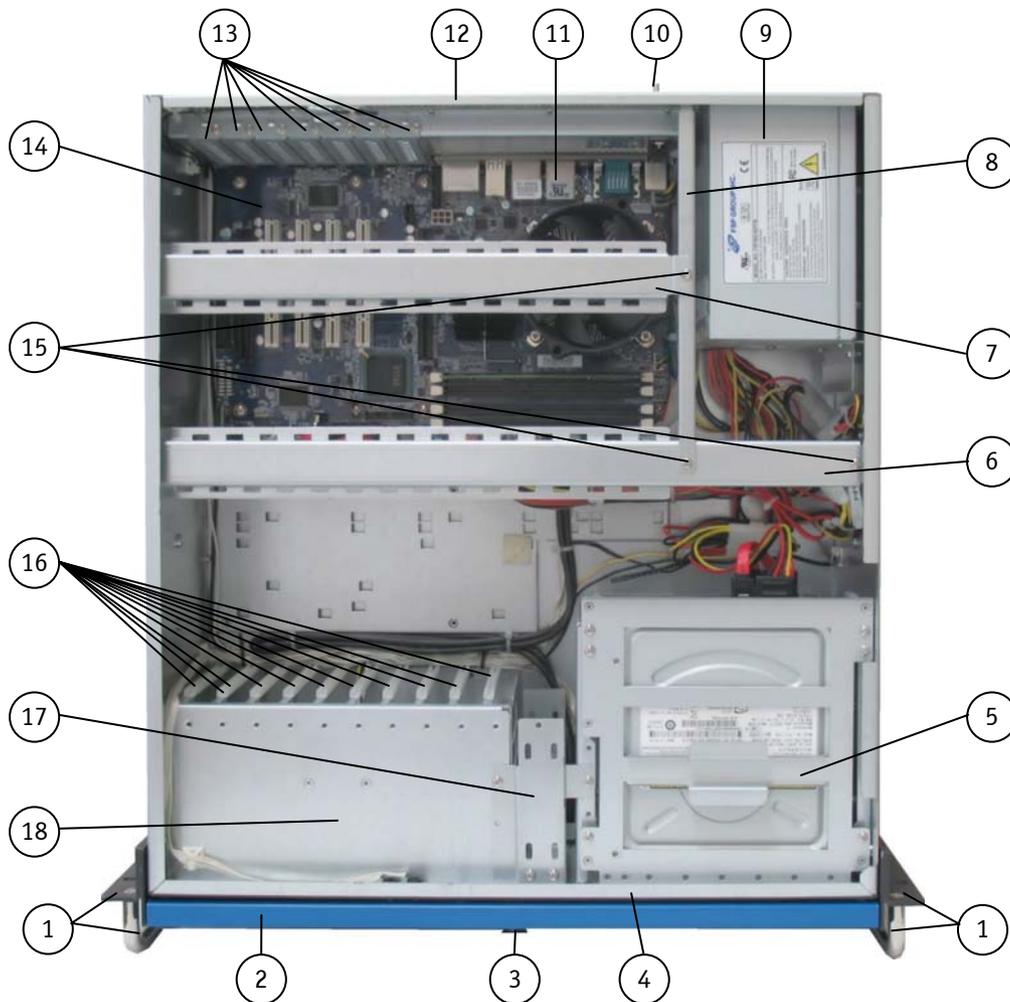


Fig. 8: KISS 4U V2, opened rackmount version (with motherboard)

- |   |   |
|---|---|
| 1 19" rack mountable bracket with handle (not available for tower and desktop version)    | 9 AC power supply unit  |
| 2 Front access panel  | 10 Grounding stud   |
| 3 Access panel lock   | 11 External interfaces of the motherboard                               |
| 4 Cover retaining plate on the front side   | 12 Exhaust openings on the rear side                                    |
| 5 <b>L1, L2, L3</b> and <b>L4</b> : Drives (mounted on top of each other in a drive cage) | 13 Slots for expansion cards  |
| 6 Card hold down bracket (for long expansion cards)                                       | 14 Motherboard  |
| 7 Card hold down bracket (for short expansion cards)                                      | 15 Fastening screw for the card hold down bracket (internal accessible) |
| 8 Retaining bracket for the card hold down bracket  | 16 Card guides (for full-length cards)                                  |
|   | 17 Drive bracket for a 3.5" drive bay ( <b>L5</b> )                     |
|   | 18 Fan compartment  |

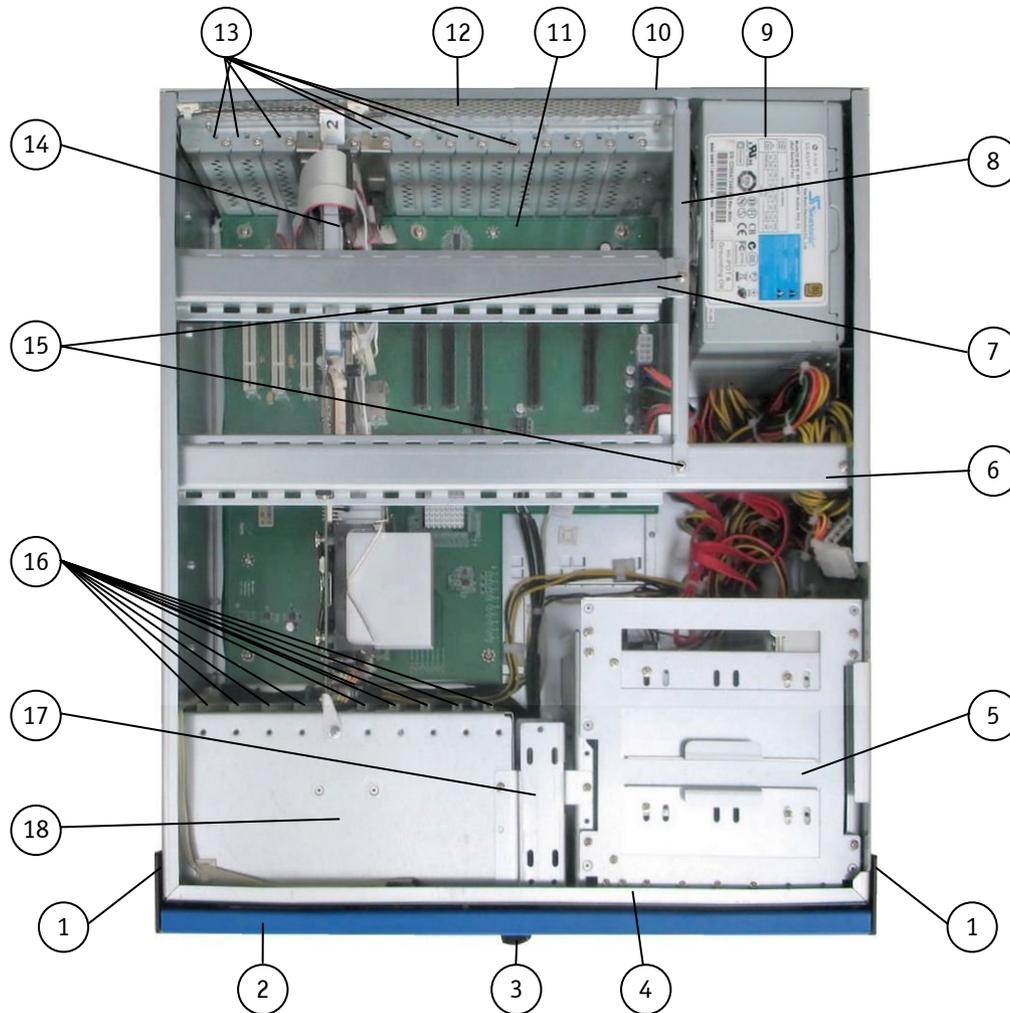


Fig. 9: KISS 4U V2, opened tower version [with Single Board Computer (SBC)]

- |   |   |    |  |
|---|---|----|--|
| 1 | Mounting of the front access panel (tower and desktop versions)                 | 9  | AC power supply unit   |
| 2 | Front access panel  | 10 | Grounding stud   |
| 3 | Access panel lock   | 11 | Backplane  |
| 4 | Cover retaining plate on the front side   | 12 | Exhaust openings on the rear side                                    |
| 5 | <b>L1, L2, L3 and L4:</b> Drives (mounted on top of each other in a drive cage) | 13 | Slots for expansion cards  |
| 6 | Card hold down bracket (for long expansion cards)                               | 14 | Single Board Computer (SBC)  |
| 7 | Card hold down bracket (for short expansion cards)                              | 15 | Fastening screw for the card hold down bracket (internal accessible) |
| 8 | Retaining bracket for the card hold down bracket                                | 16 | Card guides (for full-length cards)                                  |
|   |   | 17 | Drive bracket for a 3.5" drive bay ( <b>L5</b> )                     |
|   |   | 18 | Fan compartment  |

## 7.1. Front Side

Depending on the ordered system configuration, the KISS 4U V2 platform will be delivered as rackmount or tower version.

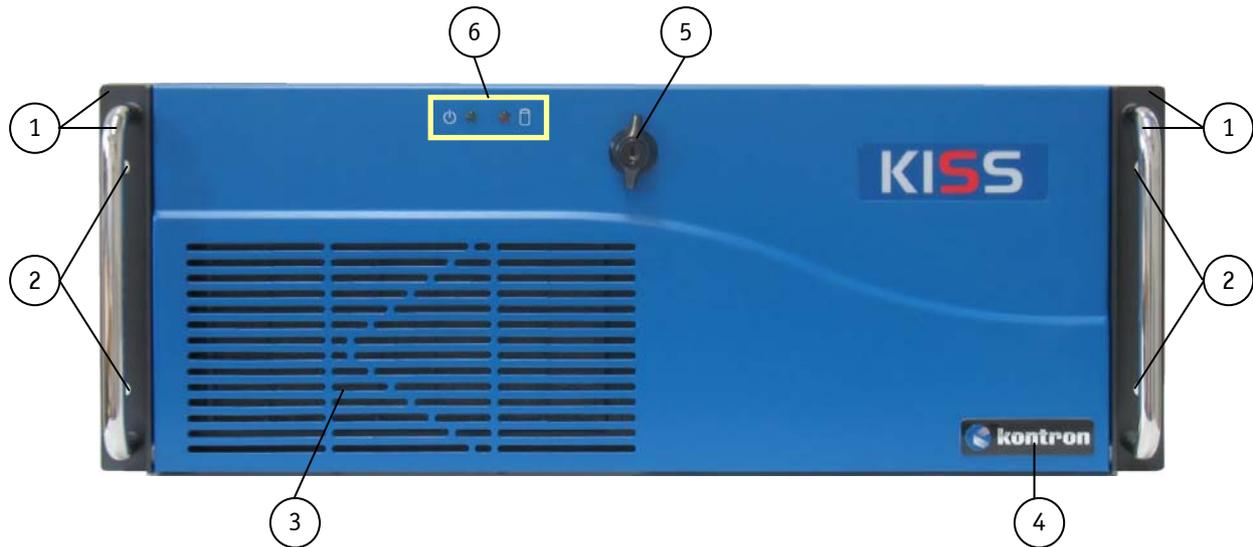
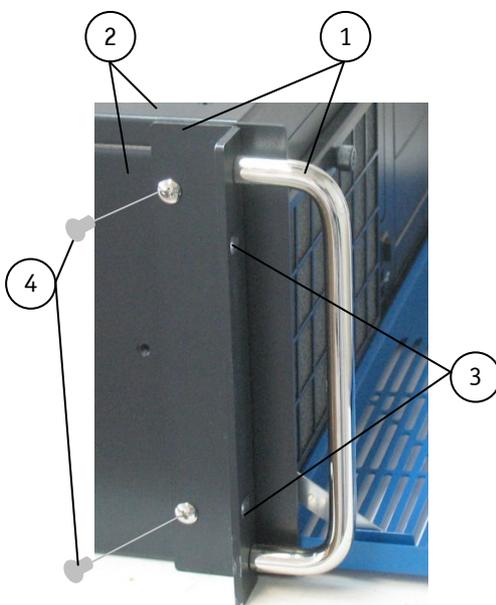


Fig. 10: Front side (rackmount version) with closed front access panel

- |  |   |
|--|---|
| 1 19" handle bracket                   | 4 Kontron Logo                                      |
| 2 Holes for mounting in 19" racks      | 5 Securing lock mechanism                           |
| 3 Air grille on the front access panel | 6 Light diffusers for the HDD LED and the power LED |

You can convert your rackmount system to a desktop unit by removing the two handle brackets (one handle bracket on each side).



