» Kontron User's Guide «

# KISS 4U V2 EATX

## KISS 4U V2 KTC 5520

## KISS 4U V2 X9DR3

**User's Guide** (Version 1.02)
0-0096-6800

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# 1. Table of Contents

## 1.1. Table of Figures

# 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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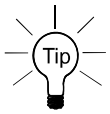
## 2.1. Symbols used in this Manual

| 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 4U V2 EATX platform!

This chapter contains instructions which must be observed when working with the KISS 4U V2 EATX 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 supplied document “General Safety Instructions for IT Equipment”, the hints in this manual or eventually the warning signs label on the device, Kontron Europe shall not be required to honor the warranty even during the warranty period and shall be exempted from the statutory accident liability obligation.

# 4. General Safety Instructions for IT Equipment

Please consider the instructions described in the supplied document “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 maintanance have to be carried-out by qualified personnel, aware of the associated dangers!**

**The installation instruction for the KISS 4U V2 EATX platform is the responsibility of the distributor.**

When used as intended the KISS 4U V2 EATX 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, is ensured that the user doesn’t have access to the internal parts of the KISS 4U V2 EATX platform, loaded with hazardous energy.

## 4.1. Operation of Laser Source Devices

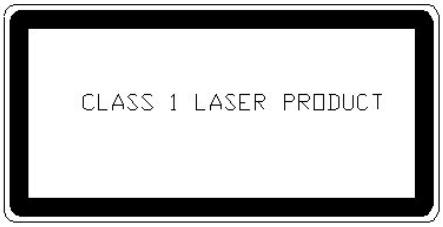



*Fig. 1: Laser radiation warning label*

The optional DVD drives contain light-emitting diodes (classified in accordance with IEC 825-1:1993: LASER CLASS 1) and therefore must not be opened.

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

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

## 4.2. Electrostatic Discharge (ESD)

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

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

### 4.2.1. Grounding Methods

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

1. Cover workstations with approved antistatic material. Always wear a wrist strap connected to workplace as well as properly grounded tools and equipment.
2. Use anti-static mats, heel straps, or air 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 server 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 4U V2 EATX platform (ordered system configuration)
- ❑ Two keys for the front access panel lock
- ❑ Rubber feet (self-adhesive)
- ❑ 1x AC power cable (for system configuration with AC PSU)
- ❑ 2x AC Power cable (for system configuration with AC redundant PSU)
- ❑ General Safety Instruction for IT Equipment

**Optional Parts**

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

## 6.1. Type Label and Product Identification

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

| System Type | Product Name | Product Identifikation |
|---|---|---|
| KISS 4U V2 EATX | KISS 4U V2 xxxxxxxx-y | KISS 4U V2 EATX = system type<br>The "**xxxxxxxxx**" group is replaced by up to a max. 8-digit combination of numbers, letter or space, and represents the installed CPU board<br>The "**y**" is replaced by a single letter (A through Z) representing the power supply installed into the system. |

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

**A:** corresponds to the systems with a 400W wide range AC power supply

**B:** corresponds to the systems with a 650W wide range AC power supply

**C:** corresponds to the systems with a 500W redundant wide range AC power supply

**D:** corresponds to the system configuration with a +24 VDC, 400W power supply

**E:** corresponds to the system configuration with a -48 VDC, 400W power supply

# 7. Product Description

The KISS 4U V2 EATX platform expands the Kontron KISS computer line. KISS 4U V2 EATX is a scalable 4U (19") platform, equipped with a server motherboard (KTC 5520 or X9DR3-F), supporting various system configurations (refer to "KISS 4U V2 EATX Systems - Configuration Guides" on our website). The flexible customer-specific hardware system configuration and the robust construction with excellent mechanical stability of the KISS 4U V2 EATX platform offer the superior qualities of a computer designed for operation in harsh industrial environment.

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

**Versions of the KISS 4U V2 EATX platform:**


*Fig. 2: Rackmount version with closed access panel*


*Fig. 3: Tower version with closed access panel*


*Fig. 4: Desktop version with closed access panel*

*Fig. 5: Rackmount version with opened access panel (shown as KISS 4U V2 KTC5520)*

*Fig. 6: Tower version with opened access panel (shown as KISS 4U V2 KTC5520)*

*Fig. 7: Desktop version with opened access panel (shown as KISS 4U V2 KTC5520)*

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

- **L1** and **L2**: two 5.25" front accessible drive bays
- **L3**: one 5.25" front accessible Slim drive bay
- **L4**: one 2.5" or 3.5" internal drive bay for HDD.

The operating elements and LED indicators are located at the front side of the KISS 4U V2 EATX platform (refer to the subsection 7.1.2 and 7.1.3).

Two USB ports are available on the front side of the system.

Three 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 may be replaced during operation.

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

The system can be ordered with frontal IP52 Protection Class.

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

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

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

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

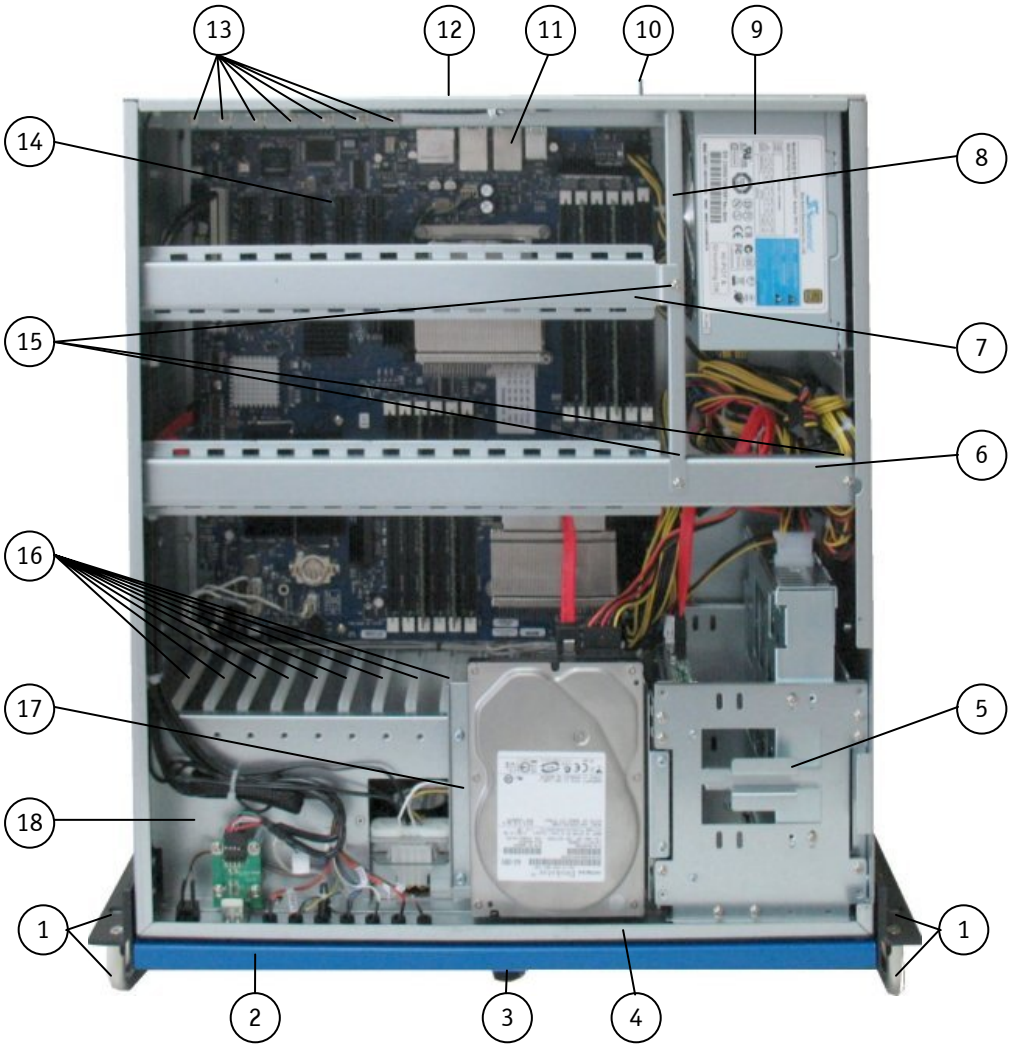



*Fig. 8: KISS 4U V2 EATX, opened, rackmount version*

1 19" rack mountable bracket with handle (not available for tower and desktop version)

2 Front access panel

3 Locking mechanism

4 Cover retaining plate on the front side

5 **L1**, **L2** and **L3**: drives bays (stacked one above the other into a drive cage)

