

» Kontron User's Guide «



KISS 2U Short V2

User's Guide (Version V1.00)

1052-7694

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2. Introduction

Kontron Europe GmbH 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.





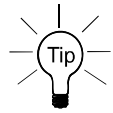
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2.1. Symbols used in this Manual

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 2U Short V2 platform!

This chapter contains instructions which must be observed when working with the KISS 2U Short 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 supplied 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 supplied "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 instruction for the KISS 2U Short V2 platform is the responsibility of the distributor.

When used as intended the KISS 2U Short 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 2U Short V2 platform, loaded with hazardous energy.

4.1. Operation of Laser Source Devices

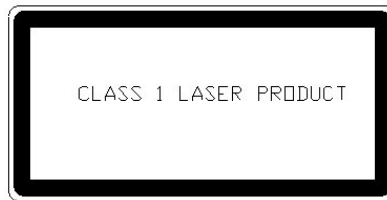


Fig. 1: Warning about laser radiation

The optional DVD drive 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.



4.2. 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.

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 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.

4.3. Instructions for the Lithium Battery

The installed motherboard is equipped with a Lithium battery. When replacing the lithium battery, please follow the corresponding instructions in the section 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 2U Short V2 platform (ordered system configuration)
- Two keys for the front panel lock
- AC power cable
- General Safety Instruction for IT Equipment
- Rubber feet (self-adhesive)

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 2U Short V2 platform are located on the right side of the device.

System Type	Product Designation	Product Identification
KISS 2U Short V2	KISS 2U Short V2-xxxxxxx-y	<p>KISS 2U Short 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 the equipped PSU (Power Supply Unit):

A: corresponds to the systems with a wide range AC power supply (100-240V, 400W)

7. Product Description

The KISS 2U Short V2 platform expands the Kontron KISS computer line. KISS 2U Short V2 is a scalable 4U (19") platform, that is equipped with a motherboard, supporting various system configurations (refer to "KISS 2U Short 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 2U Short V2 platform offer the superior qualities of a computer designed for operation in harsh industrial environment.

The KISS 2U Short V2 platform is can be operated as desktop unit or installed into a 19" rack in horizontal as well as in vertical position.



Fig. 2: Rackmount version with closed access door



Fig. 3: Desktop version with closed access door



Fig. 4: Rackmount version with opened access door



Fig. 5: Desktop version with opened access door

The system can be equipped with up to two front accessible drive bays:

- ❑ **L1:** 1x 5.25" front accessible drive bay
- ❑ **L2:** 1x 3.5" internal drive bay for a HDD (SATA HDD or SSD) or 1x front accessible slim drive.

The power button of the KISS 2U Short 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 "HDD LED".

Two 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 KISS 2U Short V2 platform is equipped with either an AC wide range **Power Supply Unit (PSU)**. On request only, it can be equipped with a +24VDC or a -48VDC PSU.

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

The system can be ordered with frontal IP52 Protection Class.



The KISS 2U Short V2 platform may be operated in horizontal as well as in vertical position.

When powering on the KISS 2U Short V2 platform, make sure that the air intake and exhaust openings are not obstructed by objects.

The frontal IP52 protection class for the KISS 2U Short V2 platform is ensured only with an additional inserted steel mesh guard, and with closed front access panel.



Fig. 6: KISS 2U Short V2 platform



For customer-specific versions and system configurations, please refer to the corresponding “KISS 2U Short V2 Systems - Configuration Guides” for KISS 2U Short V2 on our website www.kontron.com.

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 by selecting the product name.

KISS 2U Short V2 for Low-Profile Cards

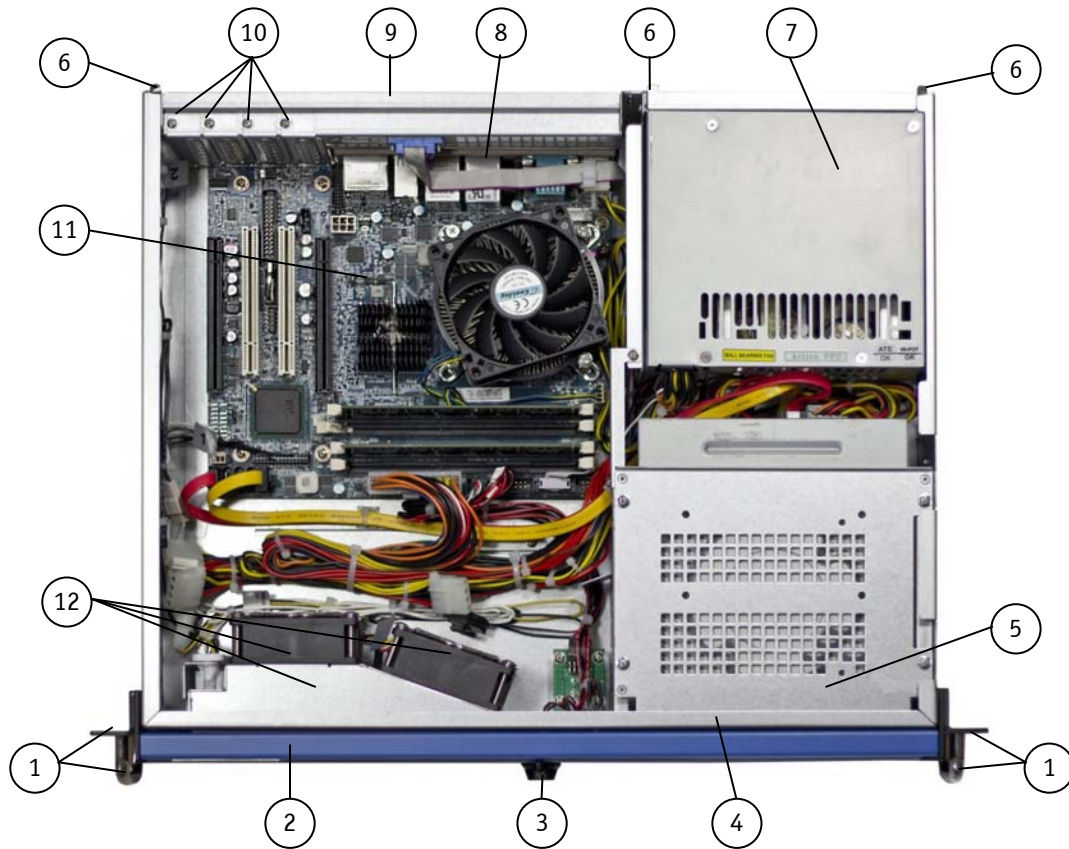


Fig. 7: Rackmount version, opened (for system expansion with low profile cards)

- | | |
|---|---|
| 1 19" bracket with handle | 7 Power Supply Unit (AC) |
| 2 Front access panel | 8 External ports of the motherboard |
| 3 Securing lock mechanism | 9 Cover retaining plate on the rear side |
| 4 Cover retaining plate on the front side | 10 Slots for expansion cards (low profile) |
| 5 Drive cage for drive bays (L1- and L2) | 11 Motherboard |
| 6 Centring latches on the rear side for the cover | 12 Fan slide-in module (equipped with two fans) |