- |  |
|--|
| 1 19" handle bracket                           |
| 2 Chassis and cover of the KISS 4U V2 platform |
| 3 Holes for mounting in 19" racks              |
| 4 Fastening screws of the 19" bracket          |

The desktop version is delivered with rubber feet.

To attach the rubber feet, please follow the instructions in chapter 8.1 "Attaching the Rubber Feet".

Fig. 11: 19" handle bracket with fastening screws

The power button, the power and HDD LEDs, 2x USB interfaces, 1x filter mat holder and the integrated drives are located at the front side of the KISS 4U V2 platform behind the access panel.

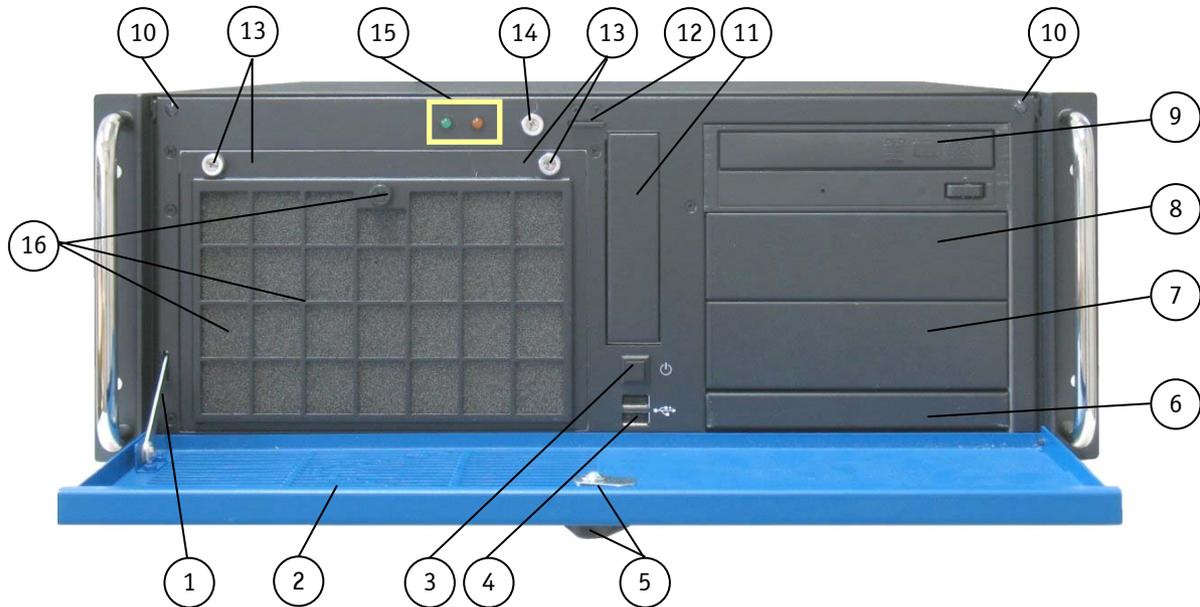


Fig. 12: Front side (rackmount version) with opened access panel

#### Legend for Fig. 12 and Fig. 13:



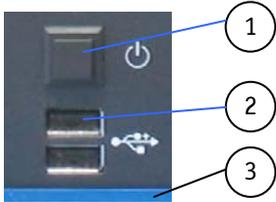
Fig. 13: Front side (tower version) with opened front access panel

- 1 Access panel holder
- 2 Access panel
- 3 Power button
- 4 2x USB 2.0
- 5 Securing lock mechanism (two keys are provided)
- 6 L4: one internal 3.5" drive bay for an internal SATA HDD or for a front-accessible slim drive bay
- 7 L3: front accessible 5.25" drive bay (shown with covering plate)
- 8 L2: front accessible 5.25" drive bay (shown with covering plate)
- 9 L1: front accessible 5.25" drive bay (shown with a DVD drive installed)
- 10 Access panel buffer
- 11 L5: front accessible 3.5" drive bay
- 12 Slot for the locking mechanism
- 13 Fan slide-in module with knurled screws
- 14 Cover fastening screw on the front side
- 15 Indicators (Power LED, HDD activity LED)
- 16 Filter mat and filter mat holder with knurled screw

### 7.1.1. Interfaces on the Front Side

#### 7.1.1.1. USB Interfaces

The KISS 4U V2 platform is equipped with two USB interfaces on the front side (see Fig. 12, pos. 4 and Fig. 14, pos. 2). You can connect various USB devices to these two USB 2.0 interface connectors.



- 1 Power button
- 2 USB (2.0) ports
- 3 Access panel (detail)

Fig. 14: Power button and USB ports at the front side



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

### 7.1.2. Controls and Indicators

#### 7.1.2.1. Power Button

The power button (see Fig. 12, pos. 3 and Fig. 14, pos. 1) is located on the front side of the system, behind the front access panel. Press this button to turn the system on or off.

Please observe the setting options for the power button in the BIOS-Setup.



**For system configurations with 24VDC/-48VDC PSU:**

When the KISS 4U V2 system is powered on with the power button (Fig. 12, pos. 3) the green Power-ON- LED (Fig. 21 and Fig. 22) of the DC PSU (on the rear of the system) lights up.



Even when the system is turned off via the power button (Fig. 12, pos. 3) there is still a standby-voltage of 5 Vsb on the motherboard or SBC.

**Warning!**

For system configuration with:

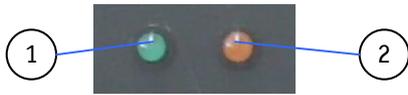
**AC wide range PSU:** The unit is completely disconnected from the mains, only when the ON/OFF switch of the PSU is set to OFF or when the power cord is disconnected either from the mains or the unit. Therefore, the power cord and its connectors must always remain easily accessible..

**AC wide range redundant PSU:** Please observe that the ON/OFF switch of this PSU does not disconnect the KISS 4U V2 from the AC power source. The unit is completely disconnected from the mains, only when the power cord is disconnected either from the mains or the unit. Therefore, the power cord and its connectors must always remain easily accessible.

**+24VDC-bzw. -48VDC-Netzteil:** The unit is only completely disconnected from the mains, when the power wires are disconnected either from the mains or the unit. Therefore, the power wires (not provided) and theirs connectors must always remain easily accessible.

### 7.1.2.2. Power LED and HDD Activity LED

The indicators (see Fig. 12, pos. 15) of the KISS 4U V2 platform are located on the front side, behind the front access panel.



- 1 Power LED
- 2 HDD activity LED

Fig. 15: LED indicators on the front side

<b>Power LED (green)</b>	<p>This LED (Fig. 15, pos. 1) lights up green when the system is turned on by pressing the power button.</p> <p><b>Prerequisite:</b> The system has to be connected to an appropriate AC/DC power source. For system configuration with AC PSU, the power ON/OFF switch of the AC PSU must be set to ON.</p>
<b>HDD LED (orange)</b>	<p>This LED (Fig. 15, pos. 2) lights up during hard disk activity.</p>

### 7.1.3. Front Access Panel

The securing lock mechanism (Fig. 10, pos. 5) located at the access panel allows you, if required, to protect your system from unauthorized use. When the access panel is locked, the cover of the KISS 4U V2 system can not be removed, and the drives, filter mat holder and power button are not accessible.



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



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

### 7.1.4. Cover fastening screw on the front side

The cover fastening screw (Fig. 12 and Fig. 13, pos. 14) secures the cover to the chassis on the front side.



To remove the cover of the KISS 4U V2 platform, the following knurled screws have to be loosened:

- The cover fastening screw (Fig. 12 and Fig. 13, pos. 14 and Fig. 28) on the front side
- The knurled screws (Fig. 16 and Fig. 17, pos. 8 and Fig. 29) on the rear side

The chassis of the KISS 4U V2 platform is properly closed only if the cover is attached and the above mentioned screws are fastened.

### 7.1.5. Fan Slide-in Module

The two system fans are integrated in a user-friendly, replaceable fan slide-in module (hot-swap) (see chapter 8.3 "Fan Slide-in Module and Temperature Sensor"). The fan slide-in module (Fig. 12 and Fig. 13, pos. 13) can be replaced during operation (see chapter 10.2 "Replacing the System Fans").

### 7.1.6. Filter Mat and Filter Mat Holder

The filter mat and the filter mat holder (Fig. 12 and Fig. 13, pos. 16) are located behind the air grilles of the front access panel (Fig. 10, pos. 3). The filter mat holder is fastened to the fan slide-in module (Fig. 12 and Fig. 13, pos. 13) via two knurled screws and two positioning plates. A filter mat is inserted in the filter mat holder. This filter mat protects your system against dust and dirt (see chapter 10.1 "Cleaning the Filter Mat").

### 7.1.7. Steel Mesh Guard (for IP52 Variant only)

The KISS 4U V2 platform variant with IP52 protection class provides (for indoor use) protection against dust and moisture. Please observe the details in the subsection 10.1.1 "Cleaning Steel Mesh Guard (for IP52 Protection Class only)."



The frontal IP52 protection class is ensured for the KISS 4U V2 platform only with an additional inserted steel mesh guard, and with closed front access panel.

