

» User's Guide «



KISS 1U

KISS 1U PCI762-A

User's Guide (Version 1.1)

1056-7706

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Revision History

Revision	Brief Description of Changes	Date of Issue
1.0	Initial Version	2014-Sep-18
1.1	Front LAN port description corrected, legal information updated	2017-Apr-27

Terms and Conditions

Kontron warrants products in accordance with defined regional warranty periods. For more information about warranty compliance and conformity, and the warranty period in your region, visit <http://www.kontron.com/terms-and-conditions>.

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Customer Service





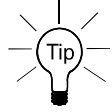
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2.1. Symbols used in this Manual

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 precedes various product configuration details.
	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 1U platform!

This chapter contains instructions which must be observed when working with the KISS 1U 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 Instruction for IT Equipment



Please read this chapter carefully and take careful note of the instructions, which have been compiled for your safety and to ensure to apply in accordance with intended regulations. If the following general safety instructions are not observed, it could lead to injuries to the operator and/or damage of the product; in cases of nonobservance of the instructions Kontron is exempt from accident liability, this also applies during the warranty period.

The product has been built and tested according to the basic safety requirements for low voltage (LVD) applications and has left the manufacturer in safety-related, flawless condition. To maintain this condition and to also ensure safe operation, the operator must not only observe the correct operating conditions for the product but also the following general safety instructions:

- The product must be used as specified in the product documentation, in which the instructions for safety for the product and for the operator are described. These contain guidelines for setting up, installation and assembly, maintenance, transport or storage.
- The on-site electrical installation must meet the requirements of the country's specific local regulations.
- If a power cable comes with the product, only this cable should be used. Do not use an extension cable to connect the product.
- To guarantee that sufficient air circulation is available to cool the product, please ensure that the ventilation openings are not covered or blocked. If a filter mat is provided, this should be cleaned regularly. Do not place the system close to heat sources or damp places. Make sure the system is well ventilated.
- Only devices or parts which fulfill the requirements of SELV circuits (Safety Extra Low Voltage) as stipulated by IEC 60950-1 may be connected to the available interfaces.
- Before opening the device, make sure that the device is disconnected from the mains.
- Switching off the device by its power button does not disconnect it from the mains. Complete disconnection is only possible if the power cable is removed from the wall plug or from the device. Ensure that there is free and easy access to enable disconnection.
- The device may only be opened for the insertion or removal of add-on cards (depending on the configuration of the system). This may only be carried out by qualified operators.
- If extensions are being carried out, the following must be observed:
 - all effective legal regulations and all technical data are adhered to
 - the power consumption of any add-on card does not exceed the specified limitations
 - the current consumption of the system does not exceed the value stated on the product label.
- Only original accessories that have been approved by Kontron can be used.
- Please note: safe operation is no longer possible when any of the following applies:
 - the device has visible damages or
 - the device is no longer functioningIn this case the device must be switched off and it must be ensured that the device can no longer be operated.

Additional safety instructions for DC power supply circuits

- ❑ To guarantee safe operation of devices with DC power supply voltages larger than 60 volts DC or a power consumption larger than 240 VA, please observe that:
 - the device is set up, installed and operated in a room or enclosure marked with "RESTRICTED ACCESS", if there are no safety messages on product as safety signs and labels on the device itself.
 - no cables or parts without insulation in electrical circuits with dangerous voltage or power should be touched directly or indirectly
 - a reliable protective earthing connection is provided
 - a suitable, easily accessible disconnecting device is used in the application (e.g. overcurrent protective device), if the device itself is not disconnectable
 - a disconnect device, if provided in or as part of the equipment, shall disconnect both poles simultaneously
 - interconnecting power circuits of different devices cause no electrical hazards
- ❑ A sufficient dimensioning of the power cable wires must be selected – according to the maximum electrical specifications on the product label – as stipulated by EN60950-1 or VDE0100 or EN60204 or UL508 regulations.
- ❑ The devices do not generally fulfill the requirements for "centralized DC power systems" (UL 60950-1, Annex NAB; D2) and therefore may not be connected to such devices!



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 1U Platform is the responsibility of the distributor.

When used as intended the KISS 1U 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 1U platform, loaded with hazardous energy.

4.1. Operation of Laser Source Devices

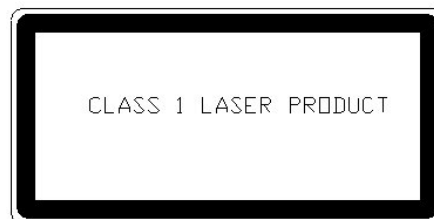


Fig. 1: Laser radiation warning label

The optional CD ROM and DVD drives contain light-emitting diodes (classified in accordance with IEC 60825-1:2007: 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 ionizes 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 CPU board 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 1U platform (system configuration ordered)
- 1x AC power cable
- Rubber feet (self-adhesive)
- 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 1U platform are located on the right side of the device.

System Type	Product Name	Product Identifikation
KISS 1U	KISS 1U xxxxxxxx-y	<p>KISS 1U = 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:

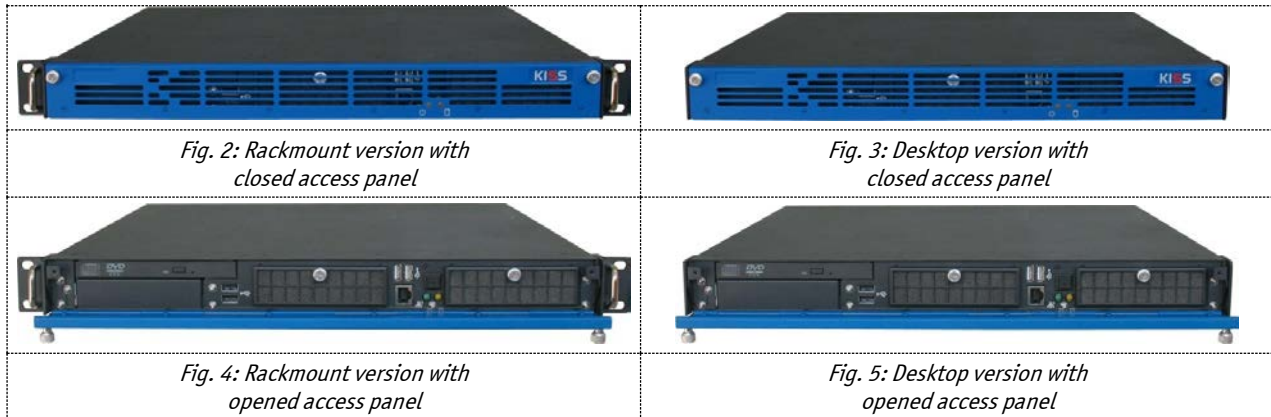
A: corresponds to the systems with a wide range AC power supply

7. Product Description

The KISS 1U platform expands the Kontron KISS computer line. KISS 1U is a scalable 2U (19") platform, equipped with a SBC (PCI-762) (Single Board Computer) board, supporting various system configurations (refer to "KISS 1U Systems - Configuration Guides" on our website). The flexible customer-specific hardware system configuration and the robust construction with excellent mechanical stability of the KISS 1U platform offer the superior qualities of a computer designed for operation in harsh industrial environment.