KISS 2U Short V2 with Riser Card

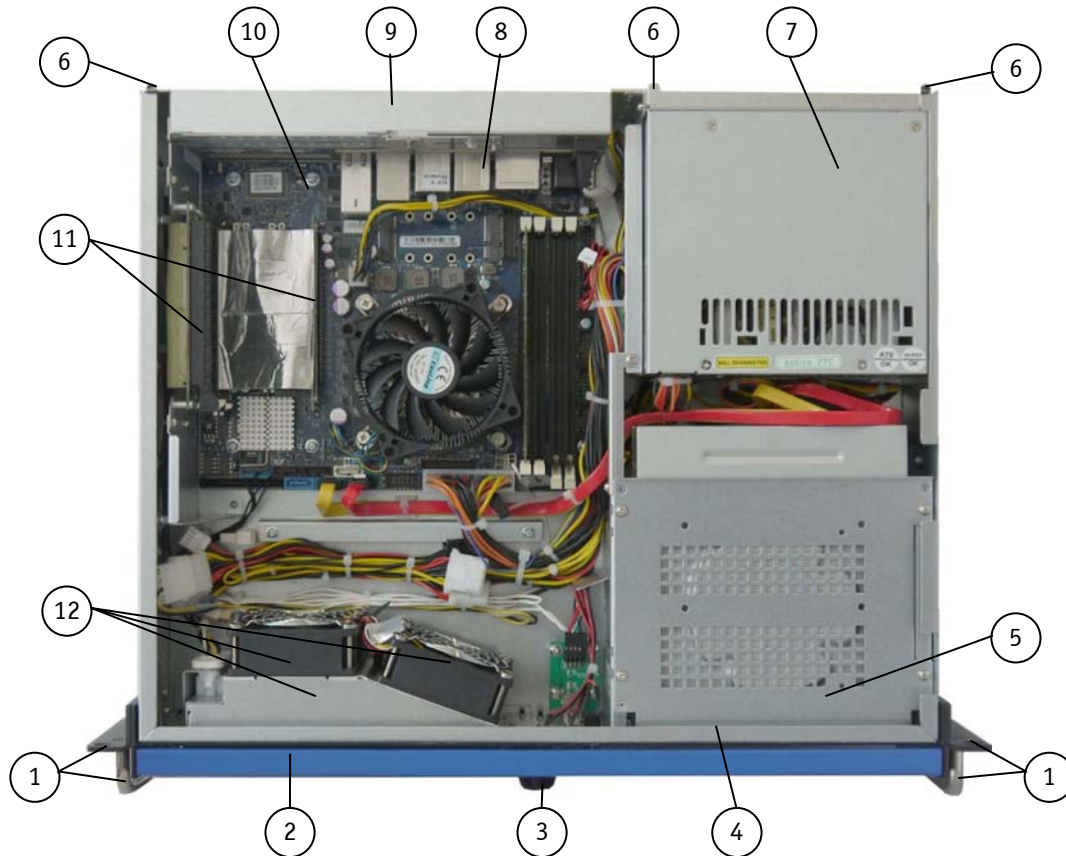


Fig. 8: Rackmount version, opened (for system expansion via riser card)

- | | |
|---|---|
| 1 19" bracket with handle | 7 Power Supply Unit (AC) |
| 2 Front access panel | 8 External ports of the motherboard |
| 3 Securing lock mechanism | 9 Cover retaining plate on the rear side |
| 4 Cover retaining plate on the front side | 10 Motherboard |
| 5 Drive cage for drive bays (L1 and L2) | 11 PCI or PCIe riser card with expansion slots |
| 6 Centring latches on the rear side for the cover | 12 Fan slide-in module (equipped with two fans) |

7.1. Front Side

The KISS 2U Short V2 platform will be delivered as rackmount version.

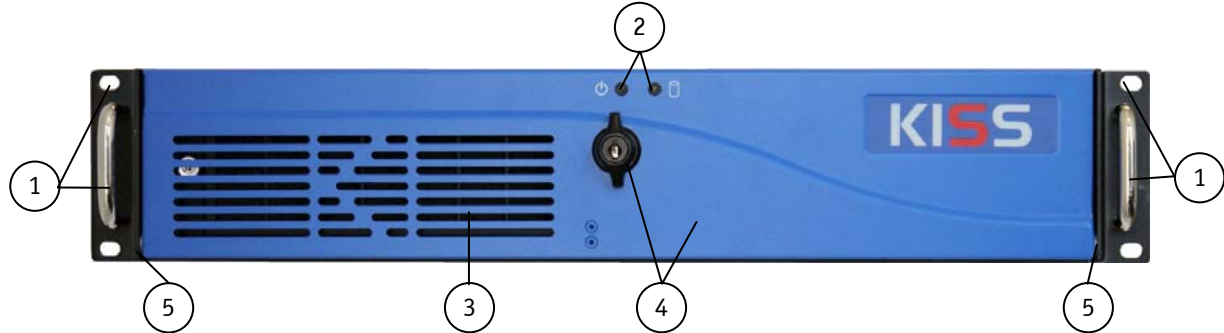
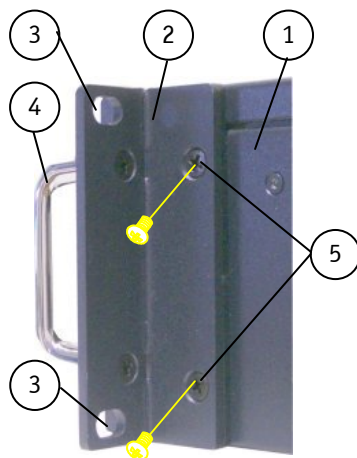


Fig. 9: Front side (rackmount version) with closed front access panel

- | | |
|--|--|
| 1 19" rack mountable bracket with handle | 3 Air grilles |
| 2 Light diffusers for HDD and Power LED indicators | 4 Front access panel with lock mechanism |

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

For desktop version the rubber feet are included. To attach the rubber feet, please follow the instructions in section 8.1 "Attaching the Rubber Feet".



- | |
|---|
| 1 Chassis and cover of the KISS 2U Short V2 platform |
| 2 19" rack mountable bracket with handle |
| 3 Holes for mounting in rack cabinets |
| 4 Screws for fastening the 19" rack mountable bracket |

Fig. 10: 19" rack mountable bracket with fastening screws

The power button, the power- and HDD-LED, the USB-interfaces, the filter mat holder and the equipped drives are located on the front panel of the KISS 2U Short V2 platform behind the front access panel.

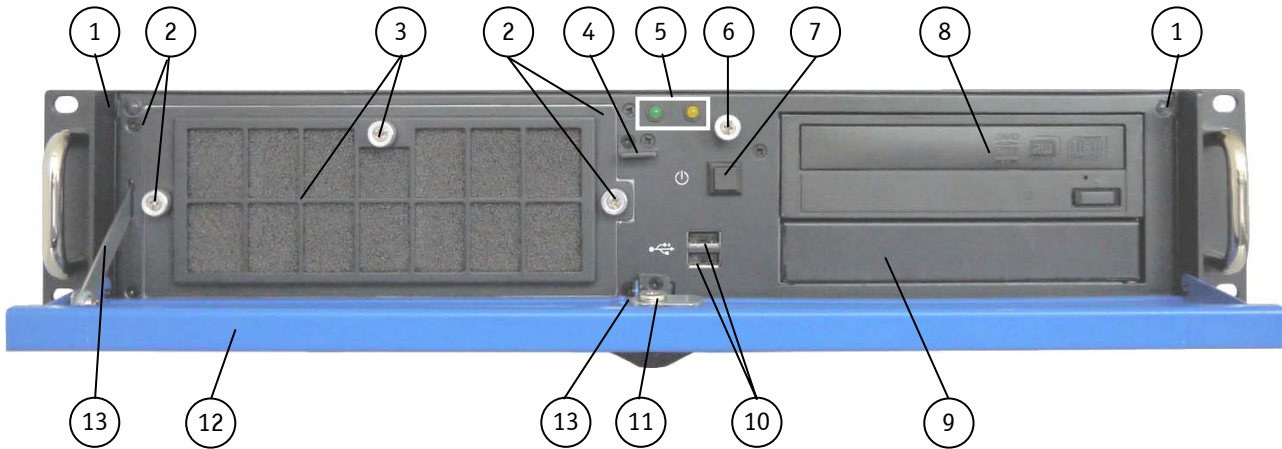


Fig. 11: Front side (rackmount version) with opened front access panel

- | | |
|---|---|
| 1 Buffer for the front access panel | 8 L1: 5.25" external accessible drive bay (shown with DVD-drive installed) |
| 2 Fan slide-in module with captive knurled screws | 9 2x USB port |
| 3 Filter mat holder with captive knurled screw | 10 Power button |
| 4 Slot for the locking mechanism | 11 Securing lock mechanism |
| 5 LED indicators (Power-LED and HDD-LED) | 12 Front access panel with air grill |
| 6 Cover fastening screw on the front side | 13 Holder of the front access panel |
| 7 Power button | |

7.1.1. Power Button



Fig. 12: Power button

The power button (see Fig. 12 and Fig. 11, pos. 7) 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 settings for the option "Restore on AC Power Loss" in BIOS Setup. The standard configurations of KISS 2U Short V2 platform are delivered with the BIOS default settings.



Caution!

Please observe that turning OFF the system via the power button (see Fig. 11, pos. 7) does not disconnect the platform from the AC mains power source.

Even when the system is turned off via the power button (see Fig. 11, pos. 7 and Fig. 12) there is still a standby-voltage of 5 VSb on the motherboard.

The unit is only completely disconnected from the mains when the power cord is disconnected either from the mains power source or from the unit. Therefore, the power cord and its connectors must always remain easily accessible. The outlet of the AC power source must be located near to the device and be easily accessible.

7.1.2. Power LED and HDD Activity LED

The LED indicators (see Fig. 11, pos. 5 and Fig. 13) of the KISS 2U Short V2 platform are located on the front side, behind the front access panel.