6 Card hold down bracket (for long expansion cards)

7 Card hold down bracket (for short expansion cards)

8 Retaining bracket for the card hold down bracket

9 AC power supply unit

10 Grounding stud

11 External interfaces of the installed motherboard

12 Exhaust openings on the rear side

13 Slots for expansion cards

14 Server motherboard ( shown as KTC5520/EATX)

15 Fastening screws for the card hold down bracket (internal accessible)

16 Card guides (for full-length cards)

17 Drive bracket for an internal 2.5" or 3.5" drive bay **(L4)**

18 Fan compartment

## 7.1. Front Side

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

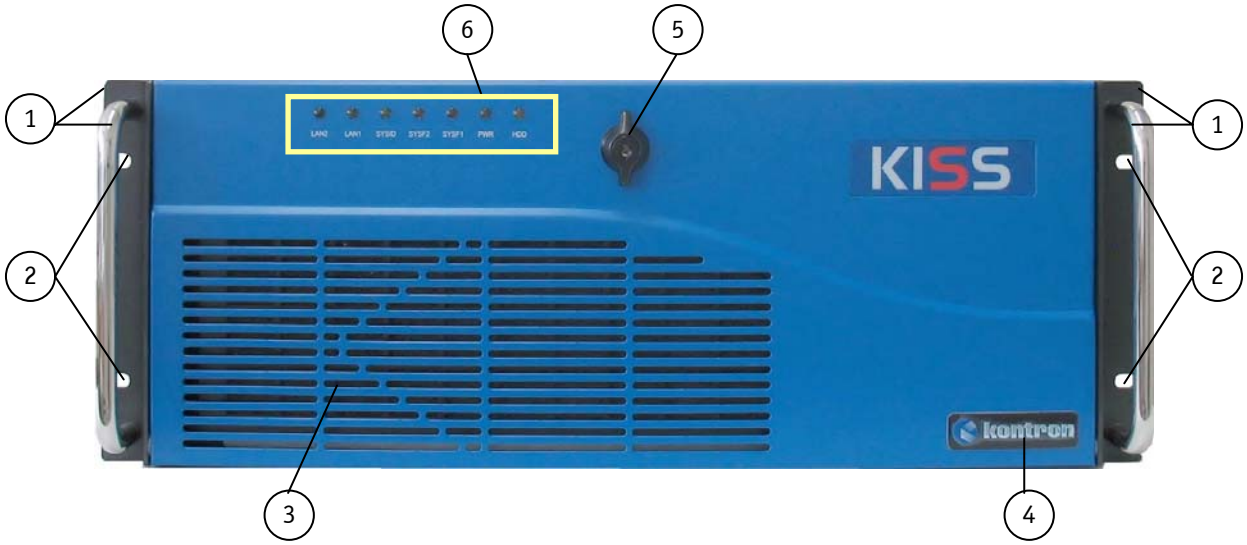



*Fig. 9: Front side (rackmount version) with closed front access panel*

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

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

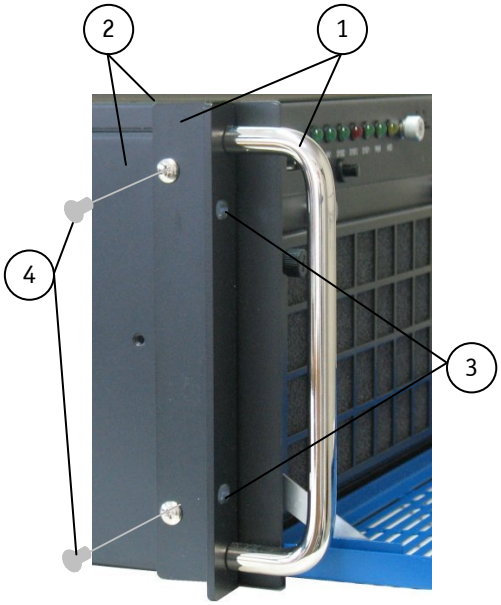



*Fig. 10: 19" handle bracket with fastening screws*

| | |
|---|---|
| 1 | 19" handle bracket |
| 2 | Chassis and cover of the KISS 4U KTC5520 platform |
| 3 | Holes for mounting in 19" racks |
| 4 | Fastening screws of the 19" bracket |

The desktop and tower version are delivered with rubber feet.

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

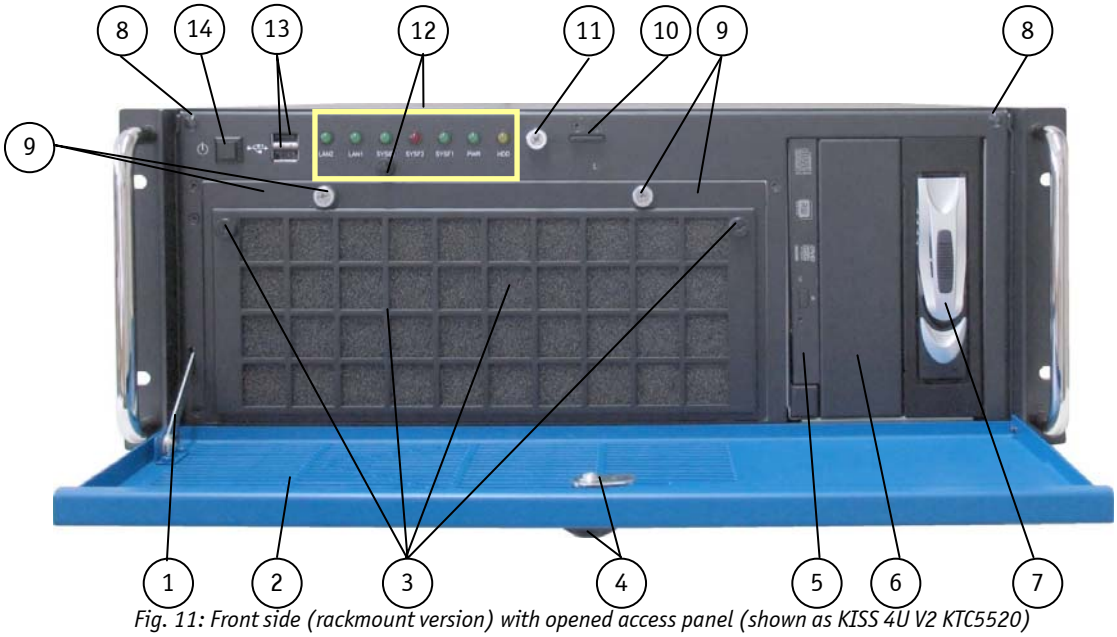



*Fig. 11: Front side (rackmount version) with opened access panel (shown as KISS 4U V2 KTC5520)*

1 Access panel holder
2 Access panel
3 Filter mat and filter mat holder with knurled screws
4 Securing lock mechanism (two keys are provided)
5 **L3:** front accessible 5.25" slim drive bay (shown with a slim drive installed)
6 **L2:** front accessible 5.25" drive bay (shown with covering plate)
7 **L1:** front accessible 5.25" drive bay (shown with a disk subsystem with a removable HDD drive installed)
8 Buffer for the access panel
9 Fan slide-in module with knurled screws
10 Slot for the locking mechanism
11 Cover fastening screw on the front side
12 Indicators (LED row) and SYSID button
13 2x USB 2.0
14 Power button

### 7.1.1. USB Interfaces

The KISS 4U V2 EATX platform is equipped with two USB interfaces on the front side (see Fig. 11, pos. 13 and Fig. 12, pos. 2). You can connect different USB devices to these two USB 2.0 interface connectors.


1 Power button
2 USB (2.0) ports

*Fig. 12: Power button and USB ports on the front side*

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

### 7.1.2. Power Button

The power button (see Fig. 11, pos. 14 and Fig. 12, pos. 1) is located on the front side of the system, behind the front access panel. Press this button to turn the system on or off.

Please also observe the setting options for "Restore on AC Power Loss" in the BIOS-Setup.

**For system configurations with 24VDC/-48VDC PSU:**
When the KISS 4U V2 EATX system is powered on with the power button (Fig. 11, pos. 14) the green Power-ON- LED (Fig. 25 and Fig. 26) of the DC PSU (on the rear of the system) lights up.

Even when the system is turned off via the power button (Fig. 11, pos. 14) there is still a standby-voltage of 5 VSb on the server board.

**Warning!**
For system configuration with:
**AC wide range PSU:** The unit is completely disconnected from the mains, only when the ON/OFF switch of the PSU is set to OFF or when the power cord is disconnected either from the mains or the unit. Therefore, the power cord and its connectors must always remain easily accessible.
**AC wide range redundant PSU:** Please observe that the ON/OFF switch of this PSU does not disconnect the system from the AC power source. The unit is completely disconnected from the mains, only when the power cord is disconnected either from the mains or the unit. Therefore, the power cord and its connectors must always remain easily accessible.
**+24VDC-bzw. -48VDC-Netzteil:** The unit is only completely disconnected from the mains, when the power wires are disconnected either from the mains or the unit. Therefore, the power wires (not provided) and theirs connectors must always remain easily accessible.

### 7.1.3. LED Indicators with and without SYSID Button

As LED indicators at the font side there are a "Power LED" and a "HDD LED" and five LEDs (for systems with KTC5520) / four LEDs (for systems with X9DR3-F), for system monitoring (Fig. 13. and Fig. 14).

The SYSID button (only available on system configuration with KTC 5520 motherboard) is located on the front side, behind the front access panel of the KISS 4U V2 KTC5520 platform (Fig. 13).


*Fig. 13: LED indicators and SYSID button on the front side of the KISS 4U V2 KTC 5520 platform*


*Fig. 14: LED indicators without SYSID LED and SYSID button on the front side of the KISS 4U V2 X9DR3F platform*

#### 7.1.3.1. Power- and HDD-LED

The power LED marked "PWR" and the hard disk LED marked "HDD" (Fig. 15) of the KISS 4U V2 EATX platform are located on the front side, behind the front access door.


1 Power LED

2 HDD activity LED

*Fig. 15: Power and HDD LED on the front side*

| | |
|---|---|
| **Power LED (green)** | This LED (Fig. 15, pos. 1, Fig. 13 and Fig. 14) lights up green when the system is turned on via the power switch of the PSU and the power button.<br>**Prerequisite:**<br>The system has to be connected to an appropriate AC/DC main power source. |
| | Please observe the settings option for "Restore on AC Power Loss" in the BIOS Setup. |
| **HDD LED (yellow)** | This LED (Fig. 15, pos. 2, Fig. 13 and Fig. 14) lights up during hard disk activity. |

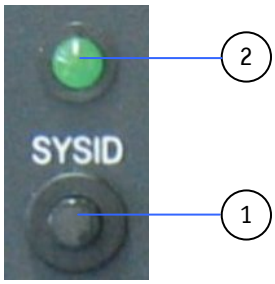
#### 7.1.3.2. Gigabit Ethernet (GbE LAN) LEDs

These two LEDs on the front side (see Fig. 13, Fig. 14 and Fig. 16) and marked "LAN1" and "LAN2", lights up/flashing, when Ethernet Link/Activity is established/detected.


*Fig. 16: LAN2 and LAN1 LED on the front side*

#### 7.1.3.3. SYSID LED and Button (available in KISS 4U V2 KTC5520 Platform only)

This SYSID button (see Fig. 13, and Fig. 17, pos. 1) allows you to power on the SYSID LED (Fig. 17, pos. 2), in order to mark the system for an intended maintenance/retrofitting. The SYSID LED may be powered off via this SYSID button.




1 SYSID button

2 SYSID LED

*Fig. 17: SYSID LED and SYSID button on the front side*

The KISS 4U V2 X9DR3F platform is not equipped with the SYSID LED and SYSID button (refer to Fig. 14). Two covering caps are inserted into the mounting holes for SYSID LED and SYSID button.

#### 7.1.3.4. SYSF1 and SYSF2 LED of the KISS 4U V2 KTC5520 Platform

These two LEDs at the front side (see Fig. 13 and Fig. 18) and marked "SYSF1" and "SYSF2", indicate the system status and signalize if a system failure occurs (refer to the table below).


*Fig. 18: SYSF2 and SYSF1 LED*

| LEDs of the KISS 4U V2 KTC5520-Platform | Behavior of the LEDs during: Normal operation (S0), Suspend to RAM (S3; standby mode), Soft Off (S5) | | |
|---|---|---|---|
| | if system is OK | If non critical failure occurs | If critical failure occurs |
| SYSF1 (green) | ON (continuous green) | OFF | OFF |
| SYSF2 (red) | OFF | ON (blinking red) | ON (continuous red) |

#### 7.1.3.5. SYSF1 and SYSF2 LED of the KISS 4U V2 X9DR3F Platform

These two red LEDs at the front side (see Fig. 14 and Fig. 19) and marked "SYSF1" and "SYSF2", indicate the system status and signalize if a system failure occurs (refer to the table below).


*Fig. 19: SYSF2- und SYSF1-LED (KISS 4U V2 X9DR3F)*

| LEDs of the KISS 4U V2 X9DR3F-Platform | Behavior of the LEDs | | | |
|---|---|---|---|---|
| | if System is OK | Overheating | Fan Fail | PSU-Failure |
| SYSF1 (red) | OFF | OFF | OFF | ON (continuous red) |
| SYSF2 (red) | OFF | ON (continuous red) | ON (flashing red) | OFF |

### 7.1.4. Front Access Panel

The securing lock mechanism (Fig. 9, pos. 5) located at the access panel allows you, if required, to protect your system from unauthorized use. When the access panel is locked, the cover of the KISS 4U V2 EATX system can not be removed, and the drives, the filter mat holder, the power and SYSID button (SSSID button is available on the KI available) are not accessible.

Via the light diffusers (Fig. 9, pos. 6) it is possible to observe the LED indicators states, even if the access panel is closed/locked.

Please observe that the KISS 4U V2 X9DR3F platform is not equipped with the SYSID LED and the SYSID button (refer to Fig. 14).

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

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

### 7.1.5. Cover Fastening Screw on the Front Side

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

Unscrew the following knurled screws in order to remove the cover of the KISS 4U V2 EATX platform:

- ❑ the cover fastening screw (Fig. 11, pos. 11 and Fig. 33) on the front side
- ❑ the knurled screws (Fig. 20, Fig. 21, pos. 8 and Fig. 34) on the rear side

The chassis of the KISS 4U V2 EATX platform is properly closed, if the cover has to be attached and the above mentioned screws are tightened.

### 7.1.6. Fan Slide-in Module

The three system fans are integrated in a user-friendly, replaceable fan slide-in module (hot-swap) (refer to the section 8.3 “Fan Slide-in Module and Temperature Sensors”). The fan slide-in module (Fig. 11, pos. 9) can be replaced during operation (refer to the section 10.2 “Replacing the System Fans”).

### 7.1.7. Filter Mat and Filter Mat Holder

The filter mat and the filter mat holder (Fig. 11, pos. 3) are located behind the air grilles of the front access panel (Fig. 9, pos. 3). The filter mat holder is mounted onto the fan slide-in module (Fig. 11, pos. 9) via the two knurled screws (Fig. 43, pos. 5) and the two positioning latches (Fig. 43, pos. 6). The filter mat (Fig. 45) is inserted into the filter mat holder (see Fig. 44). This filter mat protects your system against dust and dirt (refer to section 10.1 “Cleaning the Filter Mat”).

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

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

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

## 7.2. Drive Bays

Depending on the ordered system configuration, the system can be equipped with up to three drives (refer to Fig. 11, pos. 5, 6 and 7) at the front side and one internal drive (refer to Fig. 8, pos. 17):

| Drive Bay | Description |
|---|---|
| **L1** | Externally accessible 5.25" drive bay [shown with a disk subsystem (with 1x removable HDD)] |
| **L2** | Externally accessible 5.25" drive bay (shown with covering plate) |
| **L3** | Externally accessible 5.25" slim-line drive bay (shown with a slim-line DVD drive) |
| **L4** | One internal drive holder for a 2.5" or a 3.5" SATA HDD |

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

For customer-specific versions and system configurations, please refer to the corresponding "KISS 4U V2 EATX Systems - Configuration Guides" for KISS 4U V2 EATX on our website www.kontron.com.

## 7.3. Rear Side

On the rear side, depending on the ordered KISS 4U V2 EATX platform configuration, there are available the external interfaces of the integrated server board, any additional interfaces, the power supply unit and the air exhaust openings.

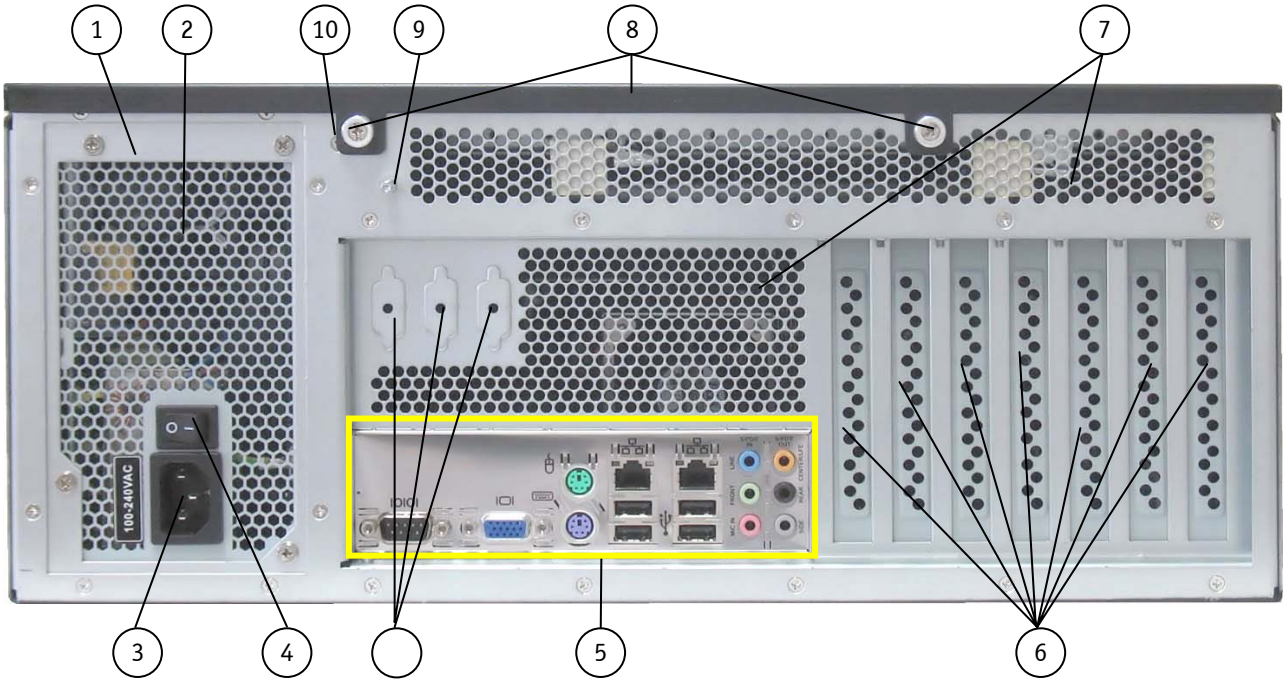



*Fig. 20: Rear side of the KISS 4U V2 EATX platform (shown with KTC 5520 motherboard and AC wide range PSU)*