The KISS 1U platform is designed to be installed in 19" racks. It may be also installed as a desktop unit.

Versions of the KISS 1U platform:



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

- D1:** one 5:25" Slim front accessible drive bay
- D2:** one 3.5" front accessible drive bay or an front accessible slim drive
- D3:** one 3.5" internal accessible drive bay

The KISS 1U platform can be expanded either with PCI, or with PCIe (full-size or half-size) expansion cards (depending on the ordered system configuration).



For customized versions and system configurations, please observe the corresponding "KISS 1U System - Configuration Guides" for KISS 1U on our web site www.kontron.com.

The device is equipped with an AC wide rang.

The controls of the KISS 1U platform are located behind the front access panel and consist, as standard, of a power button, a power and HDD/SSD LED.

Four system fans are installed at the front side of the unit. These are attached to the system by two fan slide-in modules. The fan slide-in modules simplify the installation and removal of these components.

The washable filter mats, which protect your system against dust and dirt, are located on the front side of the system. These filter mats can be replaced during operation.

The type label is located on the right hand side of the device.



Fig. 6: KISS 1U platform - front side



The KISS 1U platforms are designed to be operated in horizontal position only.

When powering on the KISS 1U platform, make sure that the air intake and exhaust openings are not obstructed by objects.

7.1. Front Side

The KISS 1U platform is available as a rackmount version.

The front access panel (Fig. 7, pos. 4) provides protection against unauthorized access to the front-accessible drives, the filter mat holders and the power button of your KISS 1U platform. The front access panel can be screwed on and off by the knurled screws. During standard operation, the front access panel should be closed and the knurled screws should be tightened.

The power button, the power LED, the hard disk activity LED, 4x USB2.0 interfaces, 1x LAN interface (not used), a 3.5" and a 5.25" slim drive bay are located behind the front access panel (Fig. 7, pos. 4).



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

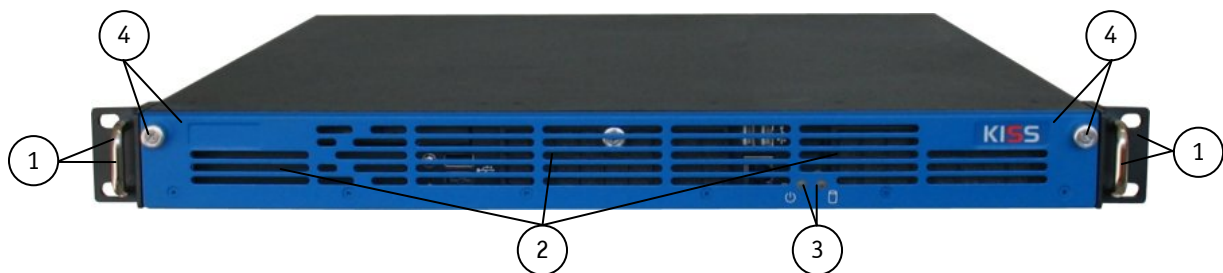


Fig. 7: Front (rackmount version) with the front access panel closed

- | | |
|------------------------------------------------|--------------------------------------------------|
| 1 19" bracket with handle | 3 Light diffusers for HDD and power LEDs |
| 2 Ventilation grille on the front access panel | 4 Front access panel with captive knurled screws |

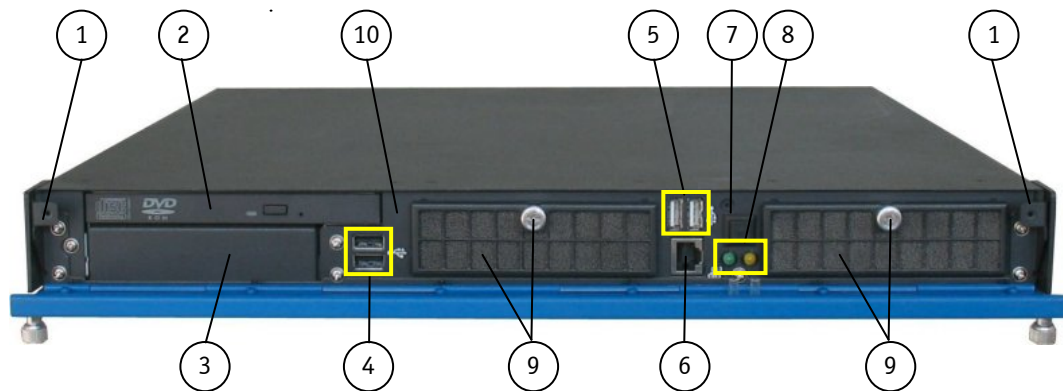
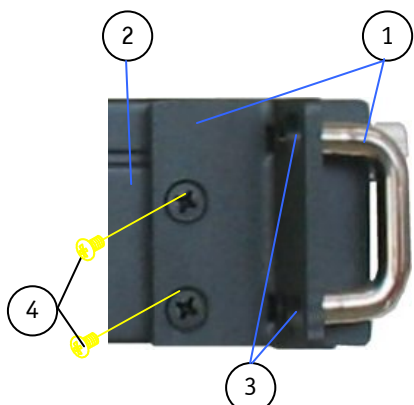


Fig. 8: Front side (desktop version) with opened front access panel

- | | |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 1 Stop bracket with tapped hole for fixing the front access panel | 6 1x LAN interface (not used) |
| 2 D1 : front-accessible 5.25" slim drive bay (shown with a slim DVD drive installed) | 7 Power button |
| 3 D2 : front-accessible 3.5" drive bay (with blanking cover) | 8 Indicators (power LED and hard disk LED) |
| 4 2x USB 2.0 (from the SBC) | 9 2x Filter mat holder with knurled screw (behind each filter mat holder and filter mat, is located the fan slide-in module) |
| 5 2x USB 2.0 (from the backplane) | 10 Chassis front panel |

You can easily convert your system to a desktop version. Unscrew the left and right hand 19" brackets from the device.