### 7.1.8. Drive Bays

Depending on the ordered system configuration, the system can be equipped with up to five drives on the front side (see Fig. 12 and Fig. 13, pos. 6, 7, 8, 9, 11):

Drive Bay	Description
L1	Externally accessible 5.25" drive bay (shown with a DVD drive installed)
L2	Externally accessible 5.25" drive bay (shown with covering plate)
L3	Externally accessible 5.25" drive bay (shown with covering plate)
L4	One internal 3.5" drive bay for a SATA HDD or for a front accessible slim-line drive bay (shown with an internal, not externally accessible HDD installed)
L5	Externally accessible 3.5" drive bay (shown with covering plate)



For KISS 4U V2 system configurations with a disk subsystem with five HDDs, the drive bays L1, L2 and L3 are occupied by this subsystem with removable HDDs.

For customer-specific versions and system configurations, please refer to the corresponding "KISS 4U V2 Systems - Configuration Guides" for KISS 4U V2 on our website [www.kontron.com](http://www.kontron.com).

## 7.2. Rear Side

Depending on the KISS 4U V2 platform configuration ordered, the rear panel will have the external interfaces of the integrated motherboard or SBC board, any additional interfaces, the power supply unit and the air exhaust openings.



The positioning and number of the KISS 4U V2 platform interfaces may vary depending on the system configuration.

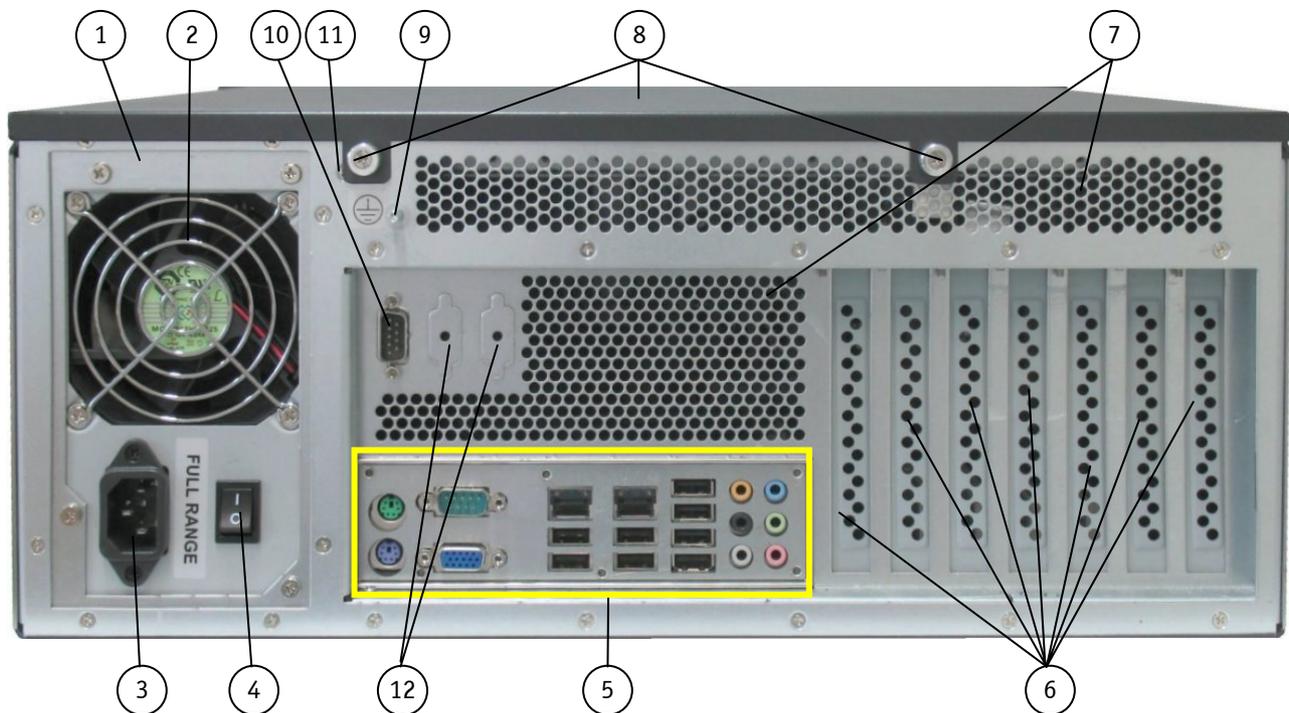


Fig. 16: Rear side of a KISS 4U V2 platform with motherboard and AC wide range PSU

- |   |   |
|---|---|
| 1 AC power supply unit (PSU)  | 7 Air exhaust openings  |
| 2 Power supply fan  | 8 Rear side of the cover with captive knurled screws  |
| 3 AC input connector  | 9 Grounding stud (marked with PE symbol)  |
| 4 "On/Off" switch of the power supply unit  | 10 Optional serial interface (RS232) routed to the rear panel   |
| 5 Interfaces of the SBC card or motherboard (depending on the system configuration) | 11 Externally accessible screw (countersunk screw M3x6) for the fastening of the retaining bracket            |
| 6 Free expansion card slots (depending on the integrated CPU card)                  | 12 Cut-outs for optional (customer-specific) interfaces routed to the rear panel (9-pin D-SUB type connector) |

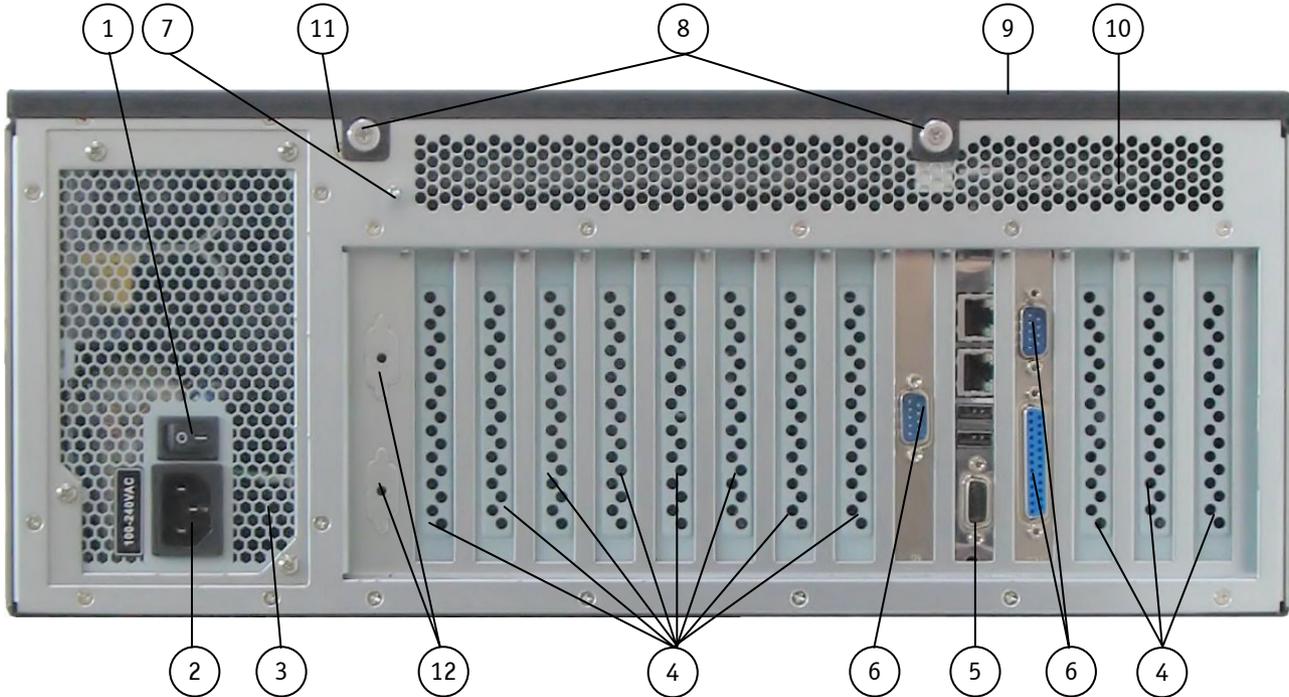


Fig. 17: Rear side of a KISS 4U V2 platform with Single Board Computer (SBC) and AC wide range PSU

- |  |   |
|--|---|
| 1 "On/Off" switch of the AC PSU (depending on the integrated power supply unit)  | 7 Grounding stud (not marked with PE symbol)  |
| 2 AC input connector   | 8 Rear side of the cover with captive knurled screws  |
| 3 Ventilation openings of the power supply                                       | 9 Housing cover   |
| 4 32 bit or 64 bit free expansion card slots (depending on the integrated board) | 10 Air exhaust openings   |
| 5 Single Board Computer (SBC)  | 11 Externally accessible screw (countersunk screw M3x6) for the fastening of the retaining bracket            |
| 6 Interfaces routed to the rear panel  | 12 Cut-outs for optional (customer-specific) interfaces (9-pin D-SUB type connector) routed to the rear panel |

### 7.2.1. Interfaces on the Rear Side



The positioning and number of the KISS 4U V2 platform interfaces may vary depending on the system configuration.

Information and technical data can be found in the corresponding board manual of the installed motherboard or SBC card.

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.

### 7.2.1.1. Interfaces routed to the Rear Panel

Depending on the installed CPU card (motherboard or SBC) the on-board interfaces such as serial interfaces can be routed to the rear panel (refer to Fig. 16, pos. 10 and pos. 12 and Fig. 17, pos. 6 und pos. 12). You can connect peripheral devices to these connectors.



A detailed description of the ports can be found in the manual of the corresponding CPU card (motherboard or SBC).

You can download the relevant CPU card manual for your system configuration from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product. See also "KISS 4U V2 Systems - Configuration Guides" on our website.

### 7.2.2. Power Supply

The power supply is located on the rear side of the KISS 4U V2 platform.

On request, the KISS 4U V2 platform can optionally be equipped with an AC wide range PSU, a redundant AC wide range PSU or a DC PSU. The integrated power supply version also depends on the ordered system version and system configuration. The respective power supply version and the corresponding nominal voltage range can be found on the type label on the right side of the system.



Fig. 18: Detail:  
400W AC wide range PSU



Fig. 19: Detail:  
650W AC wide range PSU

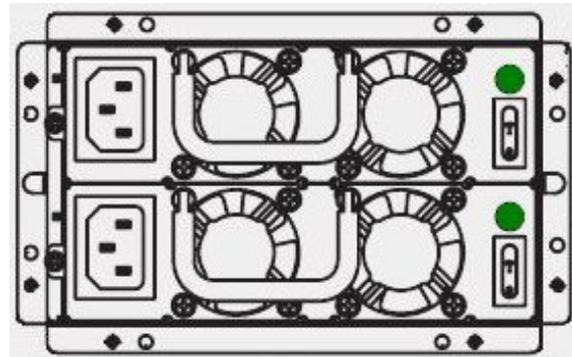
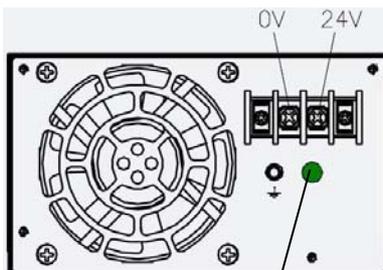
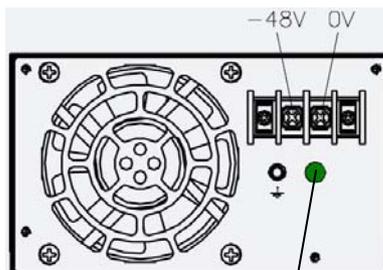


Fig. 20: Detail:  
500W AC redundant wide range PSU



Power-ON-LED

Fig. 21: Detail:  
+24VDC-Netzteil (400W)



Power-ON-LED

Fig. 22: Detail:  
-48VDC-Netzteil (400W)

#### For system configuration with 24VDC/-48VDC PSU:

The green Power-ON LED (Fig. 21 and Fig. 22) of the 24VDC / -48VDCPSU (on rear side of the system) lights up, only when the KISS 4U V2 systems is powered on with the power button (Fig. 12, pos. 3).