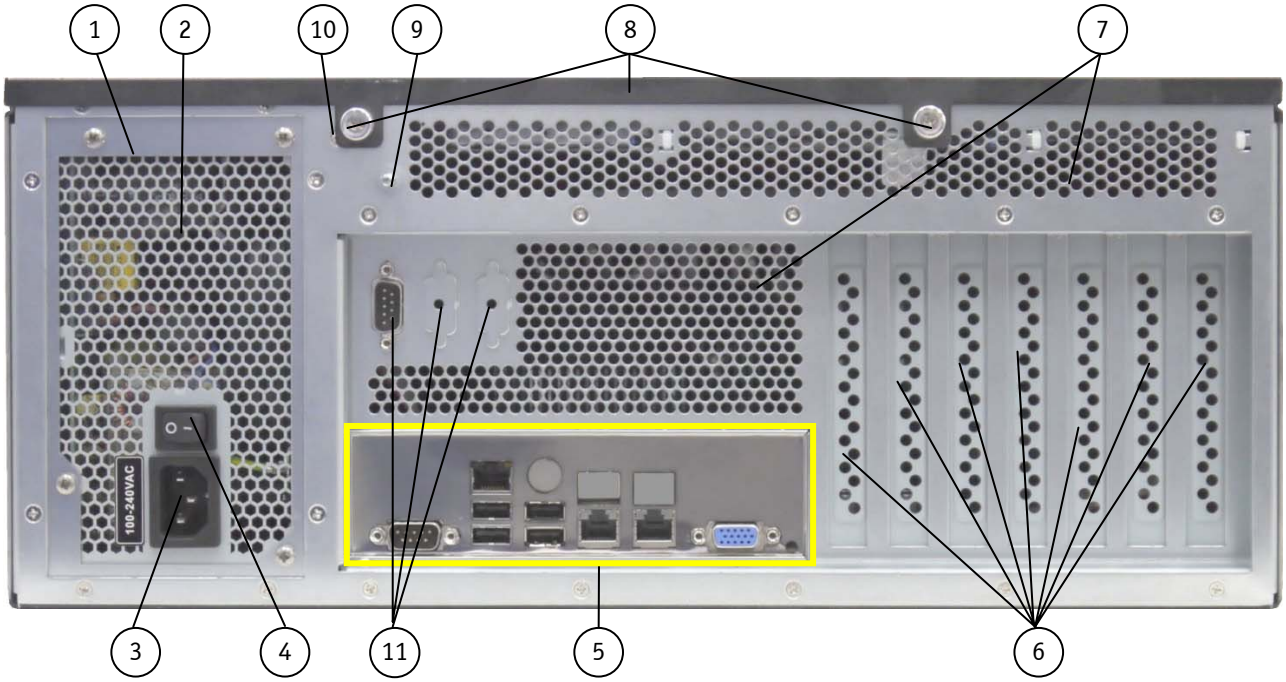



*Fig. 21: Rear side of the KISS 4U V2 EATX platform (shown with X9DR3-F motherboard and AC wide range PSU)*

**Legend for** Fig. 20 **and** Fig. 21:

1 AC power supply unit (PSU)

2 Power supply fan

3 AC input connector

4 "On/Off" switch of the power supply unit

5 Interfaces of the server board (depending on the system configuration)

6 Free expansion card slots (depending on the system configuration ordered)

7 Air exhaust openings

8 Rear side of the cover with captive knurled screws

9 Grounding stud (without PE sign)

10 Externally accessible screw (countersunk screw M3x6) for the fastening of the card retaining bracket

11 Cut-outs for optional (customer-specific) interfaces routed to the rear panel (9-pin D-SUB type)

### 7.3.1. Interfaces on the Rear Side

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

Information and technical data can be found in the manual of the installed KTC5520/EATX or X9DR3F Server Board. You can download the relevant motherboard manual for your system from our web site at www.kontron.com by selecting the product name. See also "KISS 4U V2 EATX Systems - Configuration Guides" on our website.

#### 7.3.1.1. Interfaces routed to the Rear Panel

On-board interfaces can be routed to the rear panel (refer to Fig. 20 and Fig. 21, pos. 11).

A detailed description of the interfaces can be found in the manual of the installed server board (KTC5520/EATX or X9DR3-F).

You can download the relevant manual for your system from our web site at www.kontron.com by selecting the product. See also "KISS 4U V2 EATX Systems - Configuration Guides" on our website.

### 7.3.2. Power Supply

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

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


*Fig. 22: Detail:*
*400W AC wide range PSU*

*Fig. 23: Detail:*
*650W AC wide range PSU*

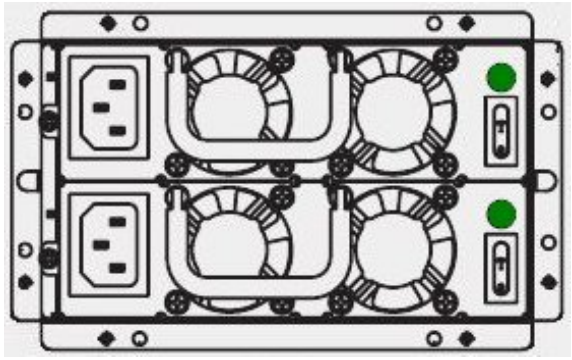


*Fig. 24: Detail:*
*500W AC redundant wide range PSU*

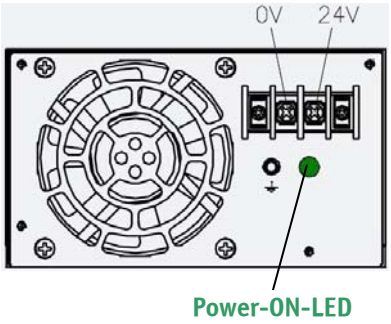



*Fig. 25: Detail: +24VDC PSU (400W)*

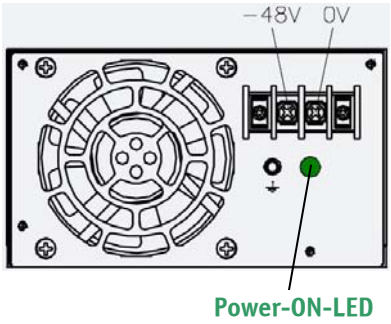



*Fig. 26: Detail: -48VDC PSU (400W)*

**For system configuration with 24VDC/-48VDC PSU:**
The green Power-ON LED (Fig. 25 and Fig. 26) of the 24VDC / -48VDCPSU (on rear side of the system) lights up, only when the KISS 4U V2 EATX systems is powered on with the power button (Fig. 11, pos. 14).

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

Please observe that the ON/OFF switch of the AC wide range redundant PSU (Fig. 24) does not disconnect the KISS 4U V2 platform from the main power source. Even you turn off the system using the power button (Fig. 11, pos. 14) or the ON/OFF switch of this PSU, there is still a standby-voltage of 5 VSb on the motherboard.

### 7.3.3. Grounding Stud

The grounding stud is located on the rear side of the KISS 4U V2 EATX platform (see Fig. 20 and Fig. 21, pos. 9).

The KISS 4U V2 EATX 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 before connecting to the main power supply (refer to step1 of the section 9.1 “AC Power Connection”.

*Fig. 27: Grounding stud marked with PE symbol*

*Fig. 28: Unmarked grounding stud*

## 7.4. Side View

Five M4 metric tapped holes are available at the left and right side of the unit (Fig. 29, pos. 2). These can be used in order to attach slide rails [not supplied; see chapter 11 "Slide Rails (Option)"] to the KISS 4U V2 EATX platform for system installation into a 19" industrial cabinet.

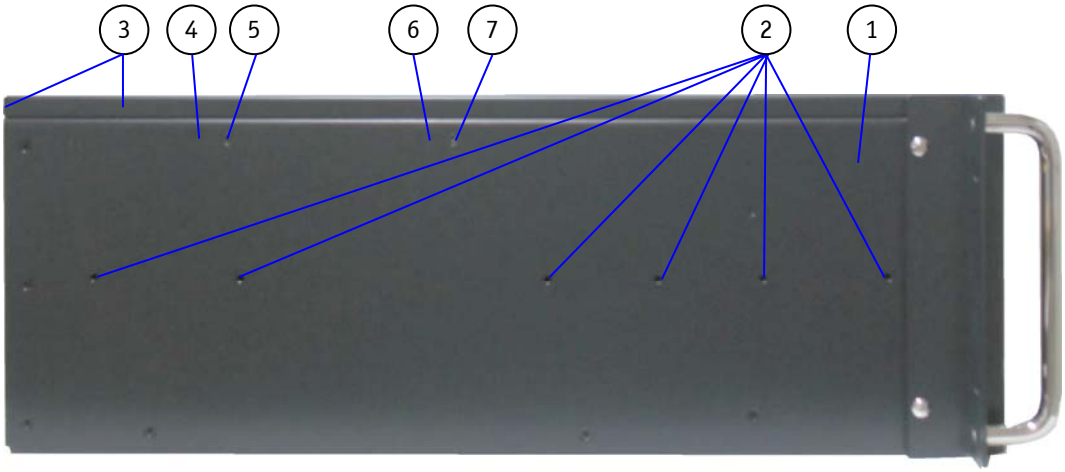



*Fig. 29: KISS 4U V2 EATX platform – side view*

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

# 8. Assembly, Disassembly

## 8.1. Attaching the Rubber Feet

If the system is used as desktop/tower device, the rubber feet (included) can be attached to the system.

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

1. Turn your system off and disconnect it from the main power supply.
2. Make sure that all cards are secured into unit and that the system cover is installed and secured.
3. Turn the system upside down for desktop version and lie it down sideways for the tower version.
4. Remove the protective film from the self adhesive rubber feet.
5. Attach the self adhesive rubber feet to the corresponding side of the chassis.

If you operate the KISS 4U V2 EATX platform in vertical position, please observe that the system fans (slide-in module) must be to the lower front and the drives to the upper front side of the system (see Fig. 6).

## 8.2. Cover

The cover will be fixed to the chassis using two fixing brackets at the front side of the cover (Fig. 30, pos.3 and pos. 4), two fixing brackets with captive knurled screws at the rear side of the cover (Fig. 30, pos.6) and the cover fastening screw (Fig. 11, pos. 11) at the front side of the KISS 4U V2 EATX platform.
When inserting the cover, make sure that the fixing brackets (Fig. 30, pos. 3 and pos. 4) are inserted properly into the corresponding retaining bracket of the chassis (Fig. 8, pos. 4). The centering bracket (Fig. 30, pos. 3) and the front cover fastening screw (Fig. 11, pos. 11) secure the cover on the front side.