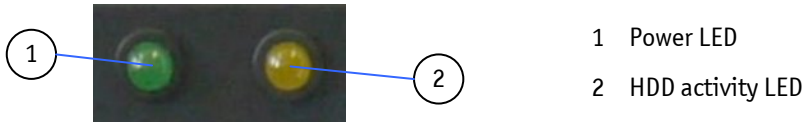



Fig. 13: Indicators on the front side

Power LED (green)	This LED (Fig. 13, pos. 1) lights up green when the system is turned on by the power button. Prerequisite: The system must be connected to the AC power source, using the power cable. The power supply ON/OFF switch on the rear of the system must be set to “ON” .
HDD LED (orange)	This LED (Fig. 13, pos. 2) lights up during hard disk activity.
	Do not press the eject button, while the drive LED is lit or is flashing.

7.1.3. USB Interfaces

KISS 2U Short V2 is equipped with two USB (2.0) interfaces (see Fig. 11, pos. 10 and Fig. 14) at the front side. These connectors allow you to connect different USB devices to the KISS 2U Short V2 platform.



Fig. 14: USB interfaces on the front side

7.1.4. Front Access Panel

The securing lock mechanism (Fig. 9, pos. 4) located at the front access panel allows you to protect your system from unauthorized use. When the access panel is locked, the cover of the KISS 2U Short 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 (Fig. 11, pos. 10 and Fig. 14) on the front of the device, the front access panel cannot be closed and locked.

7.1.5. Cover Fastening Screw on the Front Side

The cover fastening screw (Fig. 11, pos. 6) secures the cover to the chassis on the front side.



To remove the cover of the KISS 2U Short V2 platform, the following knurled screws have to be unscrewed:

- the cover fastening screw (Fig. 11, pos. 6) and Fig. 25) on the front side
- the knurled screws (Fig. 15, pos. 6, Fig. 16, pos. 8 and Fig. 26) on the rear side

To close the chassis of the KISS 2U Short V2 platform properly, the cover has to be attached and the abovementioned screws have to be fastened.

7.1.6. Filter Mat and Filter Mat Holder

The filter mat and the filter mat holder (Fig. 11, pos. 3) are located behind the air grilles (Fig. 9, pos. 3) of the front access panel. The filter mat holder (Fig. 42, pos. 4) is mounted to the fan slide-in module (Fig. 41, Fig. 11, pos. 2) via a knurled screw (Fig. 42, pos. 5) and two centring latches (Fig. 42, pos. 6). A filter mat (Fig. 44) is inserted in the filter mat holder (Fig. 43). This filter mat protects your system against dust and dirt (see section 10.2 “Cleaning the Filter Mat”).

7.1.7. Steel Mesh Guard (for IP52 Variant only)

The KISS 2U Short V2 platform variant with IP52 protection class provides (for indoor use) protection against dust and moisture. If you have ordered a KISS 2U Short V2 platform with IP52 Protection Class, the filter mat holder (Fig. 45) is fitted with an additional steel mesh guard (Fig. 46). Please observe the subsection 10.2.1 “Cleaning Steel Mesh Guard (for IP52 Protection Class only)”.



The frontal IP52 protection class for the KISS 2U Short V2 platform is only ensured with the additionally inserted steel mesh guard and with closed front access panel.

7.1.8. Fan Slide-in Module

The two system fans are integrated in a user-friendly, replaceable fan slide-in module (hot-swap) (see subsection 7.2.5 “Fan Slide-In Module and Temperature Sensor”). The fan slide-in module (Fig. 11, pos. 2 and Fig. 36) can be replaced during operation (see section 10.1 “Replacing System Fans”).

7.1.9. Drive Bays

Depending on the ordered system configuration, your KISS 2U Short V2 can be equipped with up to two drive bays (see Fig. 11, pos. 8 and 9; configuration with an internal HDD):

Drive Bay	Description (refer to Fig. 11)
L1	<input type="checkbox"/> one externally accessible 5.25" drive bay (shown with a installed DVD drive)
L2	<input type="checkbox"/> one internal 3.5" drive bay for a SATA HDD (shown with a not externally accessible HDD) or <input type="checkbox"/> a front accessible 5.25" slim-line drive bay or <input type="checkbox"/> a CF Reader

7.2. Rear Side

On the rear side, depending on the ordered KISS 2U Short V2 platform configuration, are available the external interfaces of the integrated motherboard, the additional interfaces, the power supply unit and the air exhaust openings.



The order or the number of the KISS 2U Short V2 platform interfaces can be different depending on the device configuration.

7.2.1. System Configuration with Motherboard and Low-Profile Cards

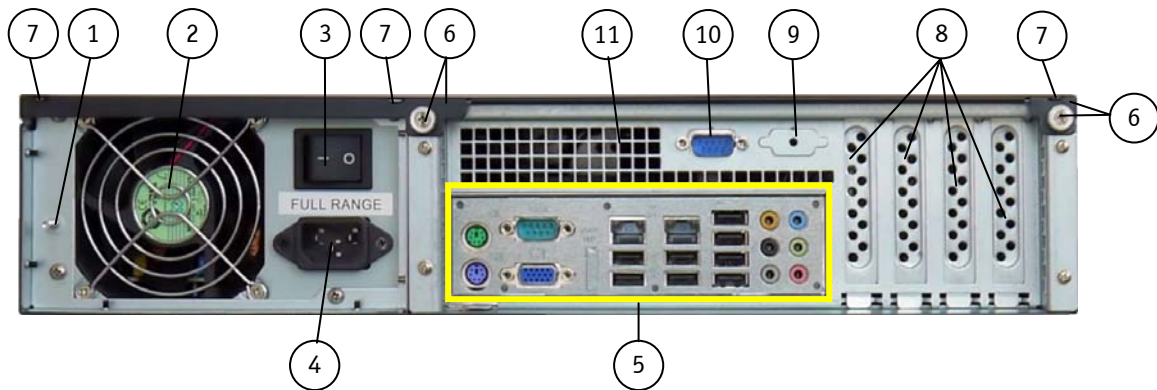


Fig. 15: Rear side of the KISS 2U Short V2 (shown as a configuration for low profile cards)

- | | | | |
|---|--|----|--|
| 1 | Grounding stud | 7 | Centring latches and centring slots |
| 2 | Fan of the PSU (AC) | 8 | Free expansion slots |
| 3 | ON/OFF switch of the PSU | 9 | Cut-out for optional (customer-specific) interface routed to the rear (9-pin D-SUB type) |
| 4 | AC-power plug | 10 | Onboard serial interface routed to the rear side (RS232) |
| 5 | External interfaces of the installed motherboard | 11 | Air exhaust openings |
| 6 | Cover latch with captive knurled screws | | |

7.2.2. System Configuration with Motherboard and Riser Cards

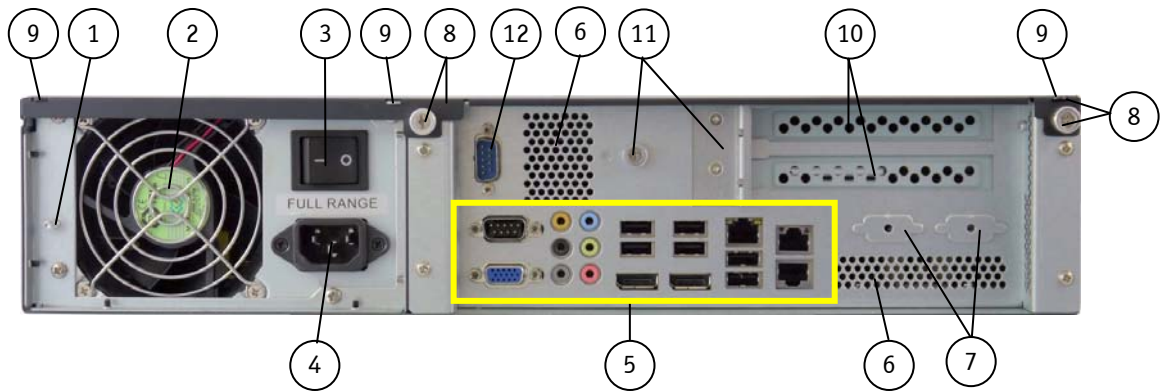


Fig. 16: Rear side of the KISS 2U Short V2 (shown as a configuration riser card)

- | | | | |
|---|--|----|---|
| 1 | Grounding stud | 8 | Cover latch with captive knurled screws |
| 2 | Fan of the PSU (AC) | 9 | Centring latches and centring slots |
| 3 | ON/OFF switch of the PSU | 10 | Free expansion slots |
| 4 | AC-power plug | 11 | Slide bracket for fixing the expansion cards with captive knurled screw |
| 5 | External interfaces of the installed motherboard | 12 | Onboard serial interface routed to the rear side (RS232) |
| 6 | Air exhaust openings | | |
| 7 | Cut-outs for optional (customer-specific) interfaces routed to the rear (9-pin D-SUB type) | | |

**Important Note!**

The captive knurled screw of the slide bracket (Fig. 16, pos. 11) may not be unscrewed (loosened) during operation (while the system is connected to the power source and switched on)!