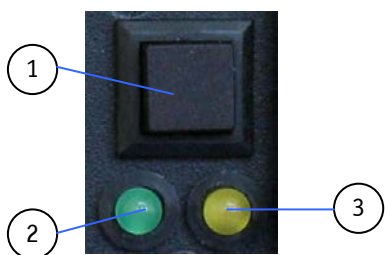


- 1 19" bracket with handle
- 2 KISS 1U platform chassis
- 3 Holes for rack mounting
- 4 Screws for attaching the 19" bracket

Fig. 9: Detail - 19" bracket with mounting screws

There are rubber feet (refer to the chapter 6 "Scope of Delivery" supplied, if you want to convert your KISS 1U to a desktop unit. To attach the rubber feet (included), please follow the instructions in the section 8.1 "Attaching the Rubber Feet".


7.1.1. Controls and Indicators



- 1 Power button
- 2 Power LED
- 3 Hard disk LED

Fig. 10: Power button on the front

The power button (Fig. 10, pos. 1) is located at the front side of the platform, behind the front access panel (Fig. 7, pos. 4) and allows to power ON/OFF the system. Please observe the settings option for "Restore on AC Power Loss" in the BIOS Setup. Setting options: Power On/Power Off/Last State.

Power LED (green)	This LED (Fig. 10, pos. 2) lights up green when the system is switched on using the power button. Please observe the Warning below! Prerequisite: The system must be connected to an appropriate power source (AC).
HDD LED (yellow)	This LED (Fig. 10, pos. 3) lights up yellow at HDD/SSD activity.
	Do not press the eject button, while the drive LED is lit or flashing.



Warning!

Turning the power off using the power button (refer to Fig. 10 pos. 1) does not disconnect the KISS 1U platform from the AC power source.

AC wide range PSU: Please observe that the ON/OFF switch (Fig. 15, pos. 8) of the AC wide range PSU (Fig. 17) does not disconnect the KISS 1U from the AC power source. Even you turn off the system using the power button Fig. 8, pos. 7), and the ON/OFF switch of the PSU, there is still a standby-voltage of 5 Vsb on the SBC (refer also to the hint in the subsection 7.2.2).

7.1.2. Ports on the Front Side

7.1.2.1. USB Ports

The KISS 1U system has four USB (2.0) interfaces (see Fig. 8, pos. 4 and pos. 5) on the front side. Various USB-compatible peripherals can be connected to these ports.



Fig. 11: USB interfaces on the front side (SBC card)



Fig. 12: USB interfaces on the front side (backplane)



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

7.1.2.2. LAN Interface

In the PCI-762 version of the KISS 1U system, the front LAN port is not used.

7.1.3. Filter Mat and Filter Mat Holder

The filter mat (Fig. 30) and the filter mat holders (Fig. 31, Fig. 8, pos. 9) are located behind the air grilles of the front access panel (Fig. 7, pos. 2 and pos. 4) and over the vent openings of the chassis front panel (Fig. 29, pos. 5). The filter mat holders are fastened to the chassis front panel (Fig. 8, pos. 10 and Fig. 28, pos. 1) by knurled screws Fig. 28, pos. 3). The filter mats are inserted into the filter mat holders. These filter mats protect your system against dust and dirt (refer to the subsection 10.2 "Cleaning the Filter Mat").

7.1.4. External accessible Drive Bays

Two front-accessible drive bays, D1 (1x 5.25" Slim) and D2 (1x 3.5"), are located on the front side, which are equipped according to the ordered system configuration.



Fig. 13: Configuration example with a DVD Slim drive (D1) and with no drive installed in the 3.5" drive bay (D2)



Fig. 14: Configuration example with a DVD Slim drive (D1) and a RAID1 slim drive for 2x 2.5" SATA HDD/SSD (D2)

7.1.5. System Fans installed in Fan Slide-in Modules

The four system fans are integrated in user-friendly, replaceable fan slide-in modules (refer to the subsection 7.5 "Fan Slide-in Modules"). The fan slide-in module (Fig. 8, pos. 9) can be replaced as described in the subsection 10.1 "Replacing the System Fans".

7.2. Rear Side

On the rear side, depending on the ordered KISS 1U platform configuration, are available the external interfaces of the integrated SBC card, the additional interfaces, the power supply unit and the air exhaust openings.



The order or the number of the KISS 1U platform interfaces can be different depending on the device configuration.

7.2.1. System Configurations with SBC Card

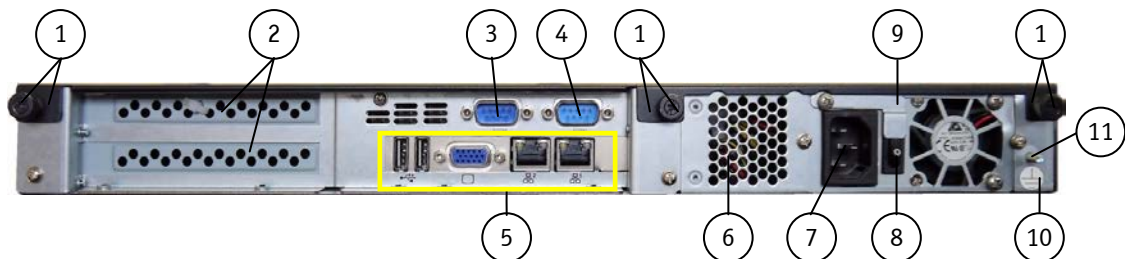


Fig. 15: Rear side of the KISS 1U with an SBC card (shown with a PCI-762 and an AC wide range PSU)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 1 Rear side of the cover with captive knurled screws | 6 Air exhaust openings |
| 2 Free card slots for :
1x PCIe x16 + 1x PCIe x4 or
1x PCI (32 Bit) + 1x PCIe x4 | 7 AC inlet connector |
| 3 COM1 (RS232) | 8 On/Off power switch of the PSU |
| 4 COM2 (RS232) | 9 Bracket that secures the On/Off switch
of the PSU in "On" position |
| 5 External interfaces of the SBC (PCI-762) card | 10 "Ground" label |
| | 11 Grounding stud |

7.2.1.1. External Ports of the SBC Cards



A detailed ports description can be found in the manual for the PCI-762 SBC board. You can download the corresponding manual from our web site www.kontron.com by selecting the product.

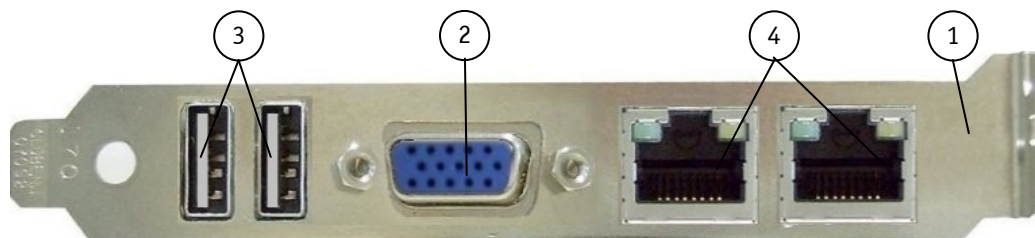


Fig. 16: External ports of PCI-762 SBC card

- | | |
|------------------------|-------------------------------------|
| 1 PCI-762 slot bracket | 3 2x USB (3.0) ports |
| 2 VGA port | 4 2x LAN ports with integrated LEDs |

7.2.1.2. Additional Ports

Depending on the ordered system configuration, your system can be equipped with on-board interfaces (e.g. serial interface) routed to the rear panel (refer to Fig. 15, pos 3 and pos. 4). These ports allow you to connect different peripherals.



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

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 1U Systems - Configuration Guides” on our web site.

7.2.2. Power Supply and ON/OFF Switch of the PSU

The power supply is located on the rear side of the KISS 1U platform.

The KISS 1U platform is equipped with an AC wide range power supply unit. The corresponding nominal voltage range can be found on the type label on the right side of the system.

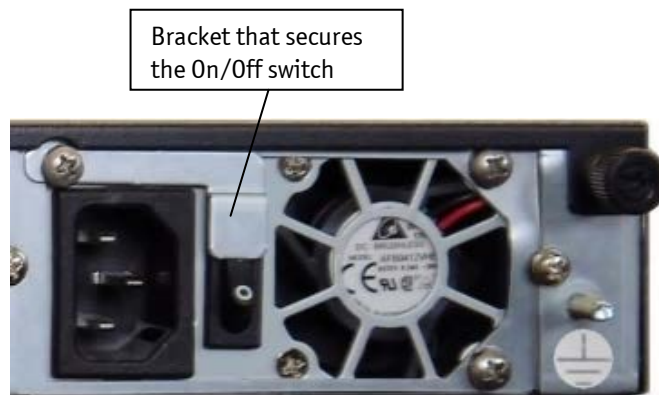


Fig. 17: Detail:
AC Wide Rang PSU



Please observe that the ON/OFF switch of the AC wide range PSU (Fig. 17) does not disconnect the KISS 1U platform from the main power source. Even you turn off the system using the power button (Fig. 8, pos. 7) or the ON/OFF switch of this PSU, there is still a standby-voltage of 5 Vsb on the SBC.



Hint for the ON/OFF switch of the AC Wide Range PSU (Fig. 17):

This switch is factory-set to “ON” and secured in this position by a bracket (Fig. 15, pos. 9). Don't switch OFF the PSU ON/OFF switch during operation.

7.2.3. Grounding Stud

The grounding stud (Fig. 15, pos. 10 and Fig. 18) is located on the rear side of the KISS 1U platform



The KISS 1U systems with grounding studs can be connected to a “common ground” connection point.

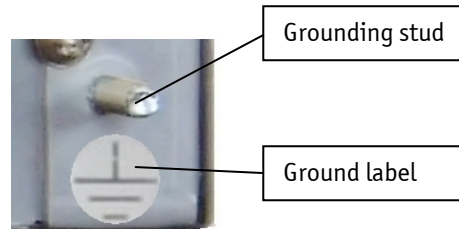


Fig. 18: Grounding stud

7.3. Side View

Five M4 metric tapped holes are available at the left and right side of the unit.

These can be used in order to attach slide rails (not included in the scope of delivery) to the KISS 1U (for system installation into a 19" industrial cabinet). Refer to the chapter 11 “Slide Rails (Option)”.

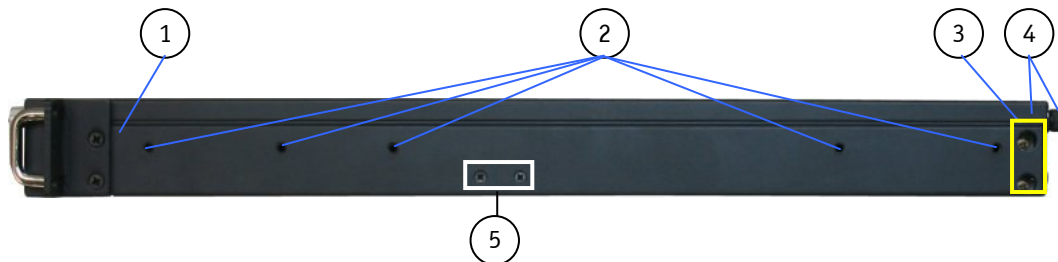


Fig. 19: Side view

- | | |
|---------------------------------------------|-----------------------------------------------------------------------------|
| 1 Right side view of the KISS 1U platform | 4 Cover with captive knurled screws (for fixing the device cover) |
| 2 5x tapped M4 metric holes (on both sides) | 5 Screws for fixing the card holder position (adjustable) (Fig. 20, pos. 7) |
| 3 Mounting screws of the add-on card slots | |

7.4. Installed SBC Card

Your KISS 1U system is equipped with an SBC card (**S**ingle **B**oard **C**omputer).



For KISS 1U versions and system configurations, please refer to the corresponding "KISS 1U Systems - Configuration Guides" on our website www.kontron.com. More information and technical data can be found in the corresponding CPU board manual (SBC). You can download the manual from our web site at www.kontron.com by selecting the product.

Please observe that the KISS 1U platform is designed to be operated in horizontal position only.

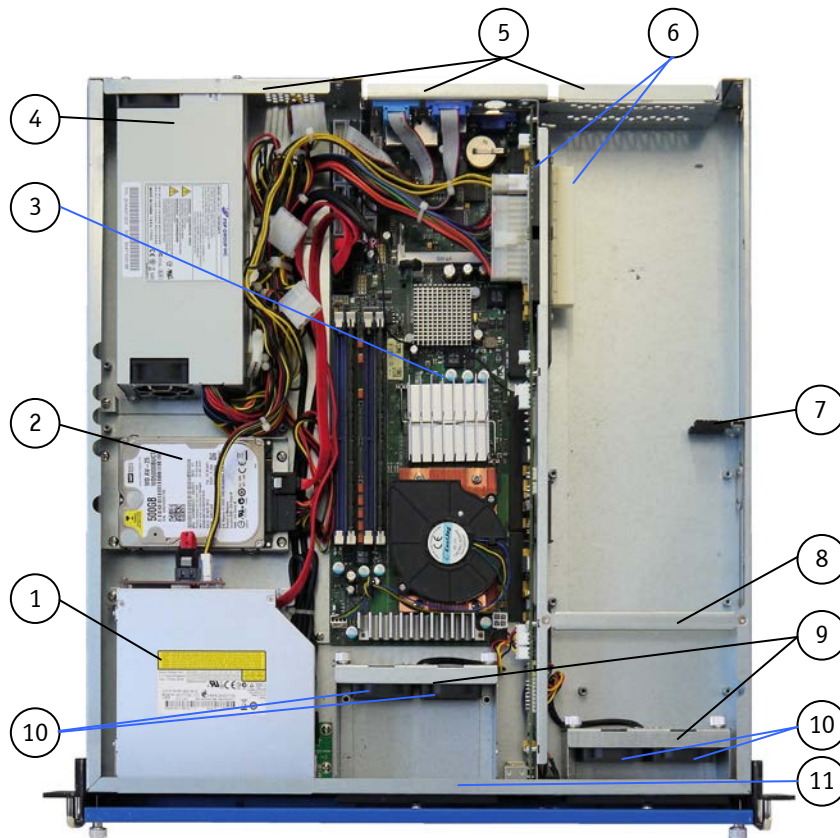


Fig. 20: Example of KISS 1U Configuration with SBC PCI 762(Single Board Computer)

- | | | | |
|---|--------------------------------------------------------------------------------------------------------------|----|------------------------------------------------------------------------|
| 1 | L1 and L2 drive (front-accessible); L1 and L2 are located one upon the other in one drive cage | 6 | Backplane with two slots (picture shows PCI slots) for expansion cards |
| 2 | L3 : internal 2.5" SATA HDD/SSD | 7 | Card holder (position adjustable, see Fig. 20, pos. 5) |
| 3 | PCI-762 SBC (PICMG 1.3) | 8 | Strut |
| 4 | Power supply | 9 | Fan slide-in modules |
| 5 | Fixing brackets for the cover on the rear side | 10 | Fan slide-in module with two fans |
| | | 11 | Fixing brackets for the cover on the front side |

7.4.1. Backplane, Riser Cards and Drive Bays

Depending on the KISS 1U hardware configuration ordered, you can expand your system with full size and/or half size additional cards and drives corresponding to the available drive bays.

System	Installed Board	Riser Card /Backplane	Available Slots for Exoansion Cards
KISS 1U	SBC + backplane	Riser card 1	1x PCI, 32 Bit @33 MHz 1x PCIe x16
		Riser card 2	1x PCIe x4 1x PCIe x16



Fig. 21: Grounding stud



Fig. 22: Grounding stud

Depending on the ordered system configuration, following drive bays will be available:

Drive Bays L1 to L3		KISS 1U
		Applicable Drives
L1	1x 5.25" Slim front-accessible	1x Slim-DVD/CD/etc.
L2	1x 3.5" front-accessible	1x KISS Stor 1 Slim [(Raid 1), with 2x 2.5" SATA HDD] or CF Reader
L3	1x 3.5" internal	2x 2.5" SATA HDD/SSD

7.5. Fan Slide-in Modules

The four front fans of the system are firmly mounted in user friendly, exchangeable fan slide-in modules (hot swap). Thus, a reliable air circulation for an optimal, active cooling of the system is provided. Each fan slide-in module is installed in a fan compartment on the front side of the system.

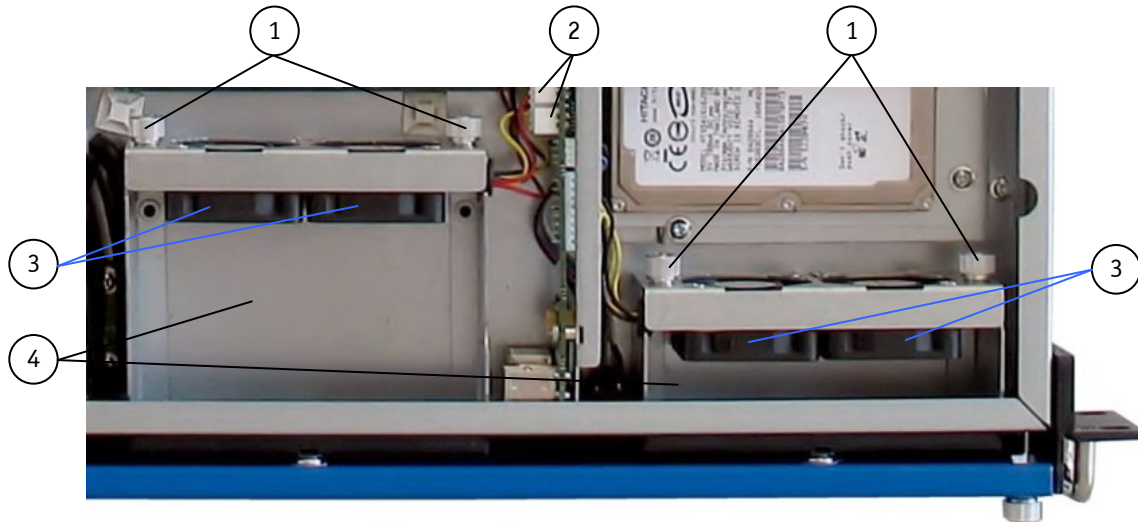


Fig. 23: Exchangeable fan slide-in modules with captive knurled screws

- | | |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 1 Captive knurled screws for fixing the fan slide-in modules in the corresponding fan compartment | 3 Two fans per fan slide-in module |
| 2 Cables and connectors for the voltage supply of the fans | 4 Fan compartment on the front side of the KISS 1U platform |



KISS 1U must only be operated with functioning system fans (fan slide-in modules)!

Refer to the subsection 10.1 "Replacing the System Fans".

Faulty components should only be replaced with original Kontron spare parts.

Fan slide-in module assembled, Part No.: 1017-2548

7.6. Cover

The cover will be fixed to the chassis using four fixing brackets and three captive knurled screws. The fixing brackets are located on the inside of the cover [three at the front edge (Fig. 24, pos. 4) and one at the rear edge (Fig. 24, pos. 3) of the cover].

When closing the cover, make sure that the fixing brackets (Fig. 24, pos. 2 and pos. 4) will be inserted properly into the corresponding retaining brackets of the cover (Fig. 20, pos. 5 and pos. 11).

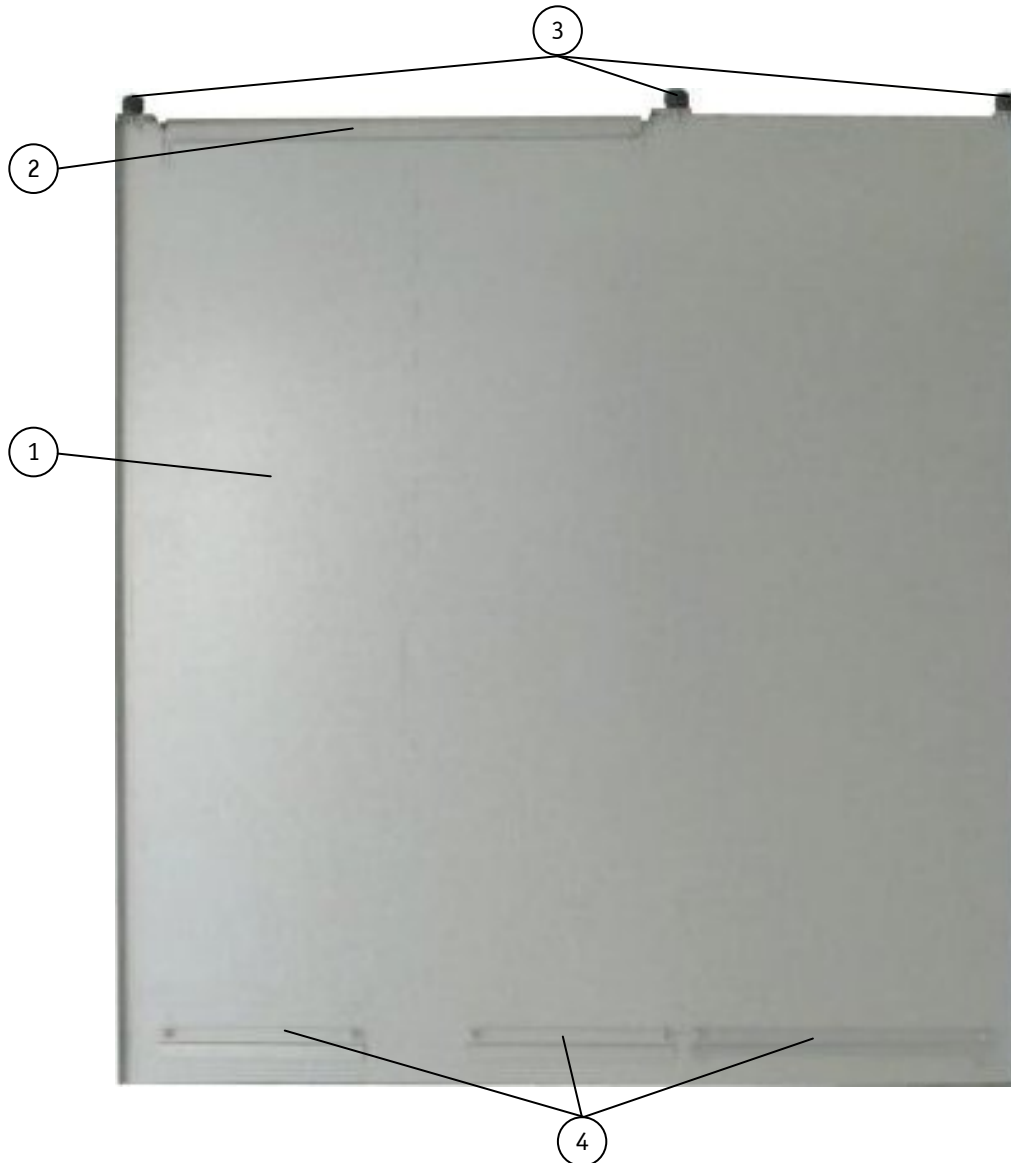


Fig. 24: Inside of the cover with fixing brackets

- | | | | |
|---|------------------------|---|--------------------------|
| 1 | Inside of the cover | 3 | Captive knurled screws |
| 2 | 1x rear fixing bracket | 4 | 3x front fixing brackets |

8. Installation and Removal

8.1. Attaching the Rubber Feet

If the system is to be used as a desktop version, the rubber feet supplied with the device can be attached to it.

To attach the rubber feet (included, refer to chapter 6 “Scope of Delivery”), proceed as follows:



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

Ensure that all components are securely installed and that the device cover has been screwed on tightly.

1. Turn the device upside down on a table or desk.
2. Remove the protective film from the rubber feet.
3. 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 (refer also to the subsection 7.4.1" Backplane, Riser Cards and Drive Bays".

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 instructions (refer to chapter 4 "General Safety Instruction for IT Equipment" or 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.



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 proceed as follows:

1. Switch your system off and disconnect it from the mains power. Disconnect any peripheral devices.
2. Loosen the three knurled screws, which secure the cover on the rear side of the system.



Fig. 25: Loosening the three knurled screws on the rear side of the KISS 1U system

3. Pull the cover back to remove the cover fixing brackets (Fig. 24, pos. 2 and pos. 4) from the retaining brackets (Fig. 20, pos. 5 and pos. 11) of the chassis.



Fig. 26: Sliding the cover back will pull out the cover fixing brackets from the retaining brackets of the chassis.

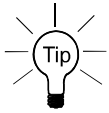
4. Lift the cover (on the rear edge) and remove it.



Fig. 27: Removing the cover

5. Remove or insert the expansion card into/from the PCI or PCIe slot on the backplane [depending on the system configuration ordered]] and secure the bracket of the expansion card or the slot bracket at the rear side of the chassis.
6. Close the device and secure the cover with the knurled head screws. When closing the cover, pay attention that the cover fixing brackets (Fig. 24, pos. 2 and pos. 4) slide into the corresponding retaining brackets (Fig. 20, pos. 5 and pos. 11) of the chassis.

8.3. Installation in a 19" Industrial Cabinet



Expansion card installation should be performed before installing the KISS 1U-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 1U versions and system configurations, please refer to the corresponding "KISS 1U Systems - Configuration Guides" on our website www.kontron.com.

More information and technical data can be found in the corresponding SBC card manual..

You can download the manual from our web site at www.kontron.com by selecting the product.



Caution:

Energy hazards > 240 VA are present inside the chassis!

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

In order to setting-up, installing / removing the KISS 1U system into/from a 19" industrial cabinet, please observe the instructions described in this user's guide.

Please consider the instructions described in the included chapter 4 "General Safety Instruction for IT Equipment".

Please consider the hints included in the subsection 7.2.2 "Power Supply and ON/OFF Switch of the PSU".

The KISS 1U should be installed in a 19" industrial cabinet using slide rails (PN: 1016-5807). Use for mounting the "Rack Slide Rails Kit for KISS 1U and 2U/4U" (PN: 1051-7200).

Ensure that air flow around the device is adequate when installing the KISS 1U.

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

Leave at least 5 cm (approx. 2") of free space to the 19" industrial cabinet in front and behind the KISS 1U, 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 Instruction for IT Equipment”.

When used as intended the KISS 1U 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 1U platform, loaded with hazardous energy.



The rated voltage 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 1U.



Hint for system configuration with AC Wide Range PSU!

Please observe that the ON/OFF switch (Fig. 15, pos. 8) of the AC wide range PSU (Fig. 17) does not disconnect the KISS 1U platform from the main power source.

Even you turn off the system using the power button (Fig. 8, pos. 7) or the ON/OFF switch (Fig. 15, pos. 8) of the PSU, there is still a standby-voltage of 5 V_{Sb} on the SBC. 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.



Please observe the settings option for “Restore on AC Power Loss” in the BIOS Setup.
Setting options: Power On/Power Off/Last State.

Hint for the ON/OFF switch of the AC wide range PSU (Fig. 17):

This switch is factory-set to “ON” and secured in this position by a bracket (Fig. 15, pos. 9).
Don't switch OFF the PSU ON/OFF switch (Fig. 17) during operation.

To connect the power cable, proceed as follows:

1. The grounding stud (Fig. 15, pos. 10) of the KISS 1U system can be connected to an appropriate “common ground” connection point; (refer to the subsection 7.2.3 “Grounding Stud”, Fig. 18).
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 1U 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 your system without a pre- installed operating system, you have to install the operating system and the corresponding drivers for the ordered computer configuration (optional hardware components).



The needed drivers for the hardware configuration of your system can be downloaded from the web page www.kontron.com by selecting the product name.

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

10. Maintenance and Prevention

Kontron Europe systems only require minimal maintenance and care to keep them operating correctly.

- ❑ Occasionally wipe the system with a soft dry cloth.
- ❑ Remove persistent dirt by use of a soft, slightly damp cloth (only use a mild detergent).
- ❑ Clean the air filter mat regularly (refer to the section 10.2 “Cleaning the Filter Mat”).

10.1. Replacing the System Fans



The operation of the KISS 1U 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: 1017-2548



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.

Important instructions!

The fan slide-in module can be replaced during operation. This should only be carried out by a qualified specialist, who is aware of the associated dangers.

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

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

1. Open the device, as described in the subsection 8.2.1 “Installing /Removing Expansion Cards” (steps 2-3). Pull the cover back as far as necessary to gain access to the fan slide-in module.
2. Unplug the corresponding power cable (Fig. 23, pos. 2) of the defective fan.
3. Loosen the captive knurled screws (Fig. 23, pos. 1) and pull the fan slide-in module upwards out of the fan compartment (Fig. 23, pos. 4).
4. Replace the fan slide-in module with a new functioning one and push the latter into the system fan compartment until it is attached to the connector.
5. Tighten the knurled screws up again.
6. Close the device and secure the cover with the knurled screws.



When closing the cover, pay attention that the cover fixing brackets (Fig. 24, pos. 2 and pos. 4) slide into the corresponding retaining brackets (Fig. 20, pos. 5) of the chassis.

10.2. Cleaning the Filter Mat

The filter mats (Fig. 28, pos. 2) are placed in the filter mat holders (Fig. 28, pos. 2) on the front of the system. The level of dirt on the filter mats depends on the level of dirt in the operating environment. If the filter mats become too heavily soiled, it can result in the device becoming unusually hot. This is why we recommend cleaning the filter mats as frequently as necessary, depending on the level of dirt.

The filter mats can be replaced during operation.

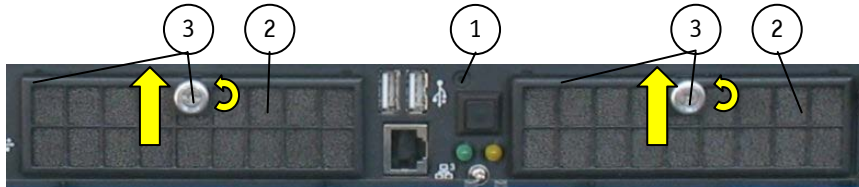


Fig. 28: Front side detail: Position of the filter mats



Fig. 29: Front side detail without filter mats and filter holders



Fig. 30: Filter mat

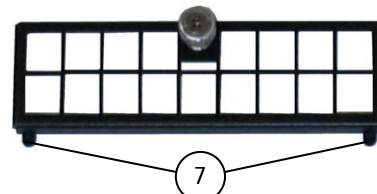


Fig. 31: Filter mat holder

Legend for Fig. 28, Fig. 29 and Fig. 31:

- | | |
|----------------------------------------|--------------------------------------------|
| 1 Chassis front side | 4 Tapped hole for knurled screw |
| 2 Filter mat | 5 Vent openings of the chassis front panel |
| 3 Filter pad holder with knurled screw | 6 Positioning holes for filter mat holder |
| | 7 Positioning tongues |

To replace the filter mat, proceed as follows:

1. Open the front access panel (Fig. 7, pos. 4) by loosen the knurled screws.
2. Loosen the knurled screw that secures the filter mat holder to the chassis.
3. Pull the filter mat holder in the direction of the arrow and lift it off.
4. Remove the soiled filter mat.
5. Clean the filter mat as follows:
 - Rinse in water (up to approximately 40°C, possibly with the addition of a standard gentle detergent).
 - It is also possible to beat the filter mat, to vacuum it or blow it with compressed air.
 - For dirt that contains grease/oil, the filter mat 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 mat, place it in the filter mat holder. Re-attach the filter mat holder to the front of the chassis.
7. Screw on the filter mat holder to the chassis using the fixing screw.



Faulty components must only be replaced with original spare parts from Kontron.

Filter mat: part number: 1017-2544.