After attaching the cables to the terminals of the DC power supplies, always operate the KISS 4U V2 systems with the protective cover available.

Please observe that the ON/OFF switch of the AC wide range redundant PSU (Fig. 20) does not disconnect the KISS 4U V2 platform from the main power source. Even you turn off the system using the power button (Fig. 12, pos. 3) or the ON/OFF switch of this PSU, there is still a standby-voltage of 5 V<sub>Sb</sub> on the motherboard or SBC.

### 7.2.3. Grounding Stud

The grounding stud is located on the rear side of the KISS 4U V2 platform (see Fig. 16, pos. 9 and Fig. 17, pos. 7).



The KISS 4U V2 systems with grounding studs marked with a PE symbol have to be grounded by establishing a large-area contact between the grounding stud and an appropriate grounding connection point.



Fig. 23: Grounding stud marked with PE symbol



Fig. 24: Unmarked grounding stud

### 7.3. Side View

Five M4 metric tapped holes are available at the left and right side of the unit (Fig. 25, pos. 2). These can be used in order to attach slide rails [not included; see chapter 11 "Slide Rails (Option)"] to the KISS 4U V2 platform for system installation into a 19" industrial cabinet.

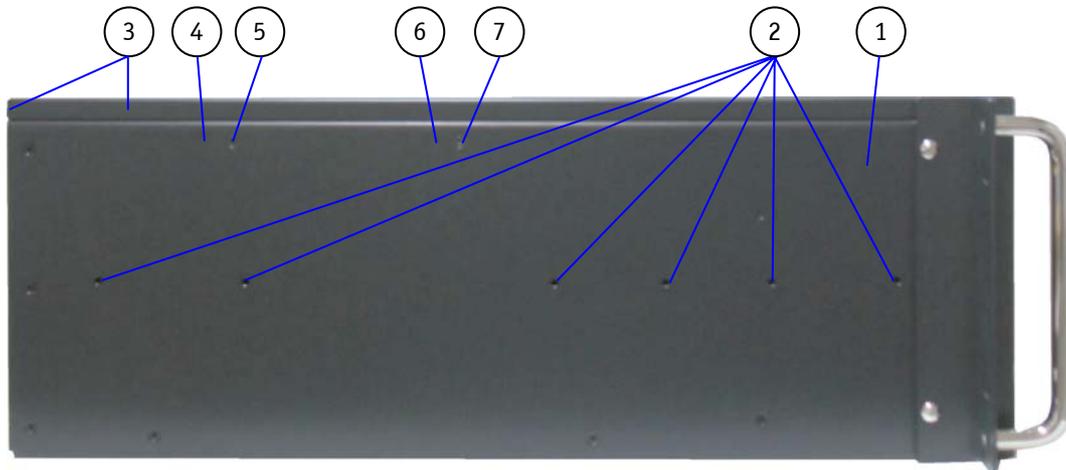


Fig. 25: KISS 4U V2 platform – side view

- |   |   |
|---|---|
| 1 Right side view of a KISS 4U V2 platform  | 5 Externally accessible screw (countersunk screw M3x6) for fastening the card hold down bracket for long expansion cards (full-length)  |
| 2 5x M4 tapped holes (on both sides)  | 6 Internal bolt for the card hold down bracket for short expansion cards (half-length)  |
| 3 Cover with captive knurled screws (for mounting the cover)                          | 7 Externally accessible screw (countersunk screw M3x6) for fastening the card hold down bracket for short expansion cards (half-length) |
| 4 Internal bolt for the card hold down bracket for long expansion cards (full-length) |   |

## 8. Assembly, Disassembly

### 8.1. Attaching the Rubber Feet

The rubber feet can be used for the desktop version of the system.

To attach the rubber feet to the bottom side of the chassis, please perform the following steps:

1. Turn your system off and disconnect it from the main power 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 protective film from the self adhesive rubber feet.
5. Attach the self adhesive rubber feet to the bottom side of the chassis.

### 8.2. Cover

The cover will be fixed to the chassis using two fixing brackets at the front side of the cover (Fig. 26, pos.3 and pos. 4), two fixing brackets with captive knurled screws at the rear side of the cover (Fig. 26, pos.6) and the cover fastening screw (Fig. 12 and Fig. 13, pos. 14) at the front side of the KISS 4U V2 platform.

When closing the cover, make sure that the fixing brackets (Fig. 26, pos. 3 and pos. 4) are inserted properly into the corresponding retaining bracket of the cabinet (Fig. 8, pos. 4). The centering bracket (Fig. 26, pos. 3) and the front cover fastening screw (Fig. 12 and Fig. 13, pos. 14) secure the cover on the front side.

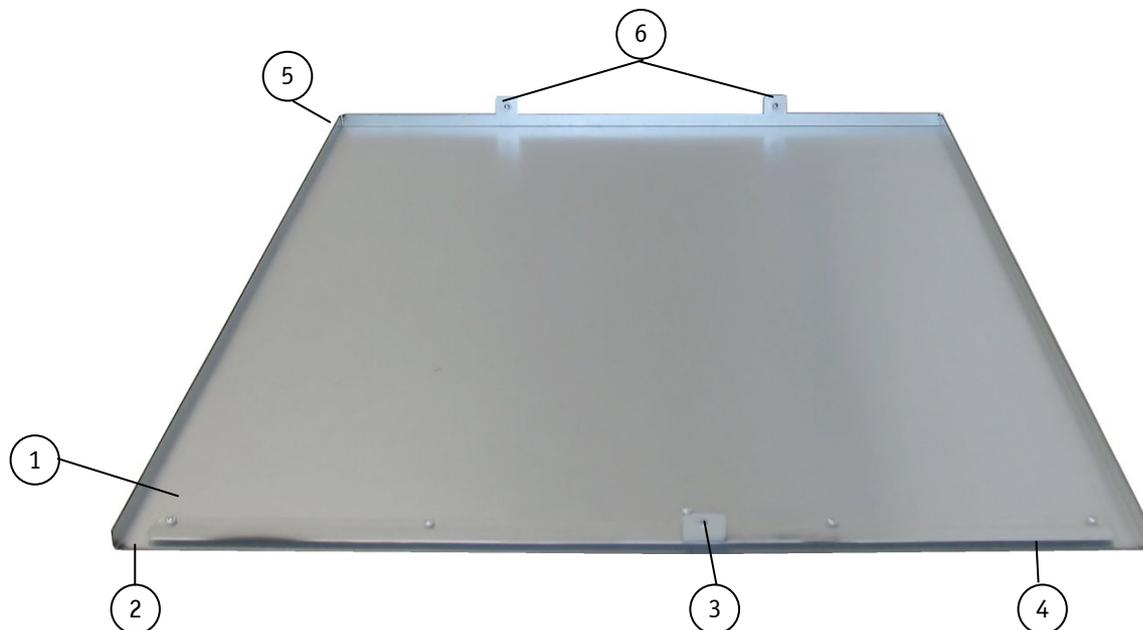


Fig. 26: Inside of the cover with fixing brackets

- |  |                                       |
|--|---------------------------------------|
| 1 Inside of the cover  | 4 Fixing bracket (on the front side)  |
| 2 Front part of the cover  | 5 Rear part of the cover              |
| 3 Angulated centering bracket with tapped hole (on the front side) | 6 Fixing brackets with knurled screws |

### 8.3. Fan Slide-in Module and Temperature Sensor

The two system fans (Fig. 27 and Fig. 47, pos. 3) are integrated in a user-friendly, replaceable fan slide-in module (hot-swap). The fan slide-in module is mounted in a fan compartment on the front side of the system (Fig. 46, pos, 5).

The system fans are temperature controlled via the temperature sensors installed in the KISS 4U V2 platform. Thus, a reliable air circulation for optimal active cooling of the platform is guaranteed.

The temperature conditions of the system (depending on the environmental temperature and the system load) are detected by two temperature sensors. One temperature sensor is located in the rear part (near the ventilation openings) and the second sensor is placed sideways in the mid part of the KISS 4U V2 platform.

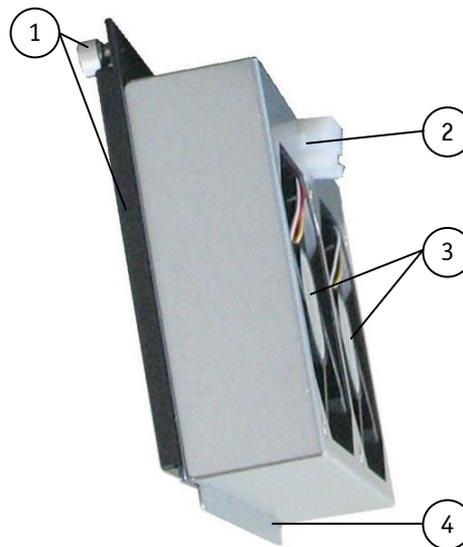


Fig. 27: Fan slide-in module

- |   |  |
|---|--|
| 1 Fan slide-in module with two knurled screws | 3 2x fans (temperature controlled independently from each other) |
| 2 Connector for fan control                   | 4 Bracket of the fan slide-in module                             |



The operation of the KISS 4U V2 platform is permitted only with a functional fan slide-in module!

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

- ❑ "fan slide-in module", part number: 1035-6968

#### Important Instructions!

The fan slide-in module can be replaced during operation. This should only be carried out by qualified personnel aware of the associated dangers (see chapter 10.2 "Replacing the System Fans").

## 8.4. Accessing Internal Components

This chapter contains important information on working safely with internal components. Please follow these instructions when handling cards or replacing system fans.

### 8.4.1. Installing/Removing the Expansion Cards



When you install (or remove) expansion cards please consider the corresponding safety instruction included in chapter 4 and the provided document "General Safety Instruction for IT Equipment".

Activities such as working inside the system or handling the expansion cards have to be carried-out by qualified personnel for this area.

Before removing the device cover, ensure that your system is switched off and disconnected from the mains power supply.

**Caution:**

**Energy hazards > 240 VA are present inside the chassis!**

**Activities such as system expansion with expansion cards, or maintenance have to be carried-out by qualified personnel familiar with the associated dangers!**



Please follow the safety instructions for components that are sensitive to electrostatic discharge (ESD). Failure to observe this warning notice 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 your system.

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

1. Turn your system off and disconnect it from the AC power supply.



In order to remove the cover, following knurled screws have to be loosen:

- ❑ the cover fastening screw (Fig. 12 and Fig. 13, pos. 14 and Fig. 28) on the front side
- ❑ the knurled screws (Fig. 16 and Fig. 17, pos. 8 and Fig. 29) on the rear side.

2. Loosen the knurled screws (the cover fastening screw on the front side and the two knurled screws on the rear side) which secure the cover (see Fig. 28 and Fig. 29).



Fig. 28: Loosening the knurled cover fastening screw on the front side



Fig. 29: Loosening the knurled screw on the rear side

3. Pull the cover out a little bit (Fig. 30) to release the cover centering and fixing brackets (Fig. 26, pos.3 and pos. 4) from the retaining brackets of the chassis (see Fig. 8, Fig. 9, pos. 4).



Fig. 30: Pull out the cover centering and fixing brackets from the retaining brackets of the chassis

4. Lift the cover up (on the rear edge) and remove it (Fig. 31).



Fig. 31: Removing the cover

Two card hold down brackets and a retaining bracket (Fig. 8 and Fig. 9, pos 6, pos. 7 and pos. 8) secure the SBC card and the expansion cards to the corresponding expansion slots.



Fig. 32: Card hold down bracket for long expansion cards

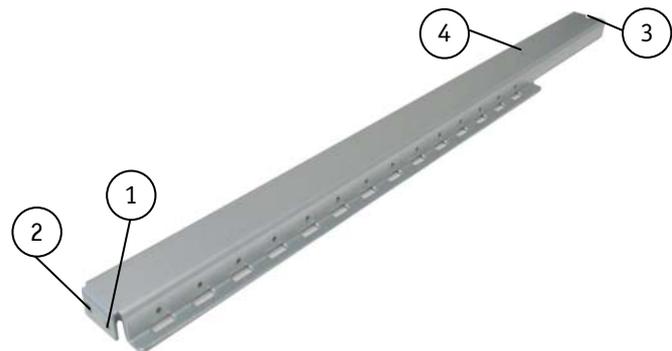


Fig. 33: Card hold down bracket for long expansion cards

- |  |   |
|--|---|
| <p>1 Threaded holes for the externally accessible fastening screws (Fig. 25, pos. 5 and pos. 7)</p> <p>2 Holes for the internal bolts (Fig. 25, pos. 4 and pos. 6)</p> | <p>3 Notches for the fastening screws that secure the card hold down brackets to the internal brackets</p> <p>4 Threaded hole for attaching the retaining bracket</p> |
|--|---|



In order to install short expansion cards (half-length), only the card hold down bracket for short expansion cards (see Fig. 8 and Fig. 9, pos. 7) has to be removed (step 1 to 4).

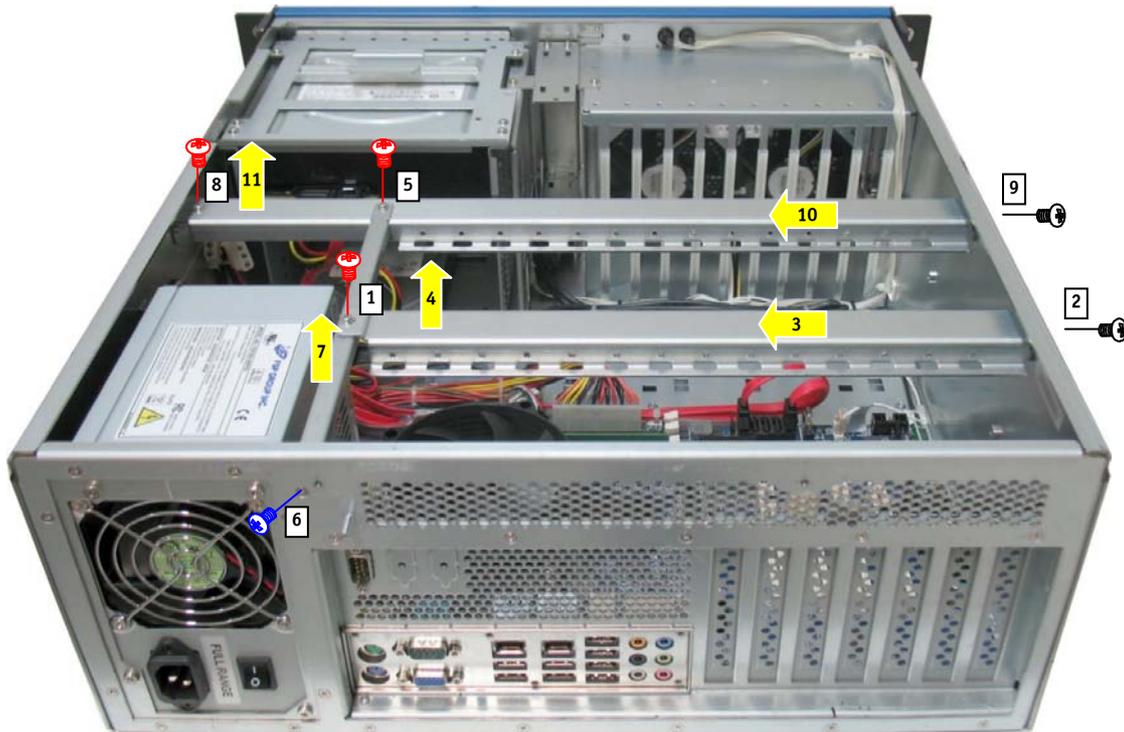


Fig. 34: Opened KISS 4U V2 platform - removing the card hold down brackets

5. Loosen the internal and then the externally accessible fastening screw that secure the card hold down bracket for short expansion cards (see Fig. 8 and Fig. 9, pos. 7), (Fig. 34, step 1 and 2). Pull the card hold down bracket to the left (Fig. 34, step 3) to detach it from the sideways mounted bolts. Lift the card hold down bracket out (step 4). Put the card hold down bracket and the screws aside for later use.
6. Loosen the internal and then the externally accessible fastening screw that secure the retaining bracket (see Fig. 8 and Fig. 9, pos. 8), (Fig. 34, step 5 and 6). Lift the retaining bracket out (Fig. 34, step 7). Put the retaining bracket and the screws aside for later use.
7. Loosen the internal and then the externally accessible fastening screws that secure the card hold down bracket for long expansion cards (see Fig. 8 and Fig. 9, pos. 6), (Fig. 34, step 8 and 9). Pull the card hold down bracket to the left (Fig. 34, step 10), to detach it from the sideways mounted bolts. Lift the card hold down bracket out (Fig. 34, step 11). Put the card hold down bracket for long expansion cards and the screws aside for later use.
8. Install/remove the expansion card into/out of the expansion slot of the backplane/motherboard and fasten the slot bracket or the expansion card bracket to the rear slot of the device.
9. Reinstall the card hold down bracket/s and, if applicable the retaining bracket and secure it/them with the screws retained in step 5, 6 or 7).

10. If required, mount the PCB holder to the corresponding positioning holes of the card hold down bracket using the provided screws. Fix the upper edge of the expansion card (especially with long expansion cards) into the notch of the PCB holder (height adjustable). Thus the expansion card is firmly kept in place during high mechanical load (shock and vibrations).
11. In order to re-assemble the card hold down brackets, follow the steps in reversed order. Tighten the corresponding screws half way at first. Then, tighten firmly the externally accessible screws and the retaining bracket. Only then tighten firmly the screws at the notches that secure the card hold down brackets.
12. Close the KISS 4U V2 platform and secure the cover with the captive knurled screws.



The chassis of the KISS 4U V2 platform with attached cover is properly closed only, if the following knurled screws are tightened:

- the cover fastening screw (Fig. 12 and Fig. 13, pos. 14 and Fig. 28) on the front side
- the knurled screws (Fig. 16 and Fig. 17, pos. 8 and Fig. 29) on the rear side

## 8.5. Installation in a 19" Industrial Cabinet



Expansion card installation should be performed before installing the KISS 4U V2 system into a 19" industrial cabinet.

Please consider the instructions described in the section 8.4 "Accessing Internal Components".

Before closing the industrial cabinet, you must connect your peripherals to the corresponding system ports.

For KISS 4U V2 versions and system configurations, please refer to the corresponding "KISS 4U V2 Systems - Configuration Guides" on our website [www.kontron.com](http://www.kontron.com).

More information and technical data can be found in the corresponding board manual (motherboard or SBC, depending on the system configuration ordered).

You can download the manual from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product.



In order to setting-up installing / removing the KISS 4U V2 platform into/from a 19" industrial cabinet, please observe the instructions described in this manual.

Please consider the corresponding safety instruction included in chapter 4 and the provided document "General Safety Instruction for IT Equipment".

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

Ensure there is sufficient air circulation around the device when installing the KISS 4U V2 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 KISS 4U V2 platform to prevent the device from possibly overheating.

The KISS 4U V2 platform should be installed into a 19" industrial cabinet by use of slide rails or by use of corresponding L-rack mounting brackets (not available).

For the installation of the KISS 4U V2 platform in a 19" industrial cabinet, you can order from Kontron slide rails (PN: 1016-5807) and the "Rack Slide Rails Kit for KISS 1U and KISS 2U/4U" (PN: 1051-7200).

The KISS 4U V2 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.

## 9. Starting Up



Please consider the Hints included in the chapter 4 “General Safety Instructions for IT Equipment”. When used as intended the KISS 4U V2 platform is to operate only closed and locked.

Only when the cover is properly installed, secured with the knurled screws on the rear and the cover fastening screw on the front, and the access panel is locked with the key, it is ensured that the user doesn't have access to the internal parts of the KISS 4U V2 platform, loaded with hazardous energy. The rated voltage range of the mains (AC/DC) must agree with the voltage value on the type label.

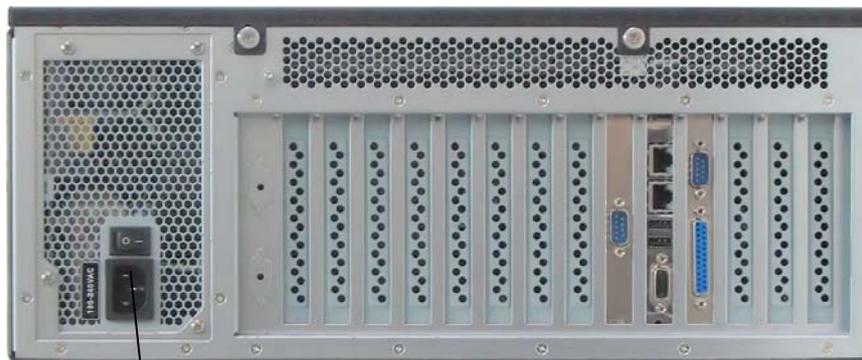
### 9.1. AC Power Connection

The AC input connector is located at the rear side of the KISS 4U V2 system.



AC input connector

Fig. 35: KISS 4U V2, rear side with PE marked grounding stud



AC input connector

Fig. 36: KISS 4U V2, rear side without PE marked grounding stud

To connect the KISS 4U V2 platform to an AC power supply, perform the following steps:

1. The KISS 4U V2 systems with grounding studs marked with a PE symbol have to be grounded by establishing a large-area contact between the grounding stud (at the rear side) and an appropriate grounding connection point (see chapter 7.2.3 “Grounding Stud”, Fig. 23 and Fig. 24).
2. Connect the AC power cord to the AC input connector.
3. Connect the other end of the AC power cord to a corresponding mains outlet.



Make sure that the power supply (power outlet) is properly grounded and that the power cord is in perfect condition without any visible damage. An ungrounded power supply is not permissible.

## 9.2. DC Power Connection

The DC version of the KISS 4U V2 platform is equipped with a +24V or -48V power supply (with a 2-pin terminal block and an ON/OFF power switch).



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

It must be ensured that the platform can be powered ON and OFF via an easy accessible two pole isolating switch and an overload protection. These should be incorporated in the building installation wiring.

The unit is only completely disconnected from the DC power source, when the DC power wires are disconnected either from the power source or the unit. Therefore, the DC power wires and its connectors must always remain easily accessible.

Please ensure that during the DC connection procedure, there is no power flowing from the external DC power source to the KISS 4U V2 system.

1. Prepare two isolated wires according to the connectors of the screw terminal.



The minimum cross section of up to 4.00 mm<sup>2</sup> for the +24VDC PSU and minimum cross section of up to 2.5 mm<sup>2</sup> for the -48VDC PSU must be selected corresponding the KISS 4U V2 system configuration and the customer-specific expansion cards installed.

In order to determine the minimum cross section of the power wires, please observe the table 3D and 3E of the EN 60950-1.

2. Loosen the two cross-head screws of the screw terminal so that you can insert the stripped ends of the wires. Pay attention to the polarity of the wires.
3. Fasten the cross-head screws firmly.
4. Cover the connectors of the screw terminal with the protective cover available.



After attaching the cables to the terminals of the DC PSU (+24VDC or -48VDC) always operate the DC versions of KISS 4U V2 systems with the protective cover provided.

5. Prepare the other ends of the wires according to the terminal of the DC power source.
6. Connect the wires prepared to the DC power source. Pay attention to the polarity of the connectors. The DC power source has to be switched off.
7. Switch on the DC power source.

### 9.3. Operating System and Hardware Component Drivers

The KISS 4U V2 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 operational, when you switch it on for the first time. Please observe the information below.



**Important information for using the pre-installed “WINDOWS 7 ULTIMATE FOR EMBEDDED SYSTEMS” or “WINDOWS 7 PROFESSIONAL FOR EMBEDDED SYSTEMS” operating systems:**

The terms and condition for using the pre-installed operating systems are defined in the document „MICROSOFT SOFTWARE LICENSE TERMS“.

This document can be downloaded from our web site [www.kontron.com](http://www.kontron.com) by selecting the product name/tab Downloads/Windows.

If you have ordered KISS 4U V2 without a pre-installed operating system, you will need to install the operating system and the appropriate drivers for the system configuration you have ordered (optional hardware components) yourself.



You can download the relevant drivers for the installed hardware from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product.

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

## 10. Maintenance and Prevention

Equipment from Kontron Europe requires only minimum servicing and maintenance for problem-free operation.

- For light soiling, clean the KISS 4U V2 with a dry cloth.
- Stubborn dirt should be removed using a mild detergent and a soft cloth.
- Clean the filter mat regularly (see chapter 10.1 "Cleaning the Filter Mat").

### 10.1. Cleaning the Filter Mat

The filter mat is inserted in the filter mat holder at the front side of the fan slide-in module (Fig. 37, pos. 4). The soiling of the filter mat is caused by the pollution of the operating environment. A heavily soiled filter mat can cause excessive heating of the device. For this reason we recommend to clean the filter mat as often as necessary. The filter mat can be changed during operation of the system.

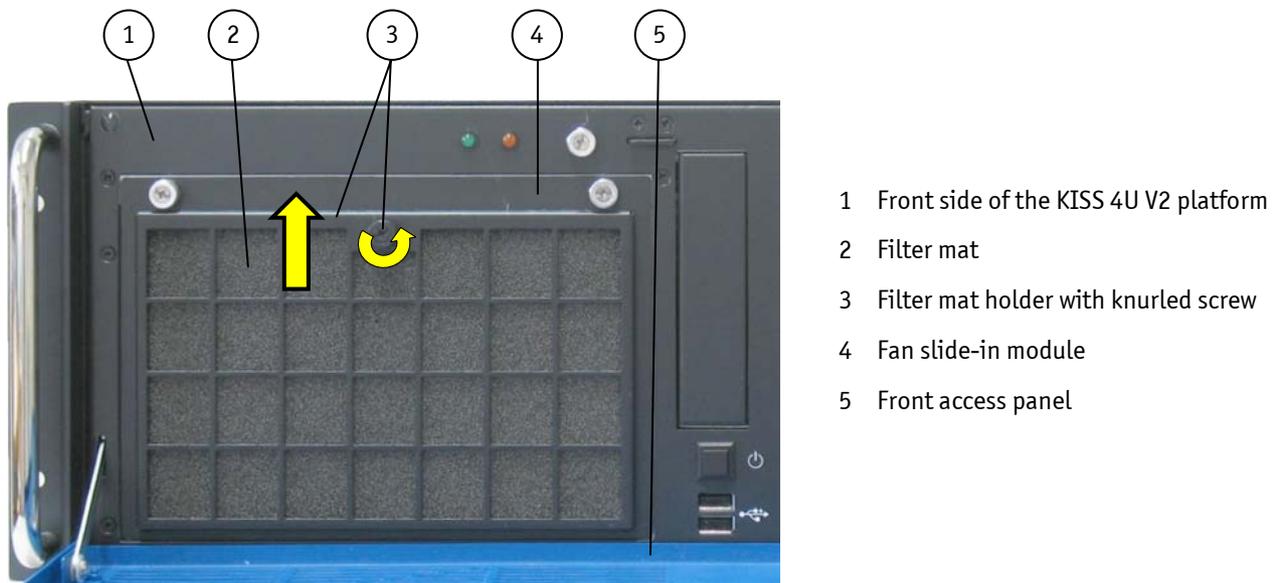


Fig. 37: Detail: Filter mat holder on the front side of the KISS 4U V2 platform

To replace the filter mat, proceed as follows:

1. Open the front access panel (Fig. 37, pos. 5).
2. Loosen the knurled screw that secures the filter mat holder to the fan slide-in module (Fig. 37, pos. 4 and Fig. 39, pos. 5).
3. Pull the filter mat holder out of the positioning holes (Fig. 38, pos. 3) into the marked direction (see Fig. 37) and lift it off.
4. Remove the soiled filter mat (Fig. 37, pos. 2 and Fig. 41).
5. Clean the filter mat as follows:
  - Rinse in water (up to approx. 40°C; possibly with the addition of a standard mild detergent).
  - It is also possible to beat the filter pad, to vacuum it or blow it with compressed air.
  - For dirt that contains grease/oil, the filter pad should be rinsed with warm water with the addition of a degreaser. Filter pads should not be cleaned with powerful water jets or wrung out.

6. After cleaning and drying the filter pad, place it in the filter mat holder (see Fig. 40).
7. Reattach the filter mat holder to the front side of the fan slide-in module by inserting the positioning plates (Fig. 39, pos. 6) into the positioning holes (Fig. 38, pos. 3).
8. Fix the filter mat holder by tightening the knurled screw (Fig. 39, pos. 5) to the bolt with tapped hole (Fig. 38, pos. 1) at the fan slide-in module.



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

Air filter mat: part number: 1035-6957.

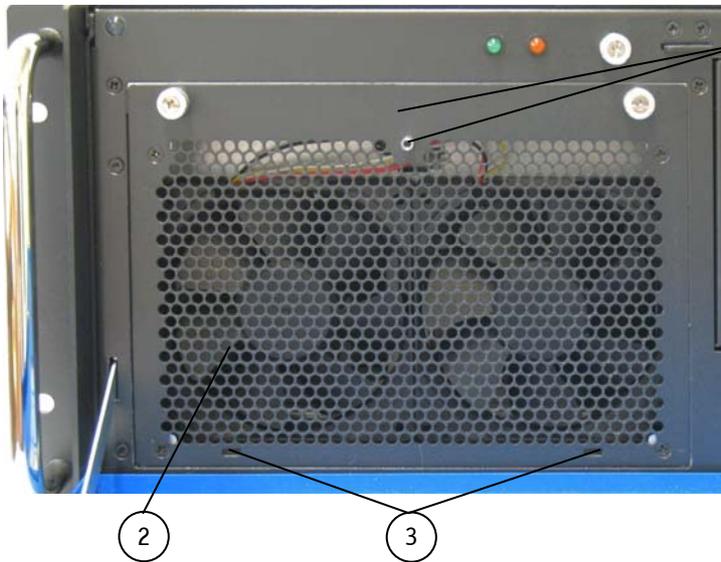


Fig. 38: Detail: without filter mat at the front side

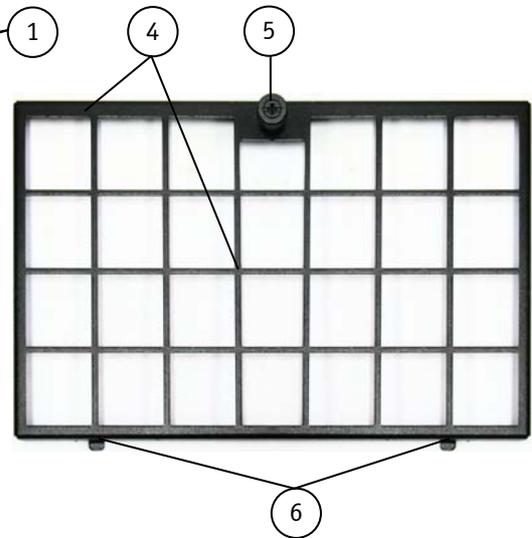


Fig. 39: Filter mat holder without filter mat



Fig. 40: Filter mat holder with filter mat

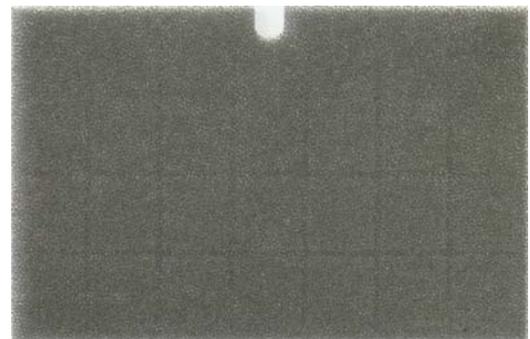


Fig. 41: Filter mat

**Legend for Fig. 38 and Fig. 39:**

- |  |   |
|--|---|
| 1 Fan slide-in module with bolt with tapped hole                   | 4 Filter mat holder                           |
| 2 Air intake openings at the front side of the fan slide-in module | 5 Knurled screw of the filter mat holder      |
| 3 Positioning holes for the filter mat holder                      | 6 Positioning plates of the filter mat holder |

### 10.1.1. Cleaning Steel Mesh Guard (for IP52 Protection Class only)

If you have ordered a KISS 4U V2 platform with IP52 Protection Class, the filter mat holder (Fig. 42) is fitted with an additional steel mesh guard (Fig. 43).