7.2.2.1. External Interfaces of the KTQ45/Flex Motherboard



A detailed ports description can be found in the manual of the installed motherboard. You can download the corresponding manual from our web site www.kontron.com by selecting the product name.

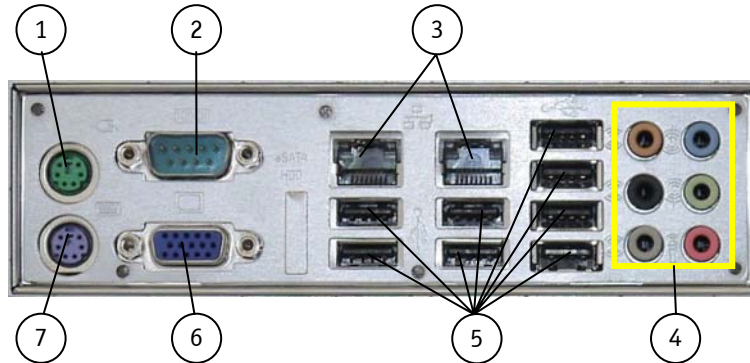


Fig. 17: External ports of the KTQ45/Flex motherboard

- | | |
|---|-------------------------------|
| 1 PS/2 mouse port (green) | 4 Audio connectors (6.1) |
| 2 Serial port (RS232) | 5 6x USB(2.0) ports |
| 3 2x Ethernet ports (RJ45),
(10/100/1000 Mbps) | 6 VGA port |
| | 7 PS/2 keyboard port (purple) |

7.2.2.2. External Interfaces of the KTQ67/Flex Motherboard



A detailed ports description can be found in the manual of the installed motherboard. You can download the corresponding manual from our web site www.kontron.com by selecting the product name.

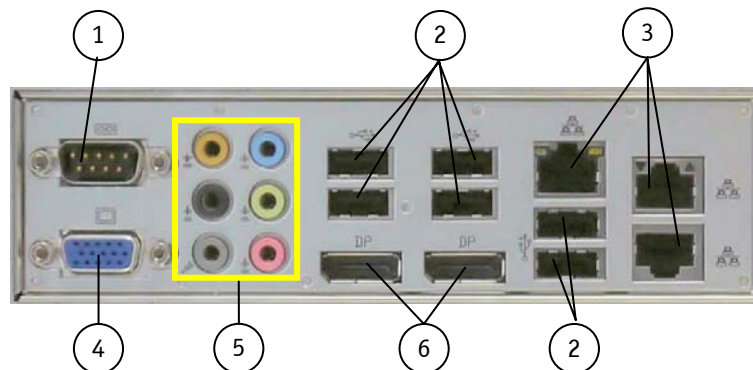


Fig. 18: External ports of the KTQ67/Flex motherboard

- | | |
|--|--------------------------|
| 1 Serial port (RS232) | 4 VGA port |
| 2 6x USB (2.0) ports | 5 Audio connectors (6.1) |
| 3 3x Ethernetport (RJ45),
(10/100/1000Mbps) | 6 Display Port (DP) |

7.2.2.3. Additional Ports

Depending on the installed motherboard, your system can be equipped with on-board interfaces (e.g. serial interface) routed to the rear panel (refer to Fig. 15, pos. 9 and Fig. 16, pos. 7). These ports allow you to connect different peripherals.



Information and technical data can be found in the corresponding board manual of the installed motherboard. You can download the relevant board manual for your system configuration from our web site at www.kontron.com by selecting the product name. Refer also to the "KISS 2U Short V2 Systems - Configuration Guides" on our web site.

7.2.3. Power Supply Unit

The KISS 2U Short V2 is equipped with an AC wide range PSU (Fig. 15 and Fig. 16, pos. 4). On request only, it can be equipped with a +24VDC or a -48VDC PSU. For information about the integrated power supply unit (PSU) and the rated voltage of your system, please refer to the type label attached on the right side of the unit.

7.2.4. Grounding Stud

The grounding stud is located on the rear side of the KISS 2U Short V2 platform (Fig. 15 and Fig. 16, pos. 1).



The KISS 2U Short V2 systems with marked grounding studs 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. 19: Grounding stud marked with PE symbol



Fig. 20: Unmarked grounding stud

7.2.5. Fan Slide-In Module and Temperature Sensor

The two system fans are securely installed in a user-friendly fan-slide-in module (Hot-Swap). The fan slide-in module is mounted in the fan compartment on the front of the device.

The systems fans are temperature-controlled via the temperature sensors which are built in the system. The systems fans ensure a sufficient airflow for an optimal, active cooling of the system.



The operation of the KISS 2U Short V2 platform is permitted only with a functional fan slide-in module (refer to the section 10.1 "Replacing System Fans").

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

- ❑ part number of the fan slide-in module: 1050-8442

7.3. Side View

The four M4 metric tapped holes (Fig. 21, pos. 3) 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 2U Short V2 platform for system installation into a 19" industrial cabinet. Refer to the chapter 11 "Slide Rails (Option)".

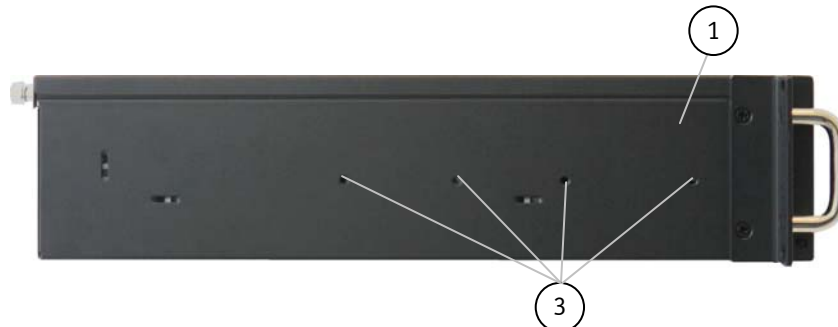


Fig. 21: KISS 2U Short V2 - left side

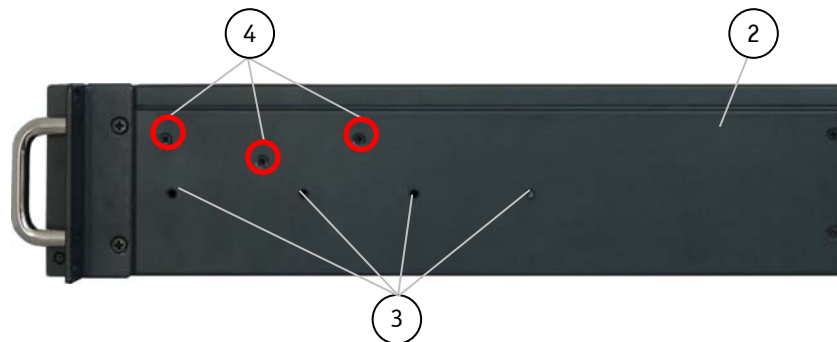


Fig. 22: KISS 2U Short V2 - right side

- 1 Left side view of the KISS 2U Short V2 platform
- 2 Right side view of the KISS 2U Short V2 platform
- 3 4x tapped M4 metric holes (on both sides)
- 4 Screws (do not remove) that secure an internal holder for the drive cage



Please do not remove the three screws (Fig. 22, Pos. 4). These are fixing screws for the internal holder for the drive cage.

7.4. Cover

The cover will be fixed to the chassis using two fixing brackets at the front side of the cover (Fig. 23, pos.3 and pos. 4), the fixing brackets at the rear side of the cover (Fig. 23, pos.5 and pos. 7) and the cover fastening screw (Fig. 11, pos. 6) at the front side of the KISS 2U Short V2 platform.

When inserting the cover, make sure that:

- ❑ At the front side: the fixing brackets (Fig. 23, pos. 4) are inserted properly into the corresponding cover retaining plate of the chassis (Fig. 7 and Fig. 8 pos. 4).
- ❑ At the rear side: the centring latches and the cover retaining plate (Fig. 7 and Fig. 8, pos. 6 and pos. 9) are properly inserted into the fixing bracket and centring slots of the cover (Fig. 23, pos.5 and 6).

The angled centering bracket (Fig. 23, pos. 3) and the front cover fastening screw Fig. 11, pos. 6) secure the cover on the front side. The fixing brackets with knurled screws (Fig. 23, pos. 7) secure the cover on the rear side.