10.3. Replacing the Lithium Battery

The SBC card for your system is equipped with a lithium battery. To replace the lithium battery, proceed as follows:

1. Open the device, as described in the subsection 8.2.1 "Installing /Removing Expansion Cards" chapter (steps 1-4).
2. If you have added expansion cards to your system, first remove the expansion cards and all 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 in the battery holder.
5. Pay attention to the polarity of the battery.
6. The lithium battery must only be replaced with the same type of battery or with a type of battery recommended by Kontron Europe.
7. Reinstall the removed expansion cards and re-attach the connecting cables.
8. Close the device, as described in the subsection 8.2.1 "Installing /Removing Expansion Cards" chapter (step 10).



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).

11. Slide Rails (Option)

Kontron provides slide rails for installing the KISS 1U in a 19" industrial cabinet. These slide rails can be ordered separately.



The KISS 1U 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).

Kontron stocks slide rails for installing the KISS 1U in an industrial cabinet. These rails can be ordered separately.

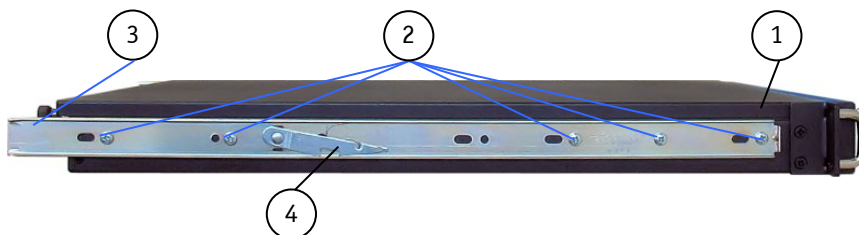


Fig. 32: Attaching the inner section of the slide rails



Fig. 33: KISS 1U platform with slide rails in pulled-out position



Fig. 34: KISS 1U platform with slide rails in pushed-in position

Legend for: Fig. 32, Fig. 33 and Fig. 34:

- | | |
|-------------------------------------------|-------------------------------------|
| 1 Side view of the KISS 1U | 4 Locking/unlocking lever |
| 2 5x M4x6 Philips screw
(on each side) | 5 Slide rail in pulled-out position |
| 3 Slide rail inner section | 6 Slide rail in pushed-in position |



Please ensure that only the screws provided (M4x6) are used to attach the slide rails to the KISS 1U.

12. Technical Data

KISS 1U-xxxxxxx-y	
Installed CPU Card	PCI-762 *Refer to „KISS 1U System - Configuration Guide“
Controls and Indicators (at the front side)	Power button Power LED (green) HDD LED (orange)
Operating Elements (at the rear side)	1x ON/OFF switch of the PSU: for system configuration with AC wide range PSU (it doesn't disconnect the unit from the mains)
Interfaces (at the front side)	4x USB (2.0)
Interfaces (at the rear side)	I/O of the installed CPU card (SBC, PCI-762) * refer to the manual of the installed CPU card (SBC)
Drive Bays	Up to three drive bays * optionally equipped (depending on the system configuration ordered (refer to „KISS 1U System - Configuration Guides“))
Free Expansion Slots	* optionally equipped (depending on the system configuration ordered (refer to „KISS 1U System - Configuration Guides“))
Lithium Batterie	*refer to the manual of the installed CPU card (SBC)
Equipped Power Supply Unit	●AC Wide Range 100-240V
Rated Voltage Range	See type label



KISS 1U = 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 1U System - Configuration Guides” and the manual of the installed CPU card can be downloaded from our web site at www.kontron.com by selecting the product name.

12.1. Electrical Specifications

The corresponding electrical specifications of your KISS 1U platform can be found on the type label.

12.2. Mechanical Specifications

Dimensions	KISS 1U (Standard Version)
Height	1U (44 mm) (1,73")
Width	Front: 19"; Chassis: 430 mm (16.9")
Depth	Front 14 mm (0.55"); Chassis: 469 mm (18.465")
Weight (without packaging)	Approx. 7.50 kg (16.535 lbs.)
Chassis	Chassis, black (RAL 7021) Front access panel: blue (RAL 5017)

12.3. Environmental Specifications

Thermal Management	4x system fan PSU fan CPU fan
Operating Temperature / Relative Humidity	0 ... +50 °C @5-95 % not condensing [at +55 °C (131 °F) at 10% POH per month] (32 .. 122 °F @5-95 % not condensing [+55 °C (131 °F) at 10% POH per month]
Storage / Transport Temperature / Relative Humidity	-20 ... +70 °C @ 5-95 % not condensing (-4 ... 158 °F @ 5-95 %) not condensing
Max. Operation Altitude	2,000 m (6,560 ft)
Max. Storage / Transport Altitude	10,000 m (32,810 ft)
Operating Shock	5 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, full load)

12.4. 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
RoHS II Directives	2011/65/EU

Elektrical Safety	Harmonized Standards
EUROPE	Information technology equipment - Safety - Part 1: General requirements EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011
U.S.A. / CANADA	to meet UL60950-1:2007 / CSA C22.2- No. 60950-1-7:2007
CB Report	IEC 60950-1:2005 (ed.2);Am1:2009

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.


13.1.1. 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)	

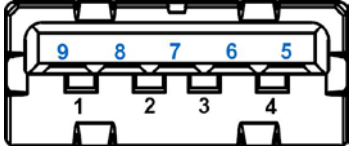
13.1.2. VGA Port

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 (2.0)

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

13.1.4. USB3.0 Port

Pin		Signal Name	9-pin USB Connector Type A Version 3.0/2.0
USB 2.0 contact pins	USB 3.0 contact pins		
1	VCC, fused (900 mA max.)	5	
2	Data-	6	
3	Data+	7	
4	GND	8	
		9	

About Kontron

Kontron, a global leader in embedded computing technology and trusted advisor in Internet of Things (IoT), works closely with its customers, allowing them to focus on their core competencies by offering a complete and integrated portfolio of hardware, software and services designed to help them make the most of their applications.

With a significant percentage of employees in research and development, Kontron creates many of the standards that drive the world's embedded computing platforms; bringing to life numerous technologies and applications that touch millions of lives. The result is an accelerated time-to-market, reduced total-cost-of-ownership, product longevity and the best possible overall application with leading-edge, highest reliability embedded technology.

Kontron is a listed company. Its shares are traded in the Prime Standard segment of the Frankfurt Stock Exchange and on other exchanges under the symbol "KBC". For more information, please visit: <http://www.kontron.com/>

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