In order to remove the steel mesh guard, follow the steps 1 to 3 of the section 10.1 "Cleaning the Filter Mat".

Use a vacuum cleaner or compressed air to remove dust and debris from the steel mesh guard.

Reinsert the steel mesh guard (Fig. 43) and filter mat (Fig. 41) after cleaning into the filter mat holder (Fig. 39). The positioning of the protective guard and the filter mat in the filter mat holder is shown in Fig. 44.

Reattach the filter mat holder to the front side of the fan slide-in module as described in the section 10.1 "Cleaning the Filter Mat", step 7 and 8.



Fig. 42: IP52 - Filter mat holder with inserted steel mesh guard and filter mat

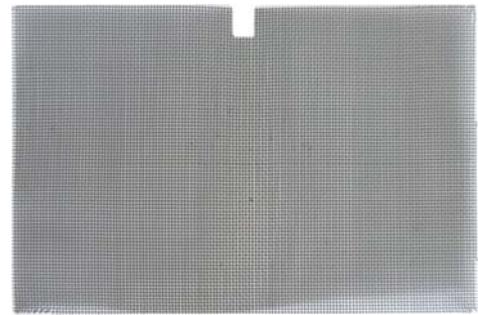


Fig. 43: Steel mesh guard

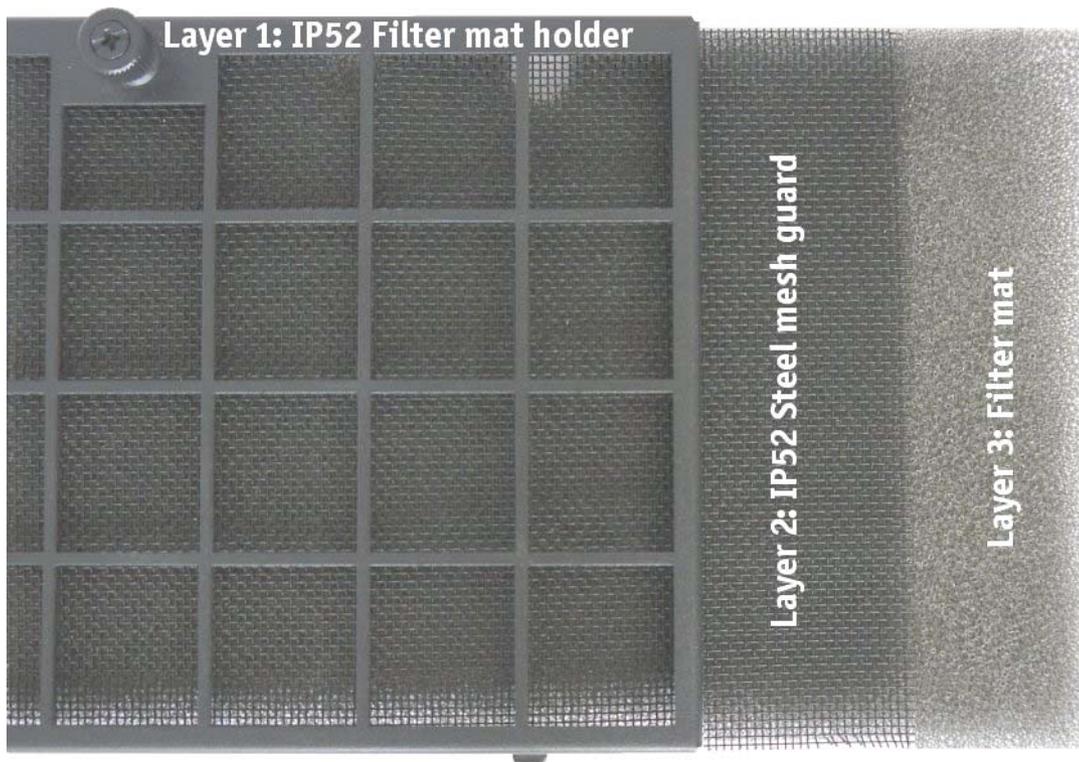


Fig. 44: IP52 variant - Positioning of the steel mesh guard and of the filter mat in the filter mat holder



The frontal IP52 protection class is ensured for the KISS 4U V2 platform only with an additional inserted steel mesh guard, and with closed front access panel.

## 10.2. Replacing the System Fans



The operation of the KISS 4U V2 system is permitted only with a functional fan slide-in module!

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

□ part number of the fan slide-in module: 1035-6968



The fan slide-in module can be replaced during operation. This should only be carried out by a qualified specialist or a suitably instructed user, who is aware of 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. Remove the filter mat holder as described in chapter 10.1 “Cleaning the Filter Mat” (step 1 to 3) and put it aside for later reassembly.
2. Loosen the two knurled screws of the fan slide-in module (Fig. 45, pos 1)
3. Pull the fan slide-in module out of the cabinet using the knurled screws to disconnect it from the internal fan control socket (Fig. 46, pos. 4).
4. Lift the fan slide-in module as shown (Fig. 45, pos. 2) out of the fan compartment (see Fig. 46).

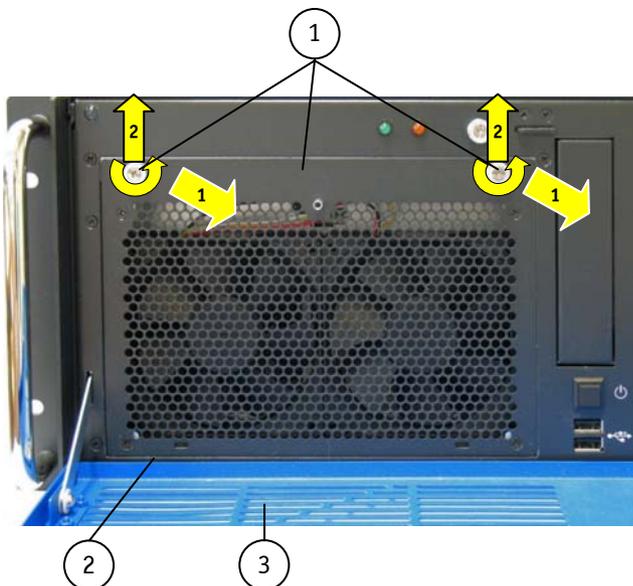


Fig. 45: Detail: Fan slide-in module without filter mat holder

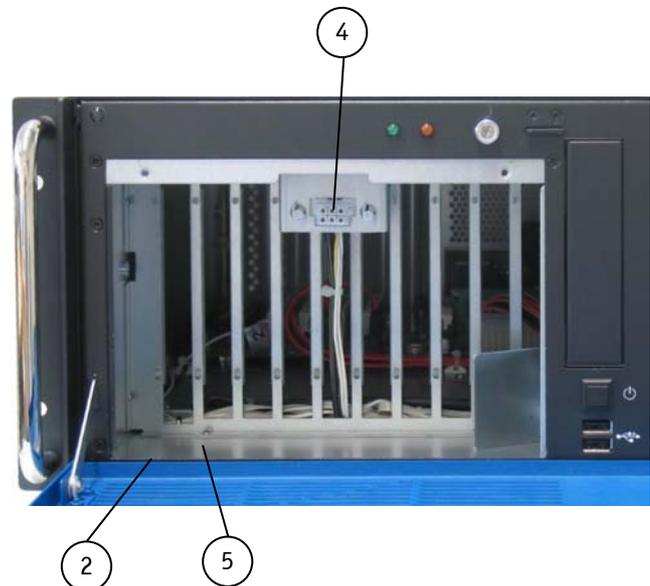


Fig. 46: Detail: Fan compartment (without fan slide-in module)

**Legend for Fig. 45 and Fig. 46:**

- |  |   |
|--|---|
| 1 Fan slide-in module with two knurled screws        | 3 Front access panel                      |
| 2 Fixing plate for the fan slide-in module (chassis) | 4 Socket for fan power supply and control |
|  | 5 Fan compartment                         |

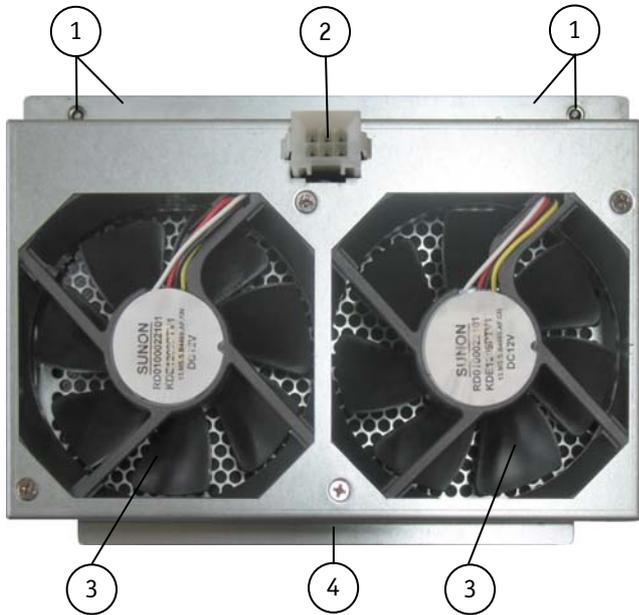


Fig. 47: Inner sider of the fan slide-in module

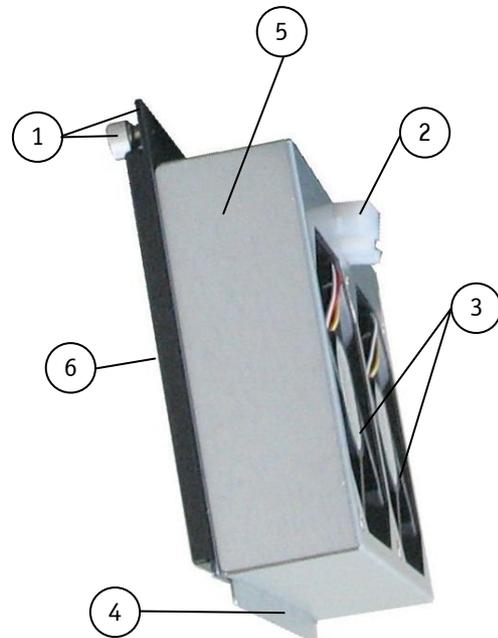


Fig. 48: Fan slide-in module with inserted filter mat

**Legend for Fig. 45 and Fig. 46:**

- |  |   |
|--|---|
| 1 Fan slide-in module with two knurled screws                    | 4 Positioning plate of the fan slide-in module                            |
| 2 Connector for fan control                                      | 5 Housing of the fan slide-in module                                      |
| 3 2x fans (temperature controlled independently from each other) | 6 Inserted filter mat holder at the front side of the fan slide-in module |

5. Replace the fan slide-in module with a new functional module.

6. Install the filter mat holder (put aside in step 1) with the filter mat to the front side of the fan slide-in module, as described in chapter 10.1 "Cleaning the Filter Mat" (step 7 and step 8; see also Fig. 48).

7. Insert the positioning plate (Fig. 47 and Fig. 48, pos. 4) into the fan compartment (Fig. 46, pos. 5) behind the fixing plate (Fig. 45 and Fig. 46, pos. 2).

8. After the positioning plate (Fig. 47 and Fig. 48, pos. 4) is properly inserted into the fan compartment, push the upper part of the fan slide-in module into the fan compartment until the fan control connector (Fig. 47, pos. 2) is firmly inserted into the socket (Fig. 46, pos. 4).

9. Secure the fan slide-in module by fastening the knurled screws.



If step 6 was skipped, the installation of the filter mat holder (with filter mat) has to be performed as the final step:

- Install the filter mat holder (put aside in step 1) with the filter mat to the front side of the fan slide-in module, as described in chapter 10.1 "Cleaning the Filter Mat" (step 7 and step 8).

### 10.3. 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 chapter 8.4.1 "Installing/Removing the Expansion Cards" (step 1-4).
2. If you have added expansion cards to your system, first remove the expansion cards plus all the corresponding connecting cables, to gain access to the lithium battery, following the instructions in chapter 8.4.1 "Installing/Removing the Expansion Cards" (step 5-7).
3. Remove the lithium battery from the holder by pulling the ejector spring outwards.
4. Place a new lithium battery into the battery holder.
5. Pay attention to the polarity of the battery.
6. The lithium battery must be replaced with an identical battery or a battery type recommended by Kontron Europe.
7. Reinstall the expansion cards which you removed and reconnect their data cables following the instructions in chapter 8.4.1 "Installing/Removing the Expansion Cards" (step 8-11).
8. Close the device, as described in chapter 8.4.1 "Installing/Removing the Expansion Cards" (step 12).



#### 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 recognized.



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 disposal of batteries).

## 11. Slide Rails (Option)

Kontron offers slide rails for installing the KISS 4U V2 platform into a 19" industrial cabinet. These can be ordered separately.



The KISS 4U V2 systems should be installed into a 19" industrial cabinet with slide rails (PN: 1016-5807). Use therefore the rack slide rails mounting kit for KISS 1U and KISS 2U/4U V2 systems (PN: 1051-7200).

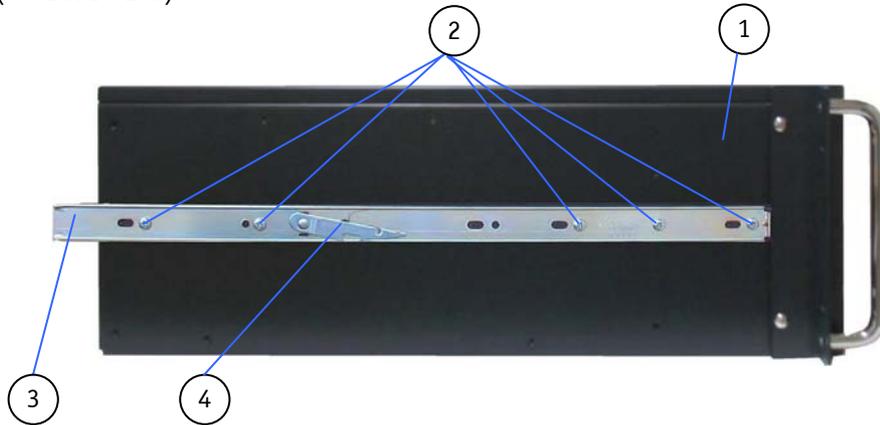


Fig. 49: Attaching the inner part to a KISS 4U V2 platform

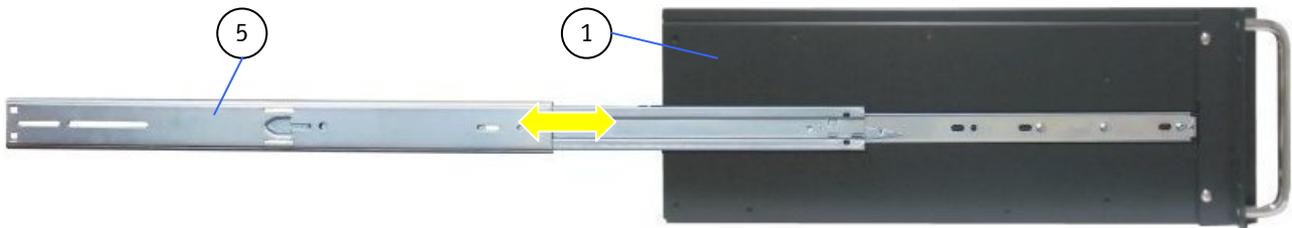


Fig. 50: KISS 4U V2 platform with slide rail in pulled-out position



Fig. 51: KISS 4U V2 platform with slide rail in pushed-in position

**Legend for:** Fig. 49, Fig. 50 and Fig. 51:

- |  |                                     |
|--|-------------------------------------|
| 1 Side view of the KISS 4U V2                            | 4 Locking/unlocking lever           |
| 2 5x M4x6 rounded head screws(per each side of the unit) | 5 Slide rail in pulled-out position |
| 3 Inner part of the slide rail                           | 6 Slide rail in pushed-in position  |



Please note that only the specified (M4x6) screws should be used to attach telescope rails to the KISS 4U V2 platform.

## 12. Technical Data

<b>KISS 4U V2-xxxxxxx-y</b>	
<b>Installed Board</b>	* See "KISS 4U-V2 Systems - Configuration Guides"
<b>Interfaces</b>	I/O interfaces of the CPU card * See manual of the installed motherboard/SBC
<b>Drive Bays</b>	Up to five drive bays * Optional equipment, depending on the system configuration ordered (see also "KISS 4U-V2 Systems - Configuration Guides")
<b>Free Expansion Slots</b>	Up to 14 slots * Optional equipment, depending on the system configuration ordered (see also "KISS 4U-V2 Systems - Configuration Guides")
<b>Lithium Battery</b>	* See manual of the installed motherboard/SBC
<b>Rated Voltage Range</b>	See type label



KISS 4U V2 = System type

The "xxxxxxx" group is replaced by up to a max. 8-digit combination of numbers, letter or space, and represents the installed CPU board

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

\*The corresponding "KISS 4U V2 Systems - Configuration Guides" 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.

### 12.1. Electrical Specifications

The corresponding electrical specifications of your KISS 4U V2 platform can be found on the type label.

## 12.2. Mechanical Specifications

Dimensions	KISS 4U V2
Height	4U (177 mm) (6.968 ")
Width	Front: 19" (482 mm); Chassis: 430 mm (16.9")
Depth	Chassis: 472.5 mm (18.6")
Weight (without Packaging)	Approx. 18 kg (39.6 lbs.)
Chassis	Chassis, black (RAL 7021) Front access panel, blue (RAL 5017)

## 12.3. Environmental Specifications

Thermal Management	2x System fan, temperature controlled (fan slide-in module) 1x CPU fan 1x PSU fan
Operating Temperature	0 ... +50 °C (+55 °C at 10% POH per month) (32 .. 122 °F (131 °F at 10% POH per month)
Storage / Transit Temperature	-20 ... +70 °C -4 ... 158 °F
Relative Humidity (Operating/Storage/Transit)	10-95 % @ 40° C, non condensing
Max. Operation Altitude	2,0000 m (6,560 ft)
Max. Storage / Transport Altitude	10,000 m (32,810 ft)
Operating Shock	15 G, 11 ms, half sine
Storage / Transit Shock	30 G., 11 ms, half sine
Operating Vibration	10 – 500 Hz, 1.0 G
Storage / Transit Vibration	10 – 500 Hz, 2.0 G
Acoustic Noise	< 35 dB(A) at 1 m in front of the system ~ 40 dB(A) for systems with Intel® Quad Core™ processor or redundant PSU
Protection Class	Front: IP20; optional IP52

## 12.4. CE Directives and Standards

CE Directive	
<b>Elektrical Safety</b>	General Product Safety Directive (GPSD) 2001/95/EC Low Voltage Directive (LVD) 2006/95/EC
<b>Electromagnetic Compatibility (EMC)</b>	EMC-Richtlinie 2004/108/EC
<b>CE Marking</b>	CE-Richtlinie 93/68/EEC

<b>Elektrical Safety</b>	<b>Harmonized Standards</b>
<b>EUROPE</b>	Information technology equipment - Safety - Part 1: General requirements EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + AC:2011
<b>U.S.A. / CANADA</b>	to meet UL60950-1:2006/ CSA C22.2- No. 60950-1-7:2007

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

## 13. Standard Interfaces – Pin Assignments

Low-active signals are indicated by a minus sign.

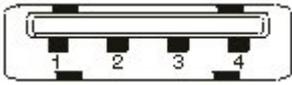
### 13.1.1. Serial Interface (RS232)

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)	

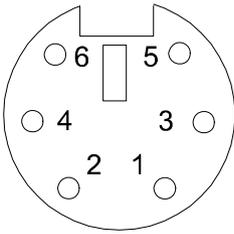
### 13.1.2. VGA Port

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)	

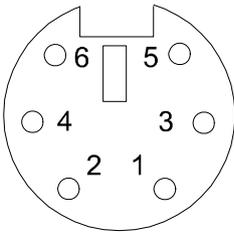
13.1.3. USB Port

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

13.1.4. 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.	

13.1.5. 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.	

13.1.6. Parallel Port (LPT)

Pin	Signal Name	25-pin D-SUB Connector (female)
1	-STROBE	<p>The diagram shows a vertical 25-pin D-SUB connector (female). The pins are arranged in a single column. Pin 1 is at the top, and pin 25 is at the bottom. Pins 13, 14, and 25 are also labeled. The connector has a hexagonal mounting hole at the top and bottom. The pins are numbered 1 through 25 from top to bottom.</p>
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	

## 14. Technical Support

For technical support, please contact our Technical Support department:

Tel: +49 (0) 8165/77 112

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

Web: <http://www.kontron.com/support>

Make sure you have the following information on hand when you call:

- the unit part id number (PN),
- the serial number (SN) of the unit; the serial number can be found on the type label, placed on the right side of the system.

Be ready to explain the nature of your problem to the service technician.

If you have questions about Kontron Europe or our products and services, you can reach us by the above-mentioned telephone number and on e-mail address or at: [www.kontron.com](http://www.kontron.com).

### 14.1. Returning Defective Merchandise

Please follow these steps before you return any merchandise to Kontron Europe:

1. Download the corresponding form for returning a device with an RMA No. [RMA (Return of Material Authorization)] from our website [www.kontron.com/Support/.RMA Information](http://www.kontron.com/Support/.RMA%20Information); contact our Customer Service department to obtain an RMA No.  
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.
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.

### Corporate Offices

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