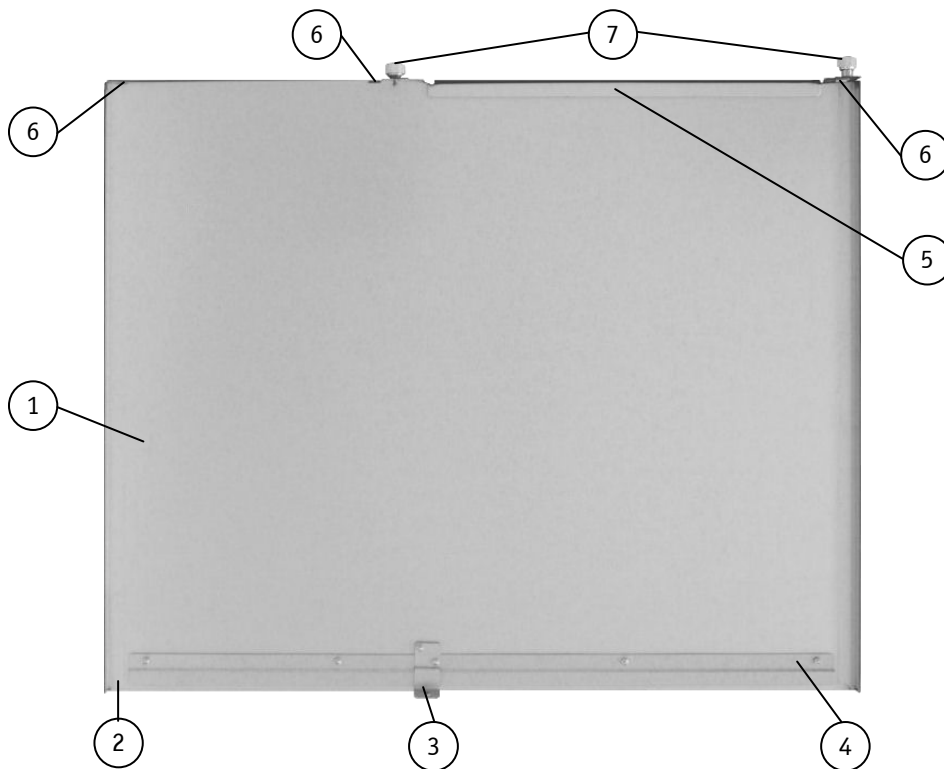


Fig. 23: Inside of the cover with fixing brackets

- | | |
|---|---|
| 1 Inside of the cover | 4 Fixing bracket (on the front side) |
| 2 Front part of the cover | 5 Fixing bracket (on the rear side) |
| 3 Angled centering bracket with tapped hole (on the front side) | 6 Centring slots on the cover |
| | 7 Cover fixing brackets with knurled screws |



In order to close the KISS 2U Short V2 platform chassis, ensure that the cover is reinstalled properly and secured with following screws:

- ❑ the cover fastening screw (Fig. 11, pos. 6) and Fig. 25) on the front side
- ❑ the knurled screws (Fig. 15, pos. 6, Fig. 16, pos. 8 and Fig. 26) on the rear side

8. Installation and Removal

8.1. Attaching the Rubber Feet

If the system is used as desktop version, attach the supplied rubber feet to the device.



Before attaching the rubber feet, ensure that your system is switched off and disconnected from the main power source.

To attach the rubber feet, proceed as follows:

1. Turn off the system and disconnect it from the mains power source.
2. Turn the device upside down on a table or desk.
3. Ensure that all components are securely installed and that the device cover has been screwed on tightly.
4. Remove the protective film from the rubber feet.
5. Stick the four rubber feet to the underside of the device.

8.2. Accessing Internal Components

This section contains important information that you must read before accessing the internal components. You must follow these procedures properly when handling any boards.

8.2.1. Installing / Removing Expansion Cards

Please consider following instruction when you install (or remove) expansion cards.



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

The installation and removal of expansion cards have to be carried-out only by qualified specialist personnel in accordance with the description in this manual.

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 refer to the ESD safety procedures for handling assemblies with static sensitive devices. Failure to take heed of this warning instruction can result in damage to the device.



Please read information provided by the manufacturer of any expansion cards before installing them or removing them 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 mains power source. Disconnect all peripherals.
2. Open the front access panel.



Fig. 24: Open of the front access panel



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

- ❑ the cover fastening screw (Fig. 11, pos. 6) and Fig. 25) on the front side
- ❑ the knurled screws (Fig. 15, pos. 6, Fig. 16, pos. 8 and Fig. 26) on the rear side

3. Unscrew 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. 25 and Fig. 26).



Fig. 25: Unscrew the cover fastening knurled screw on the front side



Fig. 26: Unscrew the knurled screw on the rear side

4. Pull the cover out a little bit (Fig. 27) to release the cover centering and fixing brackets (Fig. 23, pos.3, 4 and 5) from the retaining plates of the chassis (Fig. 7 und Fig. 8, pos. 4 und pos. 9).



Fig. 27: Pull out the cover centering and fixing brackets from the retaining plates of the chassis.

5. Lift the cover up (on the rear edge) and remove it (Fig. 28).



Fig. 28: Removing the cover

8.2.1.1. Installing/Removing Low Profile Expansion Cards

In order to install/remove low profile expansion cards perform the following steps:

1. Open the unit as described in the subsection 8.2.1 (step 1 to 5).
2. Unscrew the fastening screws of the slot bracket or card slot bracket (Fig. 29, pos. 1). Retain the screws for later use.
3. Insert/remove the expansion card/s in respectively out from the expansion slot/s of the motherboard and secure the card brackets or the slot brackets to the rear with the retained screws.

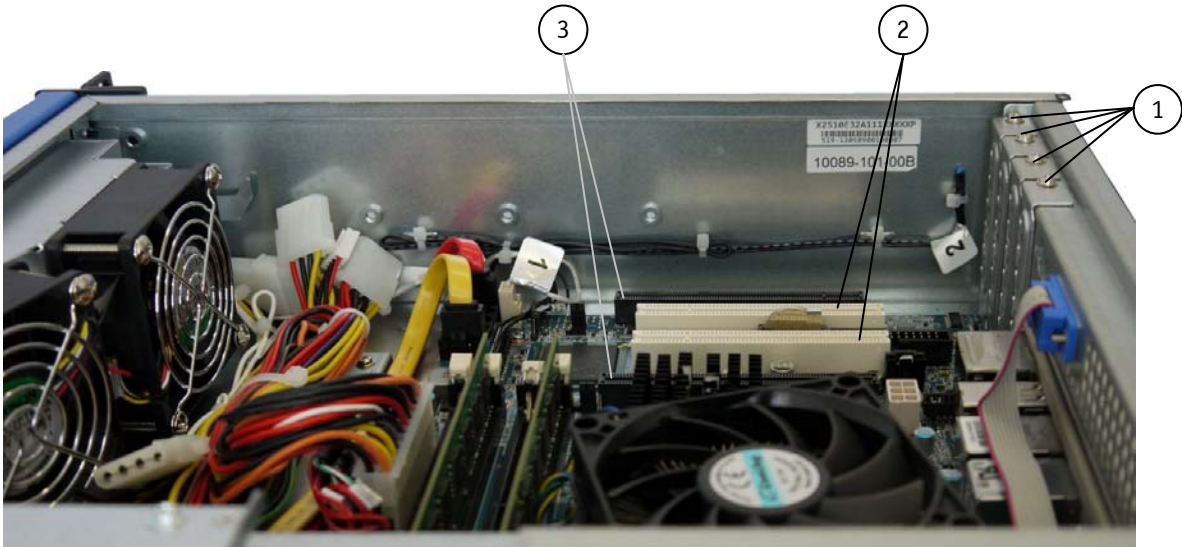


Fig. 29: Detail KISS 2U Short V2 with KTQ45/Flex (system configuration for low profile cards)

- 1 Fastening screws for the slot brackets (or for the card slot brackets if expansion cards are installed)
 - 2 2x PCI slots for expansion cards (max. length of the card: 230 mm)
 - 3 2x PCIe slots for expansion cards (max. length of the card: 230 mm)
4. Close the system and secure the cover with the captive knurled screw at the front side and the two captive knurled screws on the rear side.



In order to close the KISS 2U Short V2 platform chassis, ensure that the cover is reinstalled properly and secured with following screws:

- the cover fastening screw (Fig. 11, pos. 6) and Fig. 25) on the front side
- the knurled screws (Fig. 15, pos. 6, Fig. 16, pos. 8 and Fig. 26) on the rear side

8.2.1.2. Installing/Removing Expansion Cards via PCI or PCIe Riser Card

In order to install/remove expansion cards via PCI or PCIe riser card perform the following steps:

1. Open the unit as described in the subsection 8.2.1 (step 1 to 5).

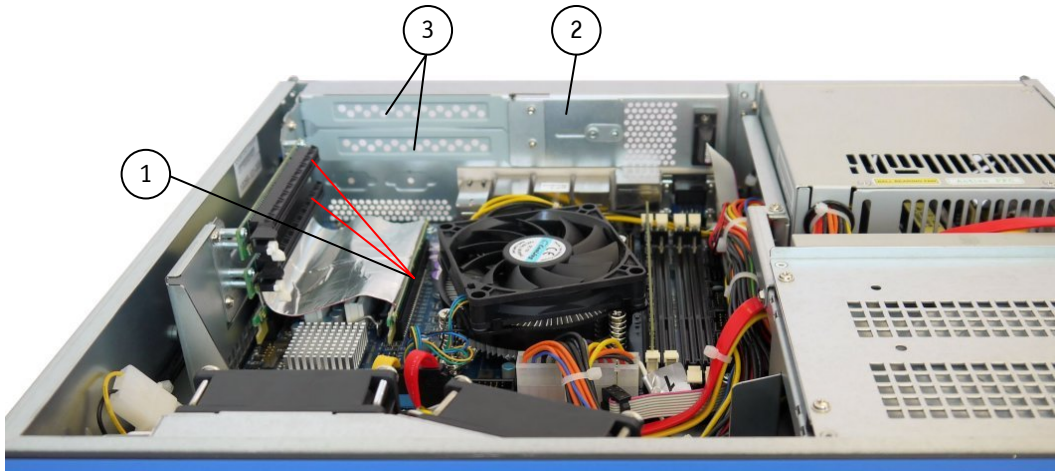


Fig. 30: Detail inside of KISS 2U Short V2 with KTQ67/Flex (system configuration with PCIe riser card)

- | | | | |
|---|-----------------|---|--|
| 1 | PCIe riser card | 3 | Slot brackets (the card slot brackets if expansion cards are installed)
max. card length: 230 mm) |
| 2 | Slide bracker | | |

2. Loosen (turn 1/2 to the left) the fastening screws (Fig. 31, pos. 1) to unlock the slide bracket (Fig. 31, pos. 2). The slide bracket is used to secure in place the slot bracket or the card slot bracket.

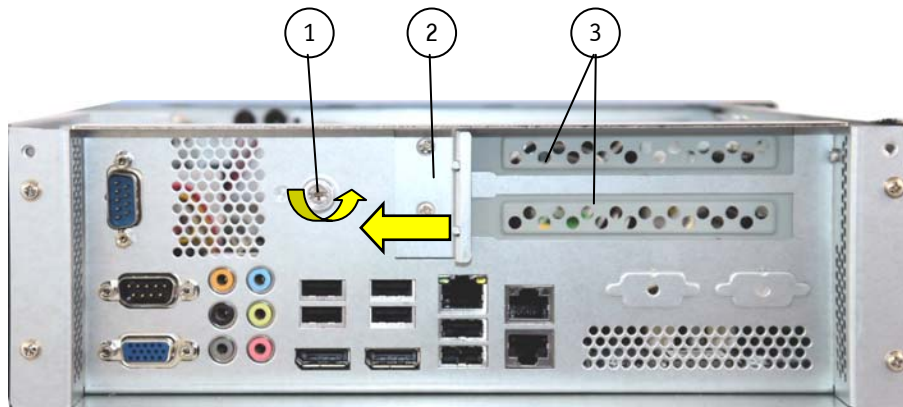


Fig. 31: Detail rear side of KISS 2U Short V2 with KTQ67/Flex (system configuration with PCIe riser card)

- | | | | |
|---|--------------------------------------|---|---------------|
| 1 | Fastening screw of the slide bracket | 2 | Slide bracket |
| | | 3 | Slot bracket |

3. Move the slide bracket to the left. The slot brackets are disengaged now and can be removed from the system.

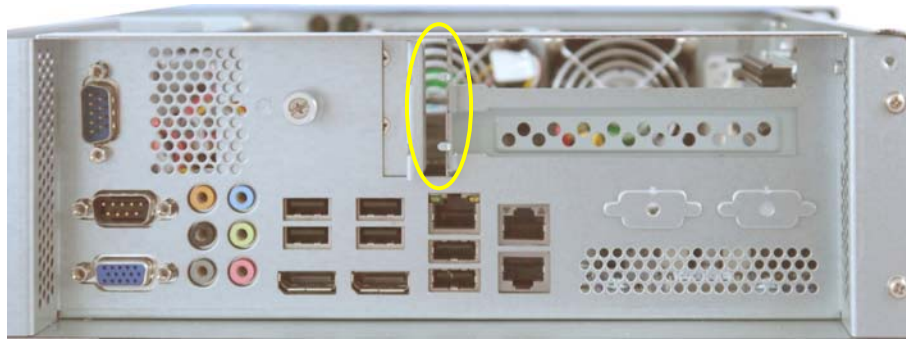


Fig. 32: Detail rear side of KISS 2U Short V2 with opened slide bracket

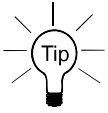
4. Insert/remove the expansion card into/out of the PCI/PCIe slot of the riser card.
5. Place the bracket of the expansion card or the slot bracket on the rear side of the chassis.
6. Move the slide bracket to the right until it rests firmly on the brackets of the expansion cards or the slot brackets.
7. Secure the slide bracket position with the fastening screws (Fig. 31, pos. 1)
8. Close the system and secure the cover with the captive knurled screw at the front side and the two captive knurled screws on the rear side.



In order to close the KISS 2U Short V2 platform chassis, ensure that the cover is reinstalled properly and secured with following screws:

- ❑ the cover fastening screw (Fig. 11, pos. 6) and Fig. 25) on the front side
- ❑ the knurled screws (Fig. 15, pos. 6, Fig. 16, pos. 8 and Fig. 26) on the rear side

8.3. Installation in a 19" Industrial Cabinet



Expansion card installation should be performed before installing the KISS 2U Short V2 system into a 19" industrial cabinet.

Please consider the instructions described in the section 8.2 "Accessing Internal Components".

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

For KISS 2U Short V2 versions and system configurations, please refer to the corresponding "KISS 2U Short V2 Systems - Configuration Guides" on our website www.kontron.com. More information and technical data can be found in the corresponding board manual (motherboard depending on the system configuration ordered). You can download the manual from our web site at www.kontron.com by selecting the product name.



Caution:

Energy hazards > 240 VA are present inside the chassis!

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

In order to setting-up installing / removing the KISS 2U Short 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 supplied document "General Safety Instruction for IT Equipment".

The KISS 2U Short 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 2U Short 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 2U/4U" (PN: 1051-7200).

Ensure there is sufficient air circulation around the device when installing the KISS 2U Short 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 2U Short V2 platform to prevent the device from possibly overheating.

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 2U Short 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 2U Short V2 platform, loaded with hazardous energy.



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

9.1. AC Power Connection

The AC mains input socket is located on the rear side of the KISS 2U Short V2.



Caution!

Even you turn off the system using the power button (Fig. 11, pos. 7) there is still a standby-voltage of 5 VSb on the motherboard.

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.

The outlet of the AC power source must be located near to the device and be easily accessible.



Please observe the settings for the option “Restore on AC Power Loss” in BIOS Setup. The standard configurations of KISS 2U Short V2 platform are delivered with the BIOS default settings.

ON/OFF Switch
of the PSU



AC power plug

Fig. 33: KISS 2U Short V2 - AC connection

To connect the KISS 2U Short V2 to power, proceed as follows:

1. The KISS 2U Short 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 (refer to the subsection 7.2.4 “Grounding Stud”, Fig. 19 and Fig. 20).
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.



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

Make sure that the mains 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. Operating System and Hardware Components Drivers

The KISS 2U Short 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 by selecting the product name/tab Downloads/Windows.

If you have ordered KISS 2U Short 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 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 2U Short V2 with a dry cloth.
- ❑ Stubborn dirt should be removed using a mild detergent and a soft cloth.
- ❑ Clean the filter mat regularly (see section 10.2 "Cleaning the Filter Mat").

10.1. Replacing System Fans



The operation of the KISS 2U Short V2 platform is permitted only with a functional fan slide-in module. Defective components may be replaced only by Kontron original spare parts.

- ❑ part number of the fan slide-in module: 1050-8442

Important instructions!

The fan slide-in module is changeable while the system is powered-up. This maintenance may only be carried out by qualified personnel familiar with the associated dangers.

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

1. Remove the air filter mat as described in the section 10.2 "Cleaning the Filter Mat" (step 1 to 3) and put it aside for later use.
2. Loosen the two knurled screws of the fan slide-in module (Fig. 34, pos. 1)
3. Pull-out the fan slide-in module to disconnect it from the internal fan control socket (Fig. 35, pos. 3).
4. Lift the slide-in module up in the arrow direction to remove it from the fan compartment (see Fig. 35).