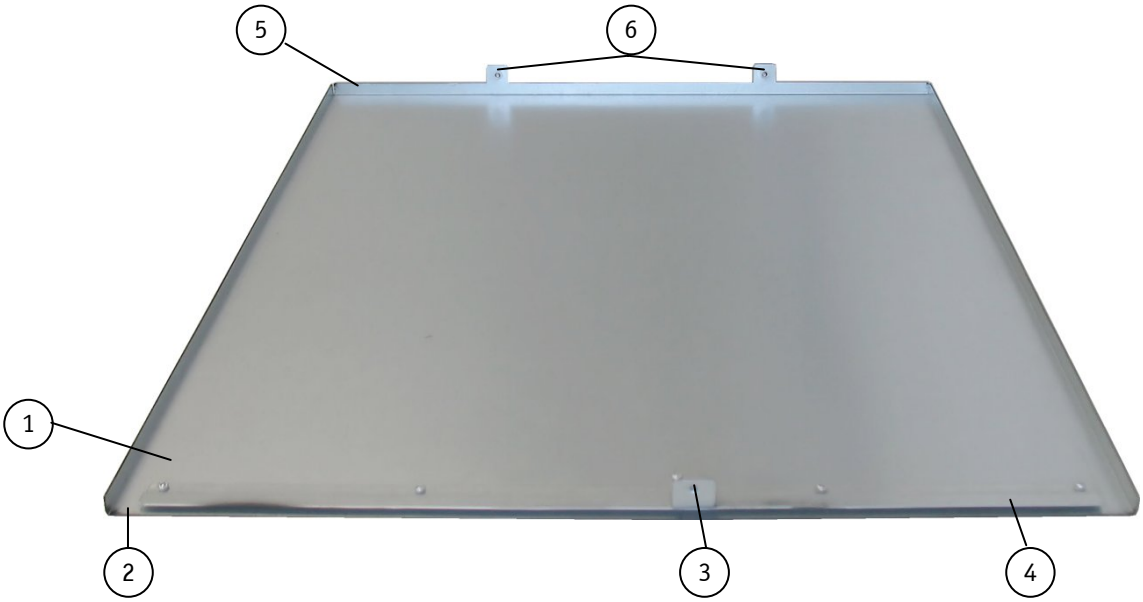



*Fig. 30: Inside of the cover with fixing brackets*

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

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

The three system fans (Fig. 32, pos. 3) are integrated in a user-friendly, replaceable fan slide-in module (hot-swap) (Fig. 11, pos. 9 and Fig. 49, pos. 1). The fan slide-in module is mounted in a fan compartment on the front side of the system (Fig. 50, pos. 5).

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

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

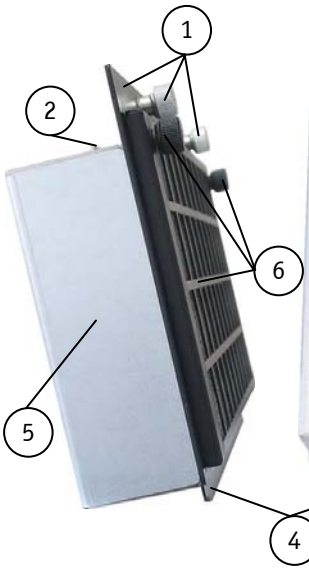



*Fig. 31: Side view of the fan slide-in module*

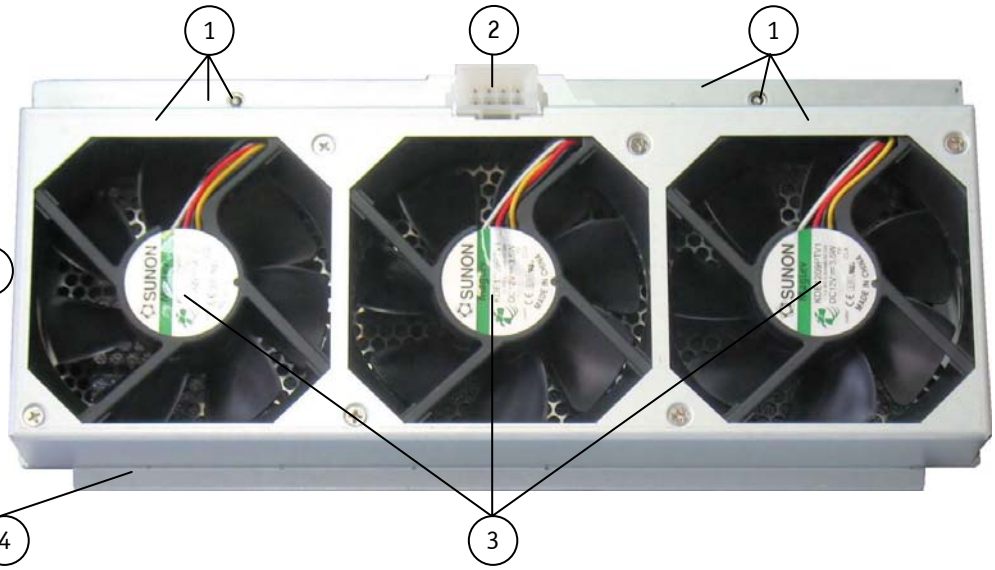



*Fig. 32: Side with connector of the fan slide-in module*

**Legend for** Fig. 31 **and** Fig. 32:

| | | | |
|---|---|---|---|
| 1 | Fan slide-in module with two knurled screws | 4 | Bracket of the fan slide-in module |
| 2 | Connector for fan control | 5 | Case of the fan slide-in module |
| 3 | 3x fans (temperature controlled independently from each other) | 6 | Mounted filter mat holder with knurled screws |

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

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

- ❑ "fan slide-in module", part number: 1036-5056

**Important Instructions!**

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

## 8.4. 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 or replacing the fan slide-in module.

### 8.4.1. Installing/Removing the 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 included in chapter 4 and the provided document "General Safety Instruction for IT Equipment".

Activities such as working inside the system or handling the expansion cards have to be carried-out by qualified personnel, aware of the associated dangers.

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 maintanance have to be carried-out by qualified personnel aware of the associated dangers!**

Please follow the safety instructions for components that are sensitive to electrostatic discharge (ESD). Failure to observe this warning notice can result in damage to the device.

Please consult the documentation provided by the manufacturer of the expansion card for instructions before attempting to install/remove an expansion card into/from your system.

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

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

☞ In order to remove the cover, unscrew the following knurled screws:

- ❑ the cover fastening screw (Fig. 11, pos. 11 and Fig. 33) on the front side
- ❑ the knurled screws (Fig. 20, Fig. 21, pos. 8 and Fig. 34)on the rear side

**2.** Loosen the knurled screws (the cover fastening screw on the front side and the two knurled screws on the rear side) which secure the cover (see Fig. 33 and Fig. 34) to the chassis.

*Fig. 33: Loosening the knurled cover fastening screw on the front side (shown with KTC 5520 motherboard)*

*Fig. 34: Loosening the knurled screw on the rear side (shown with KTC 5520 motherboard)*

3. Pull the cover out a little bit (Fig. 35) to release the cover centering and fixing brackets (Fig. 30, pos.3 and pos. 4) from the retaining brackets of the chassis (see Fig. 8, pos. 4).

*Fig. 35: Sliding back the cover will pull out the cover centering and fixing brackets from the retaining brackets of the chassis.*

4. Lift the cover up (on the rear edge) and remove it (Fig. 36).

*Fig. 36: Removing the cover*

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


*Fig. 37:Card hold down bracket for long expansion cards*

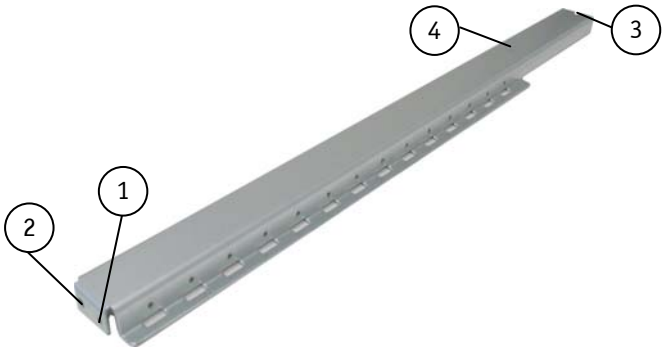



*Fig. 38: Card hold down bracket for long expansion cards*

1 Threaded holes for the externally accessible fastening screws (Fig. 29, pos. 5 and pos. 7)

2 Holes for the internal bolts (Fig. 29, pos. 4 and pos. 6)

3 Notches for the fastening screws that secure the card hold down brackets to the internal brackets

4 Threaded hole for attaching the retaining bracket

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

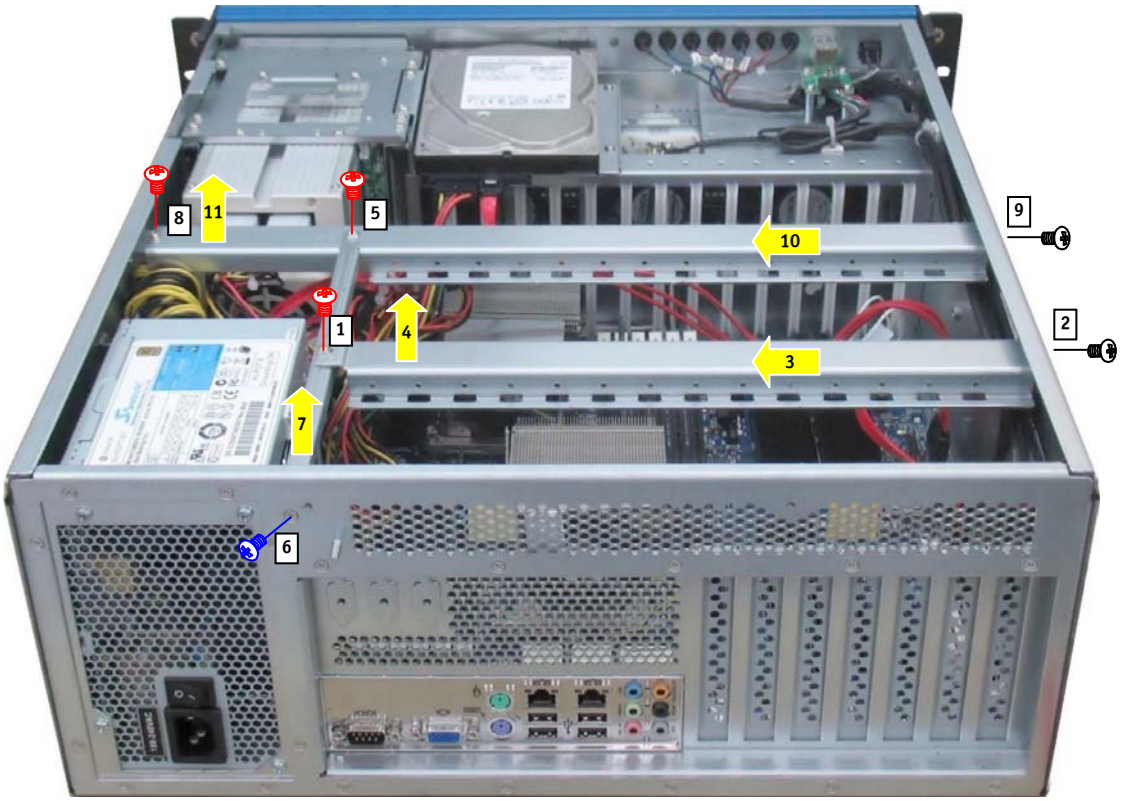



*Fig. 39: Opened KISS 4U V2 EATX platform - removing the card hold down brackets*

5. Loosen the internal and then the externally accessible fastening screw that secure the card hold down bracket for short expansion cards (see Fig. 8, pos. 7), (Fig. 39, step 1 and 2). Pull the card hold down bracket to the left (Fig. 39, step 3) to detach it from the sideways mounted bolts. Lift the card hold down bracket out (step 4). Put the card hold down bracket and the screws aside for later use.
6. Loosen the internal and then the externally accessible fastening screw that secure the retaining bracket (see Fig. 8, pos. 8), (Fig. 39, step 5 and 6). Lift the retaining bracket out (Fig. 39, step 7). Put the retaining bracket and the screws aside for later use.
7. Loosen the internal and then the externally accessible fastening screws that secure the card hold down bracket for long expansion cards (see Fig. 8, pos. 6), (Fig. 39, step 8 and 9). Pull the card hold down bracket to the left (Fig. 39, step 10), to detach it from the sideways mounted bolts. Lift the card hold down bracket out (Fig. 39, step 11). Put the card hold down bracket for long expansion cards and the screws aside for later use.
8. Install/remove the expansion card into/out of the expansion slot of the backplane/motherboard and fasten the slot bracket or the expansion card bracket to the rear slot of the device.
9. Reinstall the card hold down bracket/s and, if applicable the retaining bracket and secure it/them with the screws retained in step 5, 6 or 7).

**10.** If required, mount the PCB holder to the corresponding positioning holes of the card hold down bracket using the provided screws. Fix the upper edge of the expansion card (especially with long expansion cards) into the notch of the PCB holder (height adjustable). Thus the expansion card is firmly kept in place during high mechanical load (shock and vibrations).

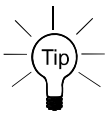
**11.** In order to re-assemble the card hold down brackets, follow the steps in reversed order. Tighten the corresponding screws half way at first. Then, tighten firmly the externally accessible screws and the retaining bracket. Only then tighten firmly the screws at the notches that secure the card hold down brackets.

**12.** Close the KISS 4U V2 EATX platform and secure the cover with the captive knurled screws.

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

- ❑ the cover fastening screw (Fig. 11, pos. 11 and Fig. 33) on the front side
- ❑ the knurled screws (Fig. 20, Fig. 21, pos. 8 and Fig. 34) on the rear side

## 8.5. Installation into a 19" Industrial Cabinet




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

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

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

For KISS 4U V2 EATX versions and system configurations, please refer to the corresponding “KISS 4U V2 EATX Systems - Configuration Guides” on our website www.kontron.com.

More information and technical data can be found in the corresponding motherboard manual, depending on the system configuration ordered). 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!**

In order to setting-up installing / removing the KISS 4U V2 EXTX 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 system has to be mounted and installed only by qualified personnel for this area, aware of the associated dangers.

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

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

Ensure there is sufficient air circulation around the device when installing the KISS 4U V2 EATX platform.

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

Leave at least 5 cm (1.969 ") of free space in front and behind the KISS 4U V2 EATX 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 4U V2 EATX platform is to operate only closed and locked.

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

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

## 9.1. AC Power Connection

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


*Fig. 40: KISS 4U V2 EATX, rear side without PE marked grounding stud (shown as KISS 4U V2 KTC5520 with AC PSU)*

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

1. The KISS 4U V2 EATX systems with grounding studs marked with a PE symbol have to be grounded by establishing a large-area contact between the grounding stud (at the rear side) and an appropriate grounding connection point (see chapter 7.3.3 “Grounding Stud”, Fig. 27 and Fig. 28).
2. Connect the AC power cord to the AC input connector.
3. Connect the other end of the AC power cord to a corresponding mains outlet.

☞ Make sure that the 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. DC Power Connection

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

The system has to be mounted and installed only by qualified personnel for this area, aware of the associated dangers.

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

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

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

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

The minimum cross section of up to 4.00 $mm^2$ for the +24VDC PSU and minimum cross section of up to 2.5 $mm^2$ for the -48VDC PSU must be selected corresponding the KISS 4U V2 EATX system configuration and the customer-specific expansion cards installed.
In order to determine the minimum cross section of the power wires, please observe the table 3D and 3E of the EN 60950-1.

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

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

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

## 9.3. Operating System and Hardware Component Drivers

The KISS 4U V2 EATX 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 4U V2 EATX 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.

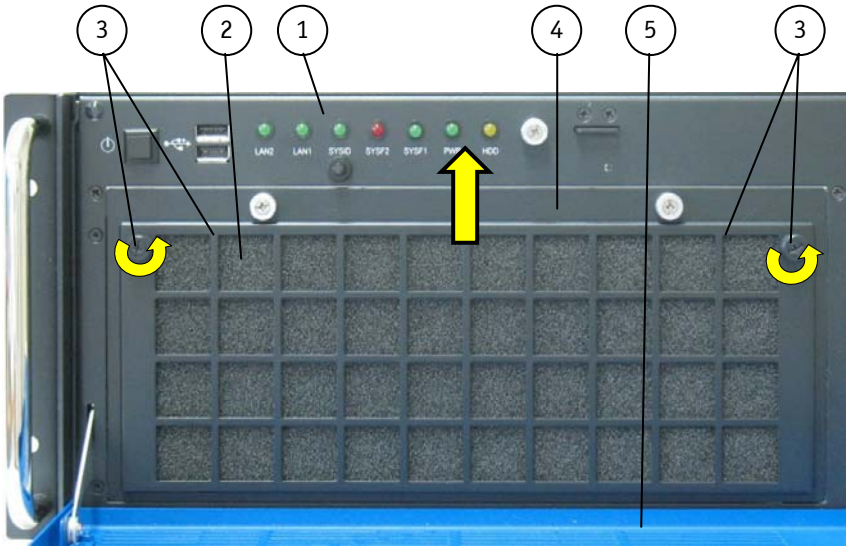
# 10. Maintenance and Prevention

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

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

## 10.1. Cleaning the Filter Mat

The filter mat is inserted in the filter mat holder at the front side of the fan slide-in module (Fig. 41, pos. 4). The soiling of the filter mat is caused by the pollution of the operating environment. A heavily soiled filter mat can cause excessive heating of the device. For this reason we recommend to clean the filter mat as often as necessary. The filter mat can be changed during operation of the system.




1 Front side (Detail: shown as a KISS 4U V2 KTC5520 platform)
2 Filter mat
3 Filter mat holder with knurled screws
4 Fan slide-in module
5 Front access panel

*Fig. 41: Detail: Filter mat holder on the front side of the KISS 4U V2 EATX platform*

To replace the filter mat, proceed as follows:

1. Open the front access panel (Fig. 41, pos. 5).
2. Loosen the knurled screws (Fig. 41, pos. 3) that secures the filter mat holder to the fan slide-in module (Fig. 43, pos. 4).
3. Pull the filter mat holder out of the positioning holes (Fig. 42, pos. 3) into the marked direction (see Fig. 41) and lift it off.
4. Remove the soiled filter mat (Fig. 41, pos. 2 and Fig. 45).
5. Clean the filter mat as follows:
   - ❑ Rinse in water (up to approx. 40°C; possibly with the addition of a standard mild detergent).
   - ❑ It is also possible to beat the filter pad, to vacuum it or blow it with compressed air.
   - ❑ For dirt that contains grease/oil, the filter pad should be rinsed with warm water with the addition of a degreaser. Filter pads should not be cleaned with powerful water jets or wrung out.

6. After cleaning and drying the filter pad, place it in the filter mad holder (see Fig. 44).
7. Reattach the filter mat holder to the front side of the fan slide-in module by inserting the positioning latches (Fig. 43, pos. 6) into the positioning holes (Fig. 42, pos. 3).
8. Secure the filter mat holder by tightening the knurled screws (Fig. 43, pos. 5) to the bolts with tapped holes (Fig. 42, pos. 1) of the fan slide-in module.

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

- ❑ Air filter mat: part number: 1036-5058.

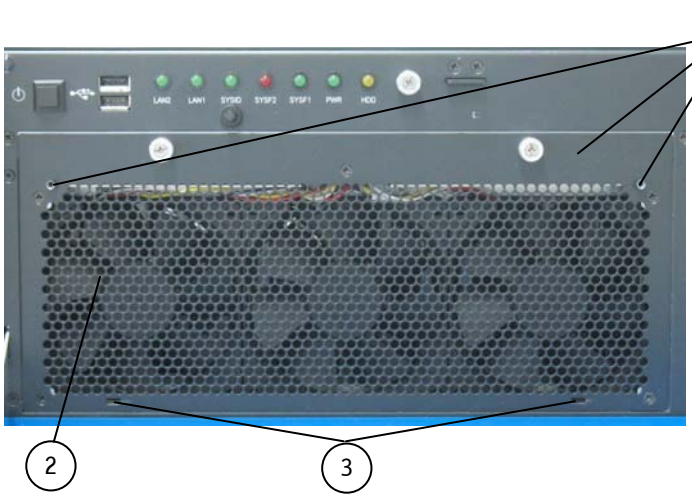



*Fig. 42: Detail: without filter mat at the front side*

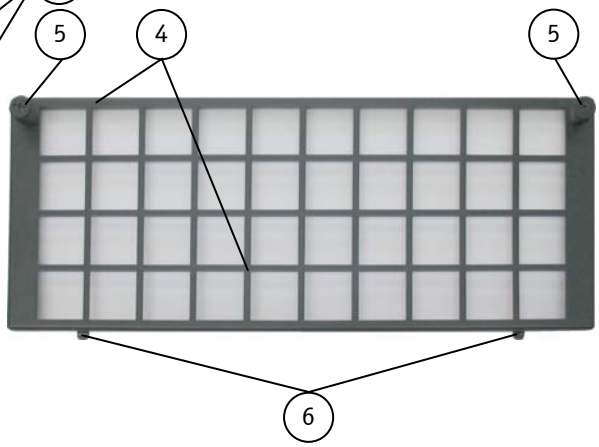



*Fig. 43: Filter mat holder without filter mat*

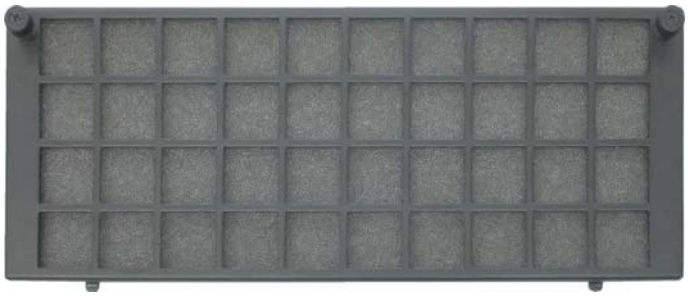


*Fig. 44: Filter mat holder with filter mat*

*Fig. 45: Filter mat*

**Legend for** Fig. 42 **and** Fig. 43:

1 Fan slide-in module with bolts (with tapped hole)

2 Air intake openings at the front side of the fan slide-in module

3 Positioning holes for the filter mat holder

4 Filter mat holder

5 Knurled screw of the filter mat holder

6 Positioning latches of the filter mat holder

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

If you have ordered a KISS 4U V2 EATX platform with IP52 Protection Class, the filter mat holder (Fig. 46) is fitted with an additional steel mesh guard (Fig. 47).

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

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

Reinsert the steel mesh guard (Fig. 47) and filter mat (Fig. 45) after cleaning into the filter mat holder (Fig. 43). The positioning of the protective guard and the filter mat in the filter mat holder is shown in Fig. 48.

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

*Fig. 46: IP52 - Filter mat holder with inserted steel mesh guard and filte rmat*

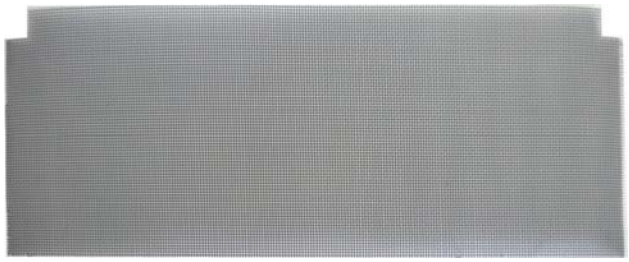


*Fig. 47: Steel mesh guard (for IP52 variant only)*


*Fig. 48: Positioning of the steel mesh guard and of the filter mat in the filter mat holder(for IP52 variant only)*

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

## 10.2. Replacing the System Fans

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

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

- ❑ Part number of the fan slide-in module: 1036-5056.

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

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

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

1. Remove the filter mat holder as described in chapter 10.1 “Cleaning the Filter Mat” (step 1 to 3) and put it aside for later reassembly.
2. Loosen the two knurled screws of the fan slide-in module (Fig. 49, pos. 1)
3. Pull the fan slide-in module out of the cabinet using the knurled screws to disconnect it from the internal fan control socket (Fig. 50, pos. 4).
4. Lift the fan slide-in module as shown (Fig. 49, pos. 2) out of the fan compartment (see Fig. 50).

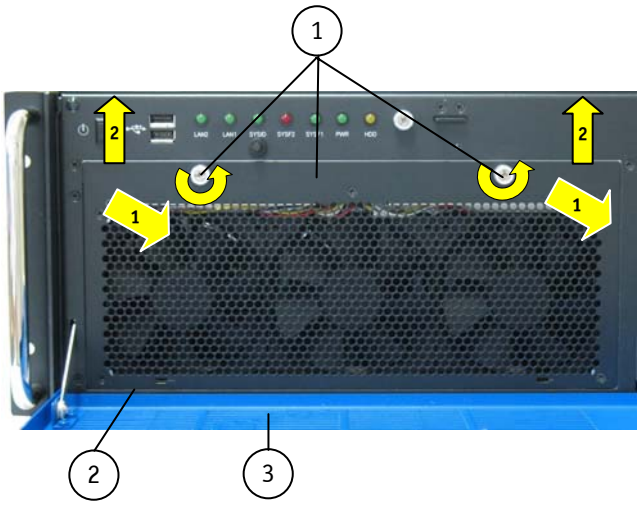



*Fig. 49: Detail: Fan slide-in module without filter mat holder*

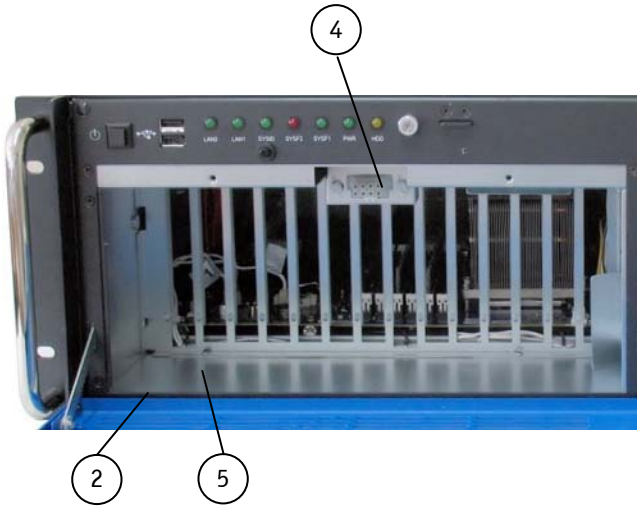



*Fig. 50: Detail: Fan compartment (without fan slide-in module)*

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

1 Fan slide-in module with two knurled screws

2 Fixing plate for the fan slide-in module (chassis)

3 Front access panel

4 Socket for fan power and control

5 Fan compartment

5. Replace the fan slide-in module with a new functional module.
6. Install the filter mat holder (put aside in step 1) with the filter mat to the front side of the fan slide-in module, as described in chapter 10.1 “Cleaning the Filter Mat” (step 7 and step 8; see also Fig. 31).
7. Insert the bracket (Fig. 31 and Fig. 32, pos. 4) into the fan compartment (Fig. 50, pos. 5) behind the fixing plate (Fig. 49 and Fig. 50, pos. 2).
8. After the bracket (Fig. 31 and Fig. 32, pos. 4) is properly inserted into the fan compartment, push the upper part of the fan slide-in module into the fan compartment until the fan control connector (Fig. 31 and Fig. 32, pos. 2) is firmly inserted into the socket (Fig. 50, pos. 4).
9. Secure the fan slide-in module by fastening the knurled screws.

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

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

## 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 8.4.1 “Installing/Removing the Expansion Cards” (step 1-4).
2. If you have added expansion cards to your system, first remove the expansion cards plus all the corresponding connecting cables, to gain access to the lithium battery, following the instructions in subsection 8.4.1 “Installing/Removing the Expansion Cards” (step 5-7).
3. Remove the lithium battery from the holder using a non-conductive tool (made out of plastic).
4. Place a new lithium battery into the battery holder.
5. Pay attention to the polarity of the battery.
6. The lithium battery must be replaced with an identical battery or a battery type recommended by Kontron Europe (CR2032, 3V).
7. Reinstall the expansion cards removed and reconnect the corresponding cable connections to the expansion cards. Please observe the instructions in subsection 8.4.1 “Installing/Removing the Expansion Cards” (step 8-11).
8. Close the device, as described in subsection 8.4.1 “Installing/Removing the Expansion Cards” (step 12).

**Caution**

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

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

# 11. Slide Rails (Option)

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

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

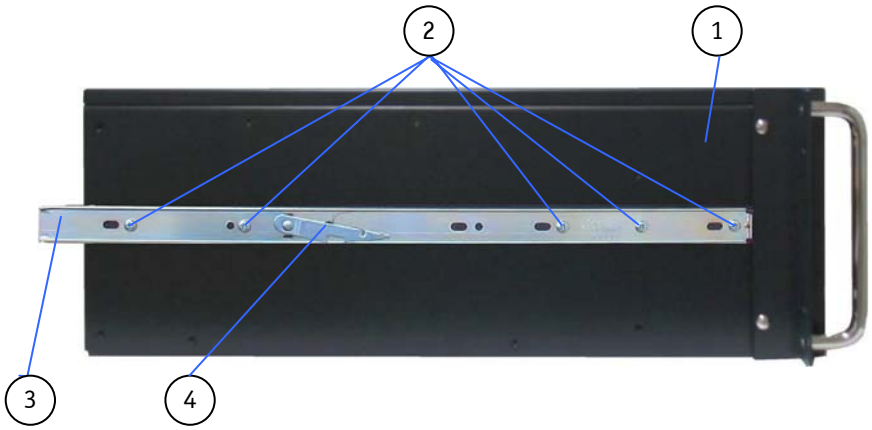



*Fig. 51: Attaching the inner part to a KISS 4U V2 EATX platform*

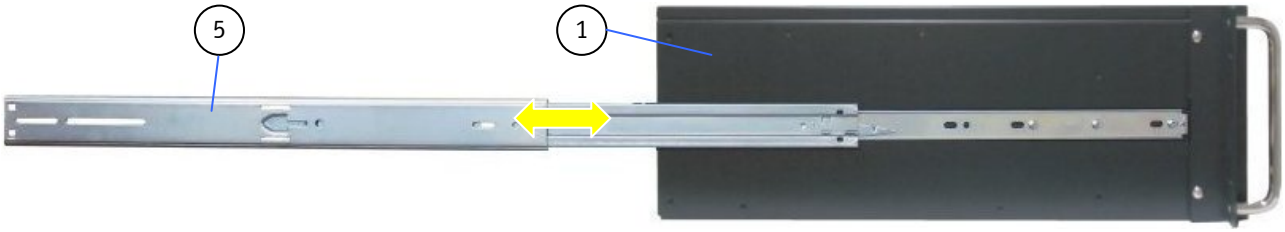



*Fig. 52: KISS 4U V2 EATX platform with slide rail in pulled-out position*


*Fig. 53: KISS 4U V2 EATX platform with slide rail in pushed-in position*

**Legend for:** Fig. 51, Fig. 52 **and** Fig. 53**:**

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

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

# 12. Technical Data

| KISS 4U V2 EATX-xxxxxxxx-y | KISS 4U V2 KTC 5520-y | KISS 4U V2 X9DR3FB-y |
|---|---|---|
| **Installed Board** | KTC 5520 | X9DR3-F |
| **Operating elements** (at the front side) | 1x Power button<br>1x SYSID button | 1x Power button<br>SYSID button (not available) |
| **LED Indicators** (at the front side) | 1x Power LED (green)<br>1x HDD LED (yellow)<br>1x LAN1 LED (green)<br>1x LAN2 LED (green)<br>1X SYSF1 LED (green)<br>1x SYSF2 LED (red)<br>1x SYSID LED (green) | 1x Power LED (green)<br>1x HDD LED (yellow)<br>1x LAN1 LED (green)<br>1x LAN2 LED (green)<br>1X SYSF1 LED (red)<br>1x SYSF2 LED (red)<br>SYSID LED (not available) |
| **Interfaces** | At the front side:<br>2x USB (2.0) | |
| | At the rear side:<br>I/O intefaces of the installed server board | |
| **Drive Bays** | Up to four drive bays<br>* Optional equipment, depending on the system configuration ordered (see also "KISS 4U V2 EATX Systems - Configuration Guides") | |
| **Free expansion Slots** | Up to six slots<br>* Optional equipment, depending on the system configuration ordered (see also "KISS 4U V2 EATX Systems - Configuration Guides") | |
| **Lithium Battery (CMOS)** | * See manual of the installed sever board | |
| **DC Connection** (at the rear side) | "+" and "-" screw terminals | |
| **DC PSU LED Indicator** (at the rear side) | "POWER-ON" LED of the installed PSU | |
| **AC Connection** (at the rear side) | IEC C14 inlet connector with or without ON/OFF power switch (depending on the installed PSU) | |
| **ON/OFF Switch of the AC/DC PSU** (at the rear side) | depending on the equipped AC/DC PSU | |
| **AC or DC Rated Voltage Range** | See type label | |

KISS 4U V2 EATX = 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 4U V2 EATX Systems - Configuration Guides" and the manual of the installed CPU board 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 4U V2 EATX platform can be found on the type label.

## 12.2. Mechanical Specifications

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

## 12.3. Environmental Specifications

| | |
|---|---|
| **Thermal Management** | 3x system fan (temperature-controlled fan slide-in module)<br>2x CPU fan<br>1x PSU fan |
| **Operating Temperature** | 0 ... +50 °C; (+55 °C at 10% POH per month)<br>(32 .. 122 °F; (131 °F at 10% POH per month) |
| **Storage / Transport Temperature** | -20 ... +70 °C<br>(-4 ... 158 °F) |
| **Relative Humidity** (Operating/Storage/Transit) | 10-95 % @ 40° C non condensing |
| **Max. Operation Altitude** | 2,000 m (6,560 ft) |
| **Max. Storage / Transport Altitude** | 10,000 m (32,810 ft) |
| **Operating Shock** | 15 G, 11 ms, half sine |
| **Storage / Transit Shock** | 30 G., 11 ms, half sine |
| **Operating Vibration** | 10 – 500 Hz, 1.0 G |
| **Storage / Transit Vibration** | 10 – 500 Hz, 2.0 G |
| **Acoustic Noise** | < 40 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<br>Low Voltage Directive (LVD) 2006/95/EC |
| **Electromagnetic Compatibility (EMC)** | EMC Directive 2004/108/EC |
| **CE Marking** | CE Directive 93/68/EEC |

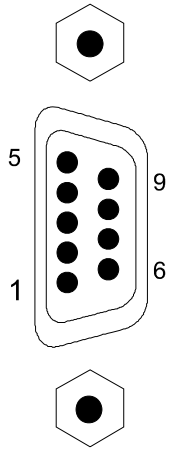
| Elektrical Safety | Harmonized Standards |
|---|---|
| **EUROPE** | Information technology equipment - Safety - Part 1: General requirements<br>EN 60950-1:2006+A11:2009+A1:2010+A12:2011+AC:2011 |
| **U.S.A. / CANADA** | to meet UL60950-1:2007 / CSA C22.2- No. 60950-1-7:2007 |

| EMC | Harmonized Standards |
|---|---|
| **EU** | Generic emission standard for industrial environments (Emission):<br>EN 61000-6-4:2007<br>Generic standards - Immunity for industrial environments (Immunity):<br>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

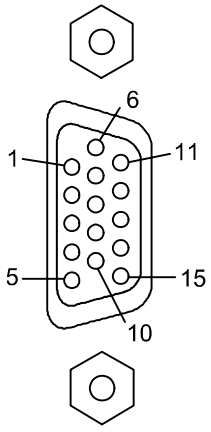
Low-active signals are indicated by a minus sign.

### 13.1.1. Serial Interface (RS232)

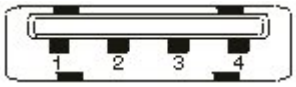
| Pin | Signal Name | | 9-pin D-SUB Connector (male) |
|---|---|---|---|
| 1 | DCD | (Data Carrier Detect) |  |
| 2 | RXD | (Receive Data) | |
| 3 | TXD | (Transmit Data) | |
| 4 | DTR | (Data Terminal Ready) | |
| 5 | GND | (Signal Ground) | |
| 6 | DSR | (Data Set Ready) | |
| 7 | RTS | (Request to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



### 13.1.2. VGA Port

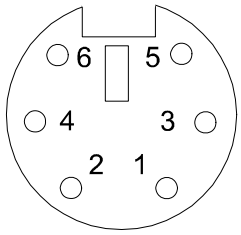
| Pin | Signal Name | 15-pin D-SUB Connector (female) |
|---|---|---|
| 1 | Analog red output |  |
| 2 | Analog green output | |
| 3 | Analog blue output | |
| 4 | N.C. | |
| 5-8 | GND | |
| 9 | +5 V (DDC) | |
| 10 | GND | |
| 11 | N.C. | |
| 12 | SDA (DDC) | |
| 13 | TTL HSync | |
| 14 | TTL VSync |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

### 13.1.3. USB Port

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

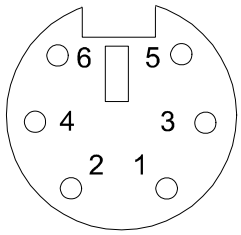


### 13.1.4. PS/2 Keyboard Connector

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



### 13.1.5. PS/2 Mouse Connector

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

# 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 (**R**eturn of **M**aterial **A**uthorization)] from our website www.kontron.com / Support /.RMA Information; 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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