

# » User's Guide «



## Clinic DPC 210

**User's Guide** (Version 1.0)  
1059-4230

This page has been intentionally left blank.

# 1. Table of Contents

<b>1. Table of Contents</b> .....	<b>3</b>
1.1. Table of Figures .....	5
<b>2. Introduction</b> .....	<b>6</b>
2.1. Symbols used in this Manual.....	7
<b>3. Important Instructions</b> .....	<b>8</b>
3.1. Obligation of Diligence .....	8
3.2. Personnel .....	8
3.3. Appropriate Use, Field of Application .....	8
3.4. Warranty Note.....	8
3.5. Exclusion of Accident Liability Obligation .....	8
3.6. Liability Limitation / Exemption from the Warranty Obligation .....	8
<b>4. General Safety Instructions for IT Equipment</b> .....	<b>9</b>
4.1. Operation of Laser Source Devices .....	10
4.2. Electrostatic Discharge (ESD) .....	11
4.2.1. Grounding Methods .....	11
4.3. Instructions for the Lithium Battery.....	11
<b>5. Electromagnetic Compatibility (Class A Device)</b> .....	<b>12</b>
5.1. Electromagnetic Compatibility (EU) .....	12
5.2. FCC Statement (USA) .....	12
5.3. EMC Compliance (Canada).....	12
<b>6. Shipment and Unpacking</b> .....	<b>13</b>
6.1. Unpacking .....	13
6.2. Scope of Delivery .....	13
6.2.1. Optional Parts (System Expansion).....	13
6.3. Type Label and Product Identification.....	13
<b>7. System Overview</b> .....	<b>14</b>
<b>8. Front Side</b> .....	<b>15</b>
8.1.1. Controls and Indicators .....	16
8.1.2. USB Interfaces on the Front Side .....	16
8.1.3. Air intake Opening on the Front Side .....	16
8.1.4. DVD-Drive.....	16
8.2. Rear Side .....	17
8.2.1. Power Supply Unit .....	18
8.2.2. HDD LED.....	18
8.2.3. External Interfaces of the KTQ67/Flex-Medical Motherboard .....	18
8.2.4. USB 2.0 Ports on the rear Side.....	19
8.2.5. Grounding Stud .....	19
8.3. Bottom Side View .....	20
<b>9. Assembly, Disassembly</b> .....	<b>21</b>
9.1. Accessing Internal Components .....	21
9.1.1. Installing/Removing the Expansion Cards .....	21
<b>10. Starting Up</b> .....	<b>23</b>
10.1. Instructions for Installation .....	23

10.2. AC-Power Cord Connection.....	23
<b>11. Maintenance and Prevention .....</b>	<b>24</b>
11.1. Replacing the Lithium Battery .....	24
11.2. Replacing the Filter Mat .....	25
<b>12. Main Specifications .....</b>	<b>27</b>
12.1. Electrical Specifications .....	28
12.2. Mechanical Specifications .....	28
12.3. Environmental Specifications .....	29
12.4. CE Directives and Standards .....	29
<b>13. Standard Interfaces – Pin Assignments .....</b>	<b>30</b>
13.1.1. Serial Interface COM (RS232) .....	30
13.1.2. USB Port .....	30
13.1.3. DVI-I (Single Link) Interface.....	31
13.1.4. DVI-D (Single Link) .....	32
<b>14. Technical Support .....</b>	<b>33</b>
14.1. Returning Defective Merchandise .....	33

## 1.1. Table of Figures

Fig. 1: Laser radiation warning label .....	10
Fig. 2: Example of Clinic DPC 210 type label.....	13
Fig. 3: Clinic DPC 210 .....	14
Fig. 4: Front side .....	15
Fig. 5: Clinic DPC 210 – rear side.....	17
Fig. 6: External interfaces of the installed motherboard (KTQ67/Flex Medical) .....	18
Fig. 7: Detail grounding stud marked with “PE”symbol .....	19
Fig. 8: Clinic DPC 210 – bottom side .....	20
Fig. 9: Loosen the fastening screws on the rear side of the Clinic DPC 210 system.....	21
Fig. 10: Slide the U-shaped cover back and remove it .....	21
Fig. 11: Clinic DPC 210 without U-shaped cover (right side view).....	21
Fig. 12: Clinic DPC 210 right side view without cover .....	22
Fig. 13: Clinic DPC 210 right side view without cover .....	22
Fig. 14: Clinic DPC 210 –power cord connection .....	23
Fig. 15: Clinic DPC 210 –location of the lithium battery.....	24
Fig. 16: Access to the filter mat (on the system bottom side) .....	25
Fig. 17: Removing the filter mat holder.....	25
Fig. 18: Filtermat holder with inserted filter mat .....	26
Fig. 19: Filter mat holder without filter mat .....	26
Fig. 20: Filter mat .....	26
Fig. 21: How to insert the filter mat into the holder .....	26
Fig. 22: mechanical dimensions .....	28

## 2. Introduction

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

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

© 2015 by Kontron Europe

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





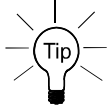
Kontron Europe GmbH

Lise-Meitner-Str. 3-5

86156 Augsburg

Germany

## 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

Prior performing any installation or working with the device, this manual must be read carefully to become familiar with the device. The general safety instructions and information must be observed

This chapter contains instructions which must be observed when working with the Clinic DPC 210.