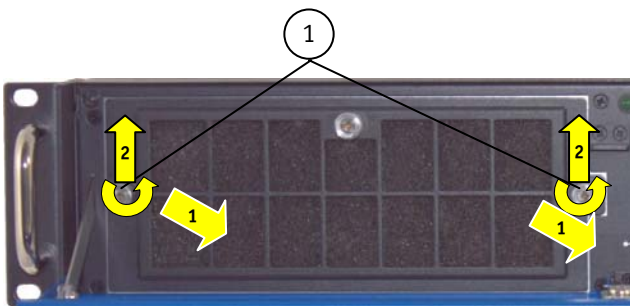


Fig. 34: Detail: removing the fan slide-in module

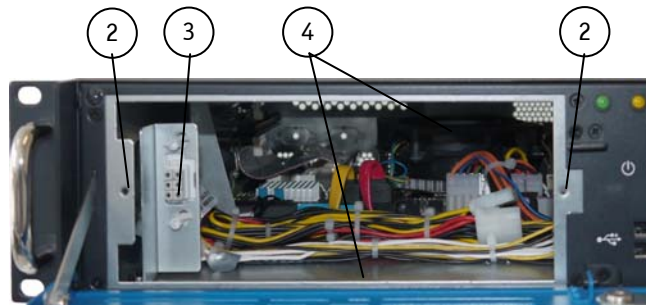


Fig. 35: Detail: Fan compartment (without fan slide-in module)

Legend for Fig. 34 and Fig. 35:

- | | |
|---|---|
| 1 Fan slide-in module with two knurled screws | 3 Socket for fan power supply and control |
| 2 Threaded holes (chassis frame) for securing the fan slide-in module | 4 Fan compartment |

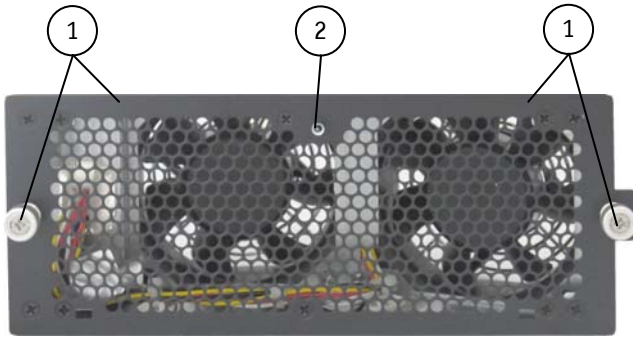


Fig. 36: Fan slide-in module without filtermat holder

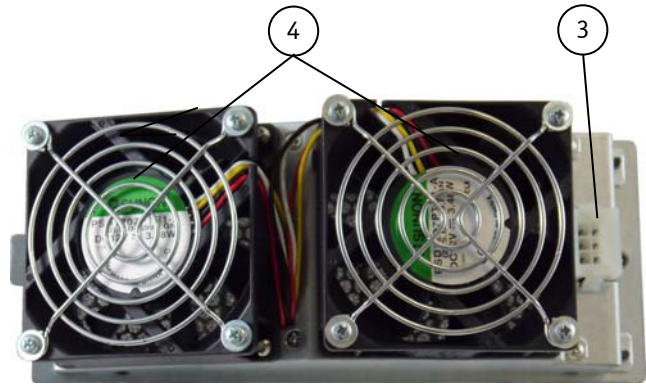


Fig. 37: Rear view of the fan slide-in module



Fig. 38: Fan slide-in module with mounted filter mat holder



Fig. 39: Side view of the fan slide-in module

Legend for Fig. 36 and Fig. 37:

- | | |
|--|--|
| 1 Fan slide-in module with two knurled screws | 3 Socket for fan power supply and control |
| 2 Bolt with tapped hole for mounting the filter mat holder | 4 2x fans (temperature controlled independently from each other) |

5. Replace the fan slide-in module with a new functional module.
6. Insert the retained filter mat holder (with filter mat) to the front side of the fan slide-in module as described in the section 10.2 "Cleaning the Filter Mat" (step 7 and step 8).
7. Slide the fan slide-in module with mounted filter mat holder (Fig. 38) into the fan compartment (Fig. 35, pos. 4).
8. Push the fan slide-in module into the fan compartment until the fan control connector (Fig. 37, pos. 2) is firmly inserted into the socket (Fig. 35, pos. 3).
9. Fasten the knurled screws of the fan slide-in module (Fig. 34, pos. 1)

10.2. 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. 40, 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 replaced during operation of the system.

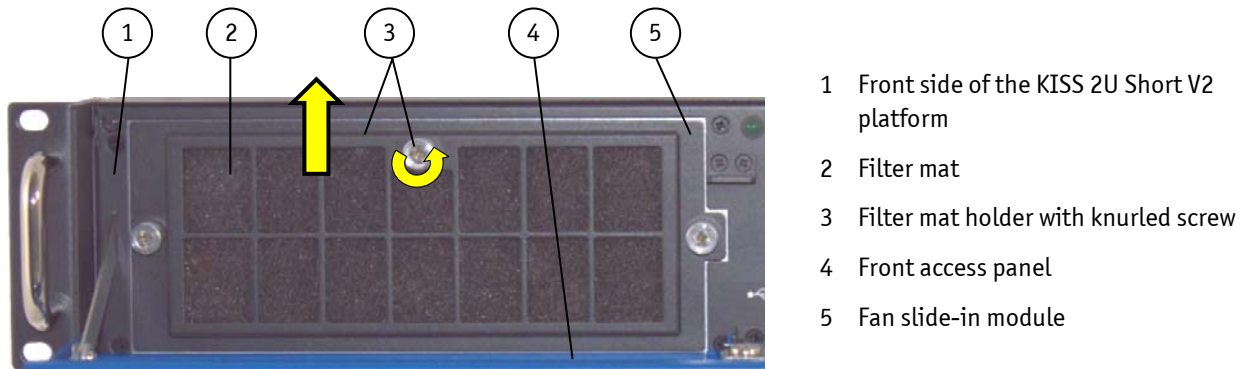


Fig. 40: Detail with filter mat holder on the front side of the KISS 2U Short V2 platform

To replace the filter mat, proceed as follows:

1. Open the front access panel (Fig. 40, pos. 4).
2. Loosen the knurled screw that secures the filter mat holder to the fan slide-in module (Fig. 40, pos. 3 and Fig. 42, pos. 5).
3. Pull the filter mat holder out from the centring holes (Fig. 41, pos. 3) in the direction marked with the arrow (Fig. 40) and lift it off.
4. Remove the dirty filter mat.
5. Clean the filter mat as follows:
 - Rinse in water (up to approx. 40°C/104°F; you may add a mild commercial detergent).
 - It is also possible to beat it, suction clean 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 air filter mat with a piercing jet of water or wring it out.
6. After cleaning and drying the filter mat, place it in the filter mat holder (see Fig. 43).
7. Reattach the filter mat holder to the front side of the fan slide-in module by inserting the centring latches (Fig. 42, pos. 6) into the centring holes (Fig. 41, pos. 3).
8. Fasten the filter mat holder by tightening the knurled screw (Fig. 42, pos. 5) to the bolt with tapped hole (Fig. 41, pos. 1) at the fan slide-in module.



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

Air filter mat: part number: 1050-8374.

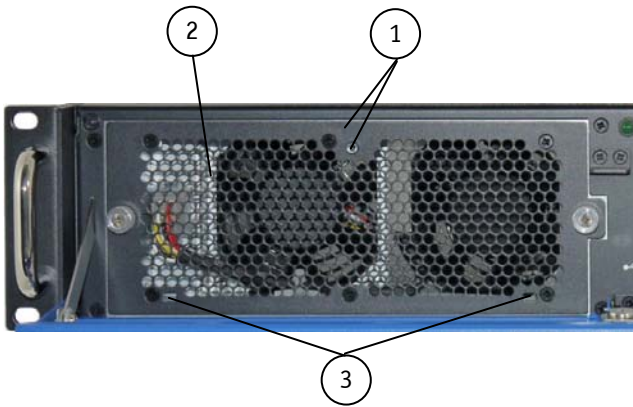


Fig. 41: Detail without filter mat holder on the front side

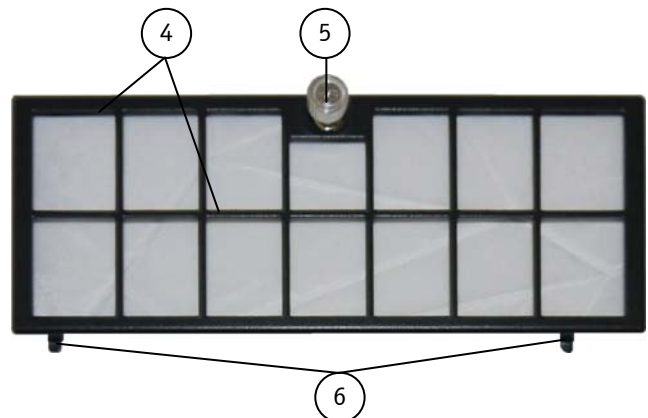


Fig. 42: Filter mat holder without filter mat



Fig. 43: Filter mat holder with filter mat



Fig. 44: Filter mat

Legende für Fig. 41 und Fig. 42:

- | | |
|--|---|
| 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 Centring holes for the filter mat holder | 6 Centring latches of the filter mat holder |

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

If you have ordered a KISS 2U Short V2 platform with IP52 Protection Class, the filter mat holder (Fig. 45) is fitted with an additional steel mesh guard (Fig. 46).

In order to remove the steel mesh guard, follow the steps 1 to 3 of the section 10.2 "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. 46) and filter mat (Fig. 44) after cleaning into the filter mat holder (Fig. 42). The positioning of the protective steel mesh guard and the filter mat in the filter mat holder is shown in Fig. 47.

Reattach the filter mat holder to the front side of the fan slide-in module as described in the section 10.2 "Cleaning the Filter Mat", step 7 and 8.



Fig. 45: IP52 - Filter mat holder with inserted steel mesh guard and filter mat

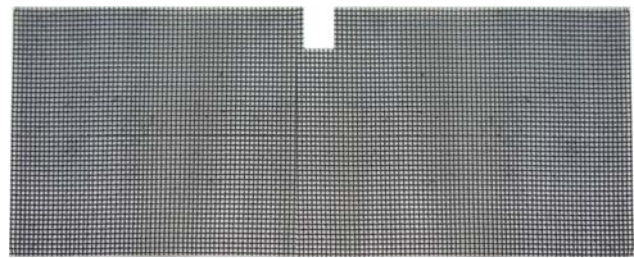


Fig. 46: Steel mesh guard (for IP52 variant)



Fig. 47: 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 2U Short V2 platform only with an additional inserted steel mesh guard, and with closed front access panel.

10.3. Replacing the Lithium Battery

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

1. Open the unit as described in subsection 8.2.1 "Installing / Removing Expansion Cards" (step 1-5).

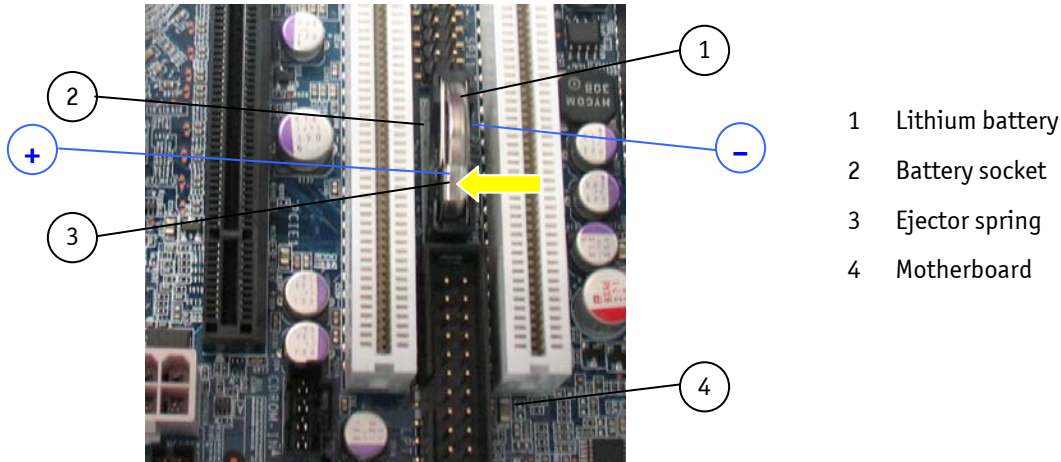


Fig. 48: Location of the Lithium Battery

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.
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; refer to Fig. 48.
6. The lithium battery must be replaced with an identical battery or a battery type recommended by Kontron Europe (Lithium battery 3.0 V for RTC, type: CR2032).
7. Reinsert the expansion cards which you removed and reconnect the disconnected data cables.
8. Close the device, as described in the subsection 8.2.1.1 (step 4) or 8.2.1.2 (step 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 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 2U Short V2 platform into a 19" industrial cabinet. These can be ordered separately.



The KISS 2U Short 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).



Only the specified M4x6 screws should be used to attach telescope rails to the KISS 2U Short V2 platform.

12. Main Specifications

KISS 2U Short V2-xxxxxxxx-y	
Installed Board	* refer to “KISS 2U Short V2 Systems - Configuration Guides”
Control and LED Indicators (on the front side)	Power Button Power LED (green) HDD LED (yellow)
Interfaces (on the front side)	2x USB (2.0)
Interfaces (on the rear side)	Interfaces of the board slot * refer to the manual of the installed board
Drive Bays	Up to two drive bays * Optional configuration (depending on the system configuration ordered (refer also to “KISS 2U Short V2 Systems - Configuration Guides”)
Free Expansion Slots for KISS 2U Short V2 Low Profile	Up to four expansion slots, for low profile cards with max. card length of 230 mm: 2x PCI, 32 Bit @ 33 MHz 1x PCIe x16 (PEG) 1x PCIe x4
Free Expansion Slots for KISS 2U Short V2	Up to two expansion slots, for full height cards with max. length of 230 mm: 2x PCI, 32 Bit @ 33 MHz or 1x PCIe x16 (PEG) and 1x PCIe x4 or 1x PCIe x16 (PEG) and 1x PCI
Lithium Batterie	* refer to the manual of the installed board
Rated Voltage Range	Refer to the type label



KISS 2U Short V2 = System type

The “xxxxxxxx” 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 2U Short V2 Systems - Configuration Guides” and the manual of the installed board can be downloaded from our web site at www.kontron.com by selecting the product name.

12.1. Electrical Specifications

The electrical specification you can read off on the type label of your KISS 2U Short V2 platform.

12.2. Mechanical Specifications

Dimension	KISS 2U Short V2
Height	2U (88 mm) (3.465")
Width	Front: 19"; Gehäuse: 430 mm (16.9")
Depth	Chassis: 350 mm (13.779")
Weight	Approx. 10 kg (22.046 lbs.)
Chassis	Chassis: steel sheet, black (RAL 7021) Front access panel: steel sheet, blue (RAL 5017)

12.3. Environmental Specifications

Thermal Management	2x system fan, temperature-controlled (fan slide-in module) PSU fan CPU fan
Operating Temperature	0 ... +50 °C [+55 °C (131 °F) at 10% POH per month] (32 .. 122 °F [+55 °C (131 °F) at 10% POH per month]
Storage / Transit Temp.	-20 ... +70 °C (-4 ... 158 °F)
Relative Humidity (Operating/Storage/Transit)	10-95 %, @ 40 °C, non condensing
Operating Altitude	2,000 m (6,560 ft)
Storage / Transit Altitude	10,000 m (32,810 ft)
Operating Shock	15 G, 11 ms duration, half sine
Storage / Transit Shock	30 G., 11 ms duration, 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)
Protection Class	Front: IP20; optional: IP52

12.4. CE Directives and Standards

CE Directive	
Elektrical 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	CE Directive 93/68/EEC

Elektrical Safety	Harmonized Standards
EUROPE	Information technology equipment - Safety - Part 1: General requirements EN 60950-1: 2006
U.S.A. / CANADA	to meet UL60950-1:2007 / CSA C22.2- No. 60950-1-7:2007

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
CANADA	ICES-003, Class A

13. Standard Interfaces – Pin Assignments

Low-active signals are indicated by a minus sign.

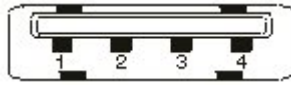
13.1. Serial Interface (RS232)

Pin	Signal Name	9-pin D-SUB Connector (male)
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)	

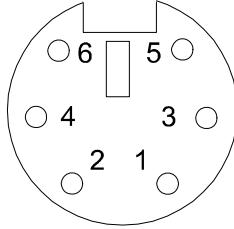
13.2. VGA Port

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)	

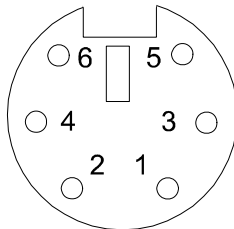
13.3. USB Port

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

13.4. 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.	

13.5. 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.	

14. Technical Support

For technical support, please contact our Technical Support department:

Tel: +49 (0) 8165/77 112

e-mail: 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.

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
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.

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