### 3.1. Obligation of Diligence

The operator must ensure that the Clinic DPC 210 is used as intended, the user's guide is understood and the personnel has the necessary authorization and regularly training about relevant standards, regulations and instructions.

Further the operator must ensure that the Clinic DPC 210 is mounted, operated and maintained according to the instruction of this manual.

Depending on the target application the operator must observe the current applicable national and international regulations and standards.

### 3.2. Personnel

Only personnel with appropriate qualifications, trainings and authorization are permitted to install and work with the Clinic DPC 210 system.

All applicable technical standards, regulations and guidelines for the installation and usage of the device must be understood and followed. Further accident prevention regulations and directives must be observed.

Every user of this system must be familiar with the instructions described in this manual.

### 3.3. Appropriate Use, Field of Application

The Clinic DPC 210 is to be used as intended. The operator must ensure that the place of installation complies with applicable national and international standards and regulations.

### 3.4. 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 e.g., to battery and additional battery.

### 3.5. Exclusion of Accident Liability Obligation

Kontron 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.

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

In the event of damage to the device caused by failure to observe the "General Safety Instructions for IT Equipment" in this manual or eventually the warning signs label on the device, Kontron 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 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.

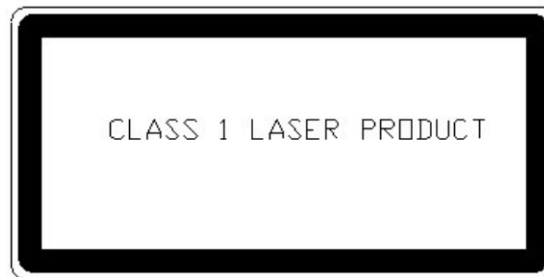
The product has been built and tested according to the basic safety requirements for low voltage (LVD) applications and has left the manufacturer in safety-related, flawless condition. To maintain this condition and to also ensure safe operation, the operator must not only observe the correct operating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

### 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, 1040.10 and 1040.11 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 motherboard is equipped with lithium batteries (CR 2032 and CR1/2AA-LF). When replacing the lithium battery, please follow the corresponding instructions in the section 11.1 “Replacing the Lithium Battery”.

	<p><b>Caution</b></p> <p>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.</p>
	<p>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).</p>

## 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. Shipment and Unpacking

### 6.1. Unpacking

Proceed as follows to unpack the unit:

1. Remove packaging.
2. Do not discard the original packaging. Keep it for future relocation.
3. Check the delivery for completeness by comparing it with your order.
4. Please keep the associated paperwork. It contains important information for handling the unit.
5. Check the contents for visible shipping damage.
6. If you notice any shipping damage or inconsistencies between the contents and your order, please contact Kontron for help and information.

### 6.2. Scope of Delivery

- Clinic DPC 210 (corresponding to the ordered system configuration)
- AC power cable
- General Safety Instructions for IT Equipment

#### 6.2.1. Optional Parts (System Expansion)

- Mini-PCIe cards
- mSATA cards
- PCIe cards

### 6.3. Type Label and Product Identification

The type label (product name, serial number, part number, production date) of your Clinic DPC 210 system is located on the rear side of the device (refer to Fig. 2 and Fig. 5, pos. 12).



Fig. 2: Example of Clinic DPC 210 type label

## 7. System Overview

The Clinic DPC 210 is designed as a Patient Data Workstation that stores and archives patient data such as medical image assessments and medical records. The installed KTQ67/Flex Medical motherboard with its two galvanic isolated Gigabit Ethernet ports (complying with EN 60601-1) fulfill the specific requirements of medical application. The Clinic DPC 210 can be safely integrated into hospital networks. Ports such as DVI, USB and RS232 make the Clinic DPC 210 system proper for use in a wide variety of clinical data management applications.

The system is a tower PC system and is designed to be used only in tower orientation. The rugged design with an excellent mechanical stability marks the superior qualities of a computer suitable for the operation in harsh medical as well as industrial environment.

The system is delivered with an internal 3.5" SSD/HDD (SATA) and a front accessible 5 ½" optical DVD-writer. Four expansion slots are available on the rear side of the system. One slot is assigned for a serial port, as standard configuration.

The onboard system expansion capabilities are:

- 1x PCIe x16
- 2x PCI (32 bit)
- 1x PCIe x4 (mech. X16)

The two DVI ports available allow you to control at the same time the image output on two HD monitors.

The power button with integrated LED and the HDD LED indicator are located on the front side of Clinic DPC 210 system.

The Clinic DPC 210 is equipped with an AC wide range PSU (400).

The system cooling is achieved by means of two system fans, one CPU fan and the PSU fan. Air openings are available on the front and rear side of the system.

The rated voltage range of the mains can be found on the type label. The type label is attached at the side of the device (Fig. 5, pos. 12).



The Clinic DPC 210 is designed to be operated in vertical position (as tower device).

If you operate the Clinic DPC 210 please observe that it is a system with active cooling.

When powering on the DPC 210 system, make sure that the air intake and exhaust openings on the front and rear side are not obstructed by objects.



Fig. 3: Clinic DPC 210

## 8. Front Side

The system is available as tower version.

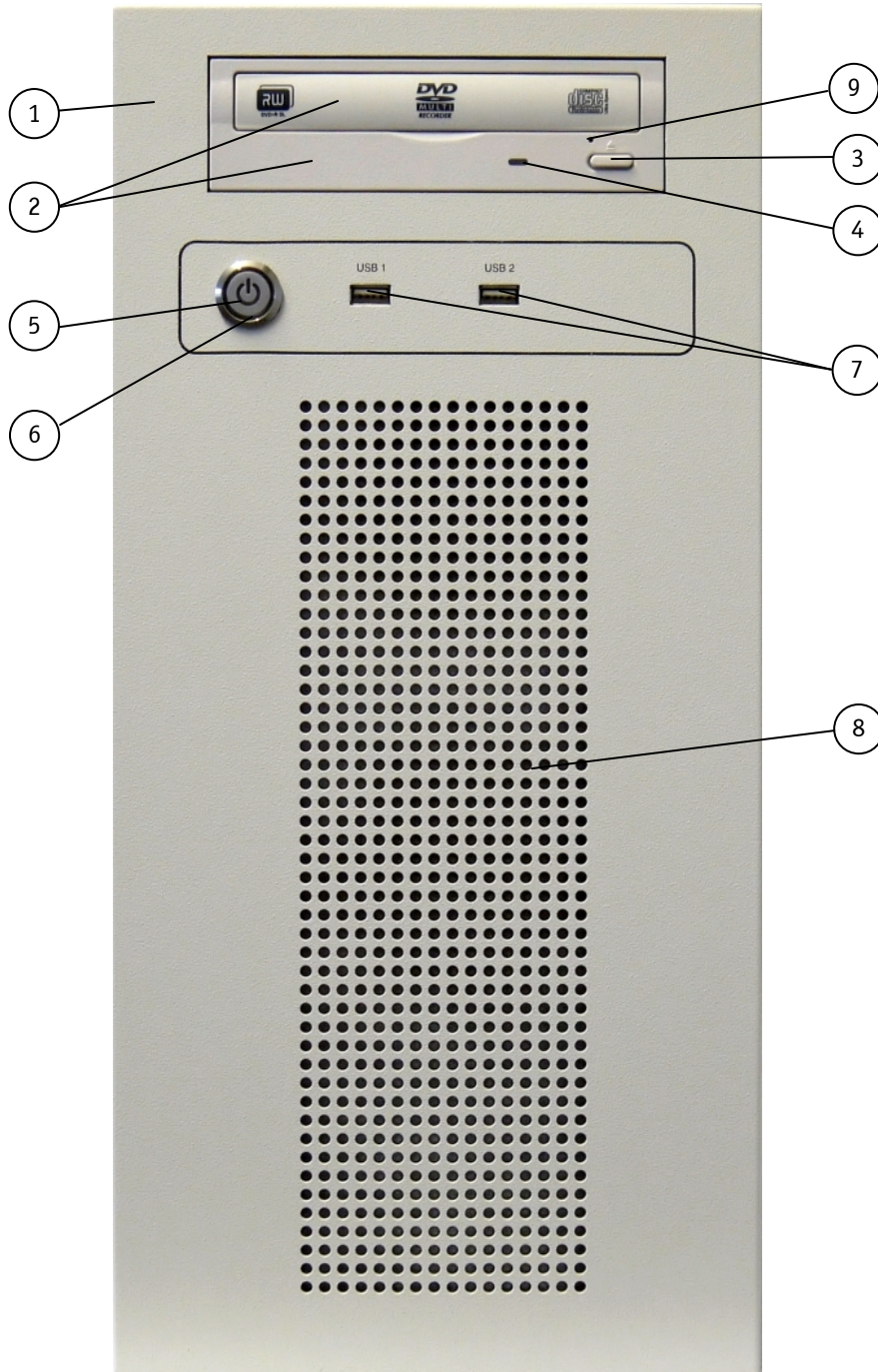


Fig. 4: Front side

- |   |   |
|---|---|
| 1 Front panel                                 | 6 Power ring LED  |
| 2 Disk tray of the optical DVD RW drive       | 7 2x USB 2.0  |
| 3 Open/Close button of the disk tray          | 8 Air intake openings in front of the internal system fans (and filter mat) |
| 4 Activity LED of the DVD-RW drive            | 9 Emergency eject hole  |
| 5 Power button with integrated power ring LED |   |

### 8.1.1. Controls and Indicators

#### 8.1.1.1. Power Button and Power LED

The power button (Fig. 4, pos. 4) allows you to power the system on or off.

The power LED (Fig. 4, pos. 5) is blinking blue as long the system is powering up and is blue steady when power is applied to the system.

#### Prerequisite:

The Clinic DPC 210 has to be connected to an appropriate AC mains and the power switch of the power supply unit on the rear side is set to "ON" (Fig. 5, pos. 9, pos. 11).

#### System behavior:

As soon as external AC mains power is applied to the power input connector (Fig. 5, pos. 11) the power switch (Fig. 5, pos. 11) of the PSU is set to "ON" and the green LED of the PSU is lighting up (Fig. 5, pos. 10), the Clinic DPC 210 boots up and starts the operating system and application where available.

To perform an orderly shutdown of the system, press the button and the system shuts down under the control of the operating system. Once the system has been shut down, it can be restarted by pressing the power button (assuming that mains power is still applied to the PSU input power connector and the power switch of the PSU is "ON").



Please observe the settings: BIOS Setup / Chipset / South Bridge Configuration / "Restore on AC Power Loss" with the setup options **Power On** / **Power Off** / **Last State**.  
The system is delivered with the default setting "**Power On**".

By pressing the power button for longer than four seconds a forced system shutdown will be initiated, before the power to the system is turned off.



#### Caution!

**Performing a forced shut down can lead to loss of data or other undesirable effects!**



Even when the Clinic DPC 210 is turned off via the power button there is still a standby-voltage of 5 Vsb on the motherboard. 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.

### 8.1.2. USB Interfaces on the Front Side

The Clinic DPC 210 provides two USB 2.0 interfaces ("USB 1", "USB 2") on the front side (Fig. 4, pos. 7). You can connect various USB devices to these two USB 2.0 interface connectors. For pin assignment refer to subsection 13.1.2.

### 8.1.3. Air intake Opening on the Front Side

In order to ensure the system cooling, there are on the front side air intake openings (Fig. 4, pos. 8). These openings are in front of the internal system fans and the corresponding filter mat (refer to section 11.2).



When powering on the Clinic DPC 210 system, make sure that the air intake openings are not obstructed by objects.

### 8.1.4. DVD-Drive

The Clinic DPC 210 is equipped with an optical DVD-RW drive. Please observe the safety instructions in section 4.1. The emergency eject hole (Fig. 4, pos. 9) is to be used when the disk tray (Fig. 4, pos. 2) can't be opened by pressing the "Open/Close" button (Fig. 4, pos. 3).

**Caution!** Ensure that no power to the drive is available (power is OFF), when you perform the opening of the disk tray manually.



## 8.2. Rear Side

On the rear side of the Clinic DPC 210 there are available the HDD LED, the external interfaces of the integrated motherboard, an expansion slot with an additional serial port (routed from the onboard COM interfaces) three other free expansion slots, the power supply unit, the Protective Earth stud and the air exhaust openings.

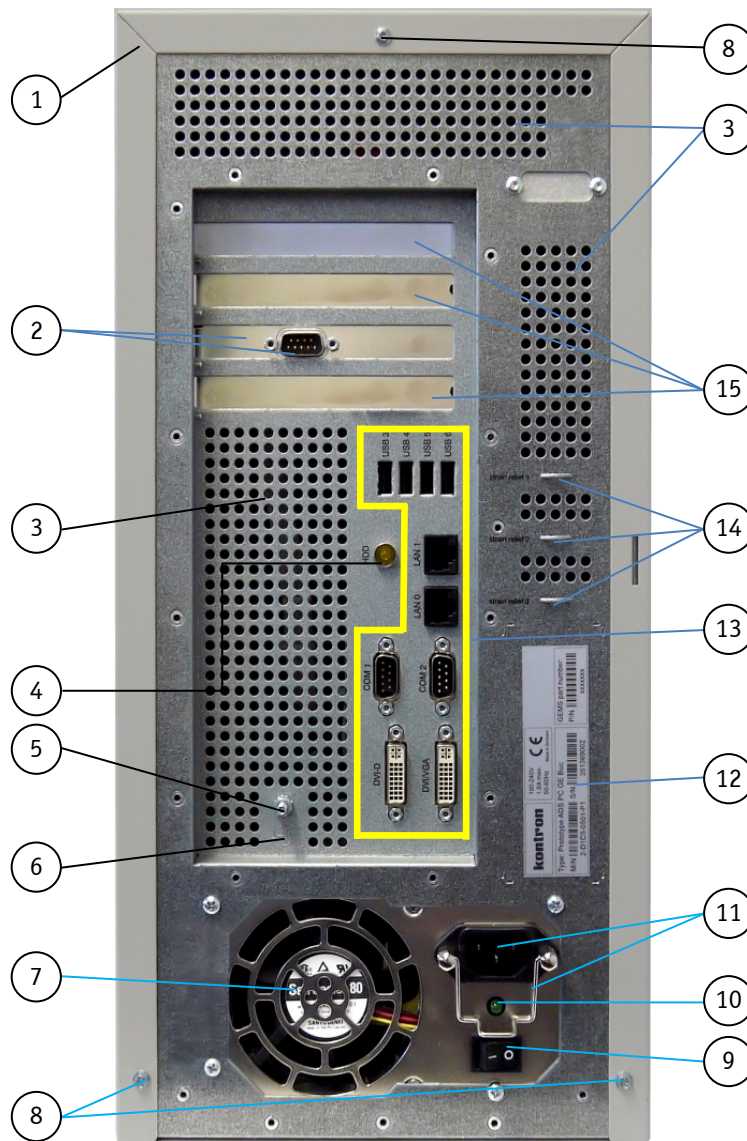


Fig. 5: Clinic DPC 210 – rear side

- |   |   |
|---|---|
| 1 U-shaped device cover of the Clinic DPC 210 | 9 "On/Off" switch of the PSU                  |
| 2 Slot bracket with serial interface (RS232)  | 10 Power LED of the PSU                       |
| 3 Air exhaust openings                        | 11 PSU AC input connector with retaining clip |
| 4 HDD/SSD activity LED                        | 12 Type label                                 |
| 5 Protective Earth stud (PE)                  | 13 Interfaces of the motherboard              |
| 6 PE symbol                                   | 14 3x strain relief                           |
| 7 Fan of the Power Supply Unit (PSU)          | 15 Free expansion card slots                  |
| 8 Torx screws to secure the device cover      |   |

### 8.2.1. Power Supply Unit

The power supply unit (PSU) is placed on the rear side of the unit (Fig. 5). The On the AC input connector there is available a stainless steel retaining clip (Fig. 5, pos. 11) for protection against loosening or accidental disconnection of the plug connector.

The PSU is equipped with a PSU on/off switch and LED (Fig. 5, pos. 9 and 10).

For information about the integrated power supply unit (PSU) and the supply voltage of your system refer to type label (Fig. 2). It is attached on the rear side of the unit (Fig. 5, pos. 12).

### 8.2.2. HDD LED

The HDD LED (Fig. 5, pos. 4) lights up during HDD activity.

### 8.2.3. External Interfaces of the KTQ67/Flex-Medical Motherboard



A detailed ports description can be found in the manual of the installed motherboard. You can download the corresponding manual from our web site [www.kontron.com](http://www.kontron.com) by selecting the product.

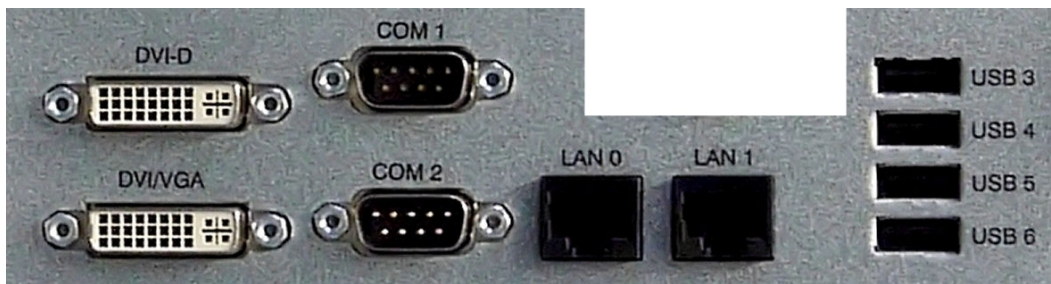


Fig. 6: External interfaces of the installed motherboard (KTQ67/Flex Medical)



Up to two displays (any two display outputs) can be activated at the same time and be used to implement dual independent display support or mirror display support.

Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection.

VGA modes will be supported only on primary display.

PCIe and PCI graphics cards can be used to replace on-board graphics or in combination with on-board graphics.

#### 8.2.3.1. DVI/VGA Port

This port, marked "DVI/VGA" in Fig. 6, supports both analogue and digital (Single Link) signals. It is a DVI-I connector. Digital as well as analog devices can be connected directly by use of corresponding cable/adaptor connection to this interface of the Clinic DPC-210. For pin assignment refer to subsection 13.1.3.

#### 8.2.3.2. DVI-D Port

This port, marked "DVI-D" in Fig. 6, supports digital (Single Link) signals. Digital devices can be connected directly to this interface of the Clinic DPC-210. For pin assignment refer to subsection 13.1.4.

### 8.2.3.3. Serial Ports COM 1 and COM 2 (RS232)

These ports (9-pin D-SUB), marked “COM 1” and “COM 2” in Fig. 6, allow RS232 serial communication. They make possible to connect serial devices to the system. For pin assignment refer to subsection 13.1.1.

### 8.2.4. USB 2.0 Ports on the rear Side

The Clinic DPC 210 provides four USB 2.0 interfaces (“USB 3”, “USB 4”, “USB 5” and “USB 6”) on the rear device side (Fig. 6). These ports allow connection of USB 2.0 compatible devices to the system. For pin assignment refer to subsection 13.1.2.

#### 8.2.4.1. Ethernet Connectors (ETH)

These connectors marked “LAN 0” and “LAN 1” in Fig. 6, are both galvanic isolated and support Gigabit Ethernet 10/100/1000 Mbit/s (complying with EN 60601-1).



In order to achieve the specified performance of the Ethernet port, minimum Category 5 twisted pair cables must be used with 10/100MB and minimum Category 5E, 6 or 6E with 1Gb LAN networks.



A detailed description of the ports can be found in the manual of the corresponding CPU card (motherboard). You can download the CPU card manual from our web site at [www.kontron.com](http://www.kontron.com) by selecting the product (KTQ67/Flex Medical).

#### 8.2.4.2. Additional Serial Port (RS232)

This serial port (Fig. 5, pos. 2) is an onboard COM interface routed to slot bracket on the rear side of the Clinic DPC 210. It makes possible to connect a serial device to the system. For pin assignment refer to subsection 13.1.1.

### 8.2.5. Grounding Stud

The grounding stud and the PE marking are located on the rear side of the Clinic DPC 210 system (Fig. 6, pos. 5 and pos. 6).



The ground stud (Fig. 6, pos. 5) of the Clinic DPC 210 has to be grounded to an appropriate “protective earth” connection point.



Fig. 7: Detail grounding stud marked with “PE” symbol

### 8.3. Bottom Side View

On the bottom side of the Clinic DPC 210 is available the removable filter mat tray (Fig. 8, pos. 2) and the device feet. (

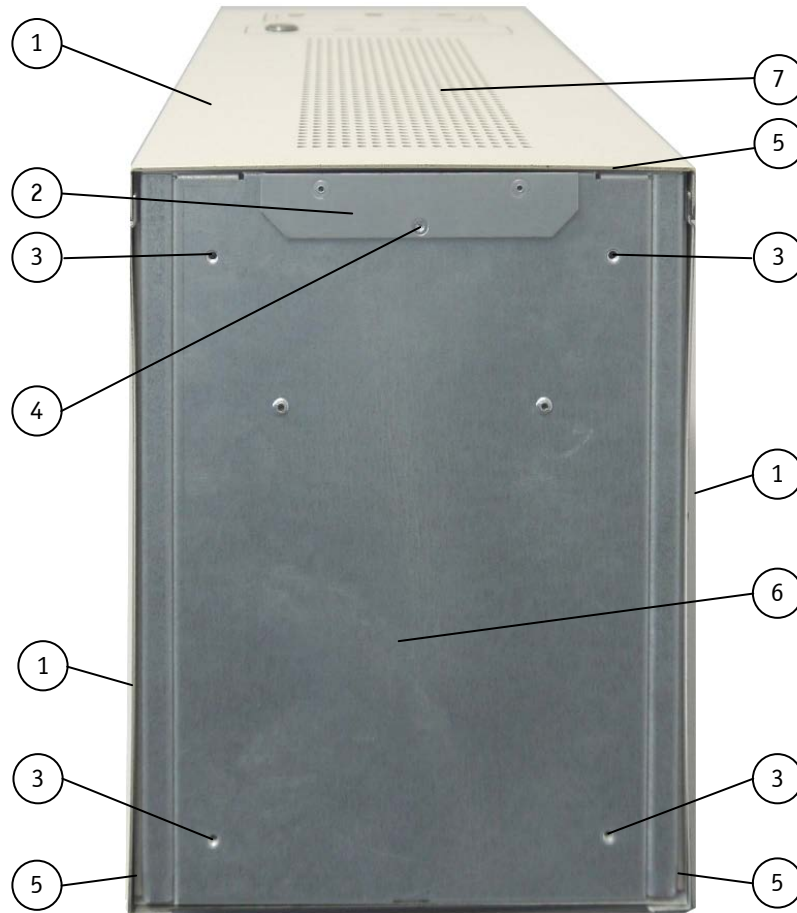


Fig. 8: Clinic DPC 210 – bottom side

- |   |   |
|---|---|
| 1 U-shaped device cover   | 5 EMC gaskets (seals), (1x 180 mm, 2x 420 mm)   |
| 2 Removable filter mat holder   | 6 Bottom side of the chassis  |
| 3 4x threaded holes for device feet   | 7 Air intake openings on the front side (behind them are located the system fans and the filter mat holder) |
| 4 Screw that secure the removable filter mat holder (M3x6 Torx countersunk screw) |   |

## 9. Assembly, Disassembly

### 9.1. Accessing Internal Components

This section contains important information that you should read before accessing the internal components. You should follow these procedures when handling any expansion cardboards.

#### 9.1.1. Installing/Removing the Expansion Cards



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

Activities such as working inside the system or handling the expansion cards have to be carried-out by the service person for this area or a suitably instructed user.

Ensure that you have a clean, flat and ESD-safe surface to work on.



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



Please consult the documentation provided by the manufacturer of the expansion card for instructions before attempting to install/remove an expansion card into/from the Clinic DPC 210 platform.

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

1. Close all applications. Shut down the system properly and disconnect the connection to the power source. Disconnect all peripherals.
2. Unscrew the fastening screws on the rear side of the unit that secure the cover. Retain these screws for later use.



Fig. 9: Loosen the fastening screws on the rear side of the Clinic DPC 210 system



Fig. 10: Slide the U-shaped cover back and remove it



Fig. 11: Clinic DPC 210 without U-shaped cover (right side view)

3. Pull out the cover (as shown in Fig. 10) and remove it. Put the cover aside for later use.

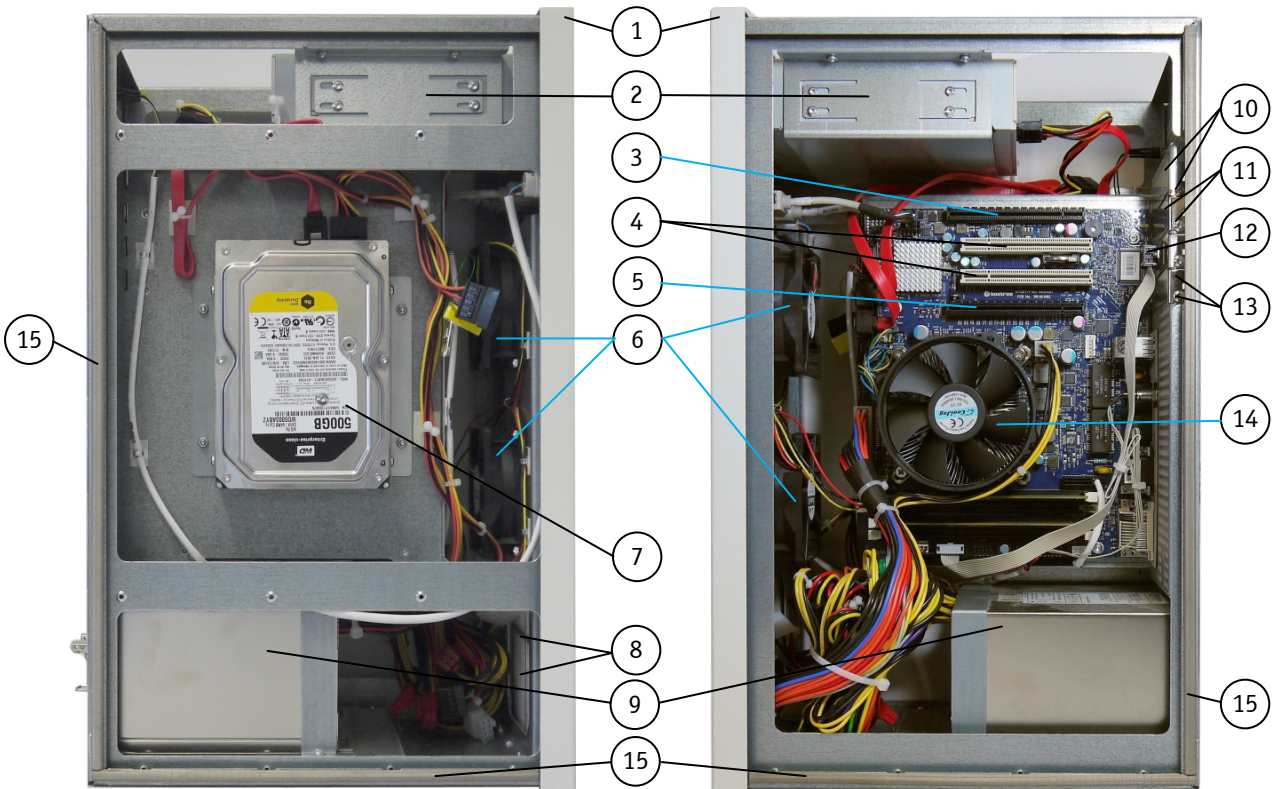


Fig. 12: Clinic DPC 210 right side view without cover

Fig. 13: Clinic DPC 210 right side view without cover

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

- |  |  |
|--|--|
| 1 Front panel                            | 9 Power Supply Unit (PSU)  |
| 2 DVD optical drive                      | 10 Slot bracket with fastening screw for PCIe x4 expansion card  |
| 3 PCIe x4 onboard connector              | 11 Slot bracket with fastening screw for PCI expansion card      |
| 4 2x PCI 32 bit onboard connector        | 12 Slot bracket with additional serial port                      |
| 5 PCIe x16 onboard connector             | 13 Slot bracket with fastening screw for PCIe x16 expansion card |
| 6 2x system fan                          | 14 CPU fan   |
| 7 1x 3.5" SATA HDD (6 Gb/s)              | 15 EMC gaskets (2x 250 mm, 2x 420 mm)                            |
| 8 Filter holder with inserted filter mat |  |

4. In order to remove the slot or card brackets remove the screw of the corresponding slot (Fig. 13, pos. 10 or pos. 11 or pos. 13). Retain these screws for later use.
5. Insert/remove the expansion card into/out of the PCI/PCIe slot.
6. Position the bracket of the expansion card or the slot bracket at the rear side of the chassis.
7. Secure the slot/card bracket in this position by fastening retained the screws (Fig. 13, pos. 10. Pos. 11 or pos. 13) firmly.
8. Reinstall the device cover and secure it with the fastening screws (Fig. 5, pos. 8) on the rear side.



When closing the cover, verify the perfect condition of the EMC gaskets (seals) on the rear, left and right side of the unit. The EMC gaskets (seals) have to be in place without injury/defects and dirt. Refer to Fig. 8, pos. 5 and, Fig. 12 and Fig. 13, pos. 15.

## 10. Starting Up

### 10.1. Instructions for Installation



In order to setting-up installing / removing the Clinic DPC 210, please observe the instructions described in this manual.

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

Ensure there is sufficient air circulation around the device when installing the Clinic DPC 210 system.

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

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

The 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.

### 10.2. AC-Power Cord Connection



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

The AC power plug of the PSU is located on the rear side of the Clinic DPC 210 platform.



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

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



AC power plug

1. Connect the supplied AC power cord into the system AC power plug (see Fig. 14).
2. Connect the other end of the AC power cord into a corresponding mains outlet.
3. Switch on the power switch of the PSU.
4. The system will boot immediately.

Fig. 14: Clinic DPC 210 –power cord connection

## 11. Maintenance and Prevention

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

- Occasionally wipe the system with a soft dry cloth.
- You should only remove persistent dirt by use of a soft, slightly damp cloth (use only a mild detergent).
- Check the air filter mats regularly and replace it if necessary (refer to section 11.2 “Replacing the Filter Mat”).

### 11.1. 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 9.1.1 “Installing/Removing the Expansion Cards” (step 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. Please observe the instructions in subsection 9.1.1 “Installing/Removing the Expansion Cards” (step 1-4).

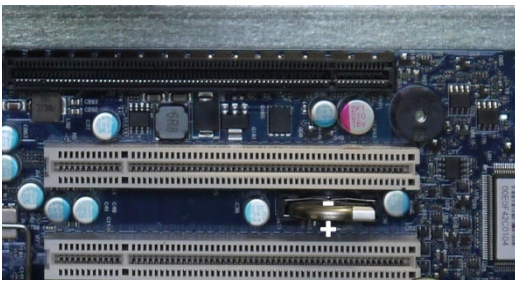


Fig. 15: Clinic DPC 210 –location of the lithium battery

3. Remove the old battery by pressing outwards on the ejector spring.
4. Place the new battery into the socket.
5. Make sure that you insert the battery the right way around. The plus pole must be on the top!
6. The lithium battery must be replaced with an identical battery or a battery type recommended by Kontron Embedded Computers. The Lithium battery type must be UL listed.
7. Reinstall if necessary, the removed expansion cards and corresponding cables.
8. Close the unit in reverse order of opening.



#### 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).



## 11.2. Replacing the Filter Mat

The filter mat is inserted in the filter mat holder at the front side Clinic DPC 210 behind the air openings (Fig. 4, pos. 8). For replacing the filter mat is accessible from the bottom side of the system (refer to Fig. 16 and Fig. 17). 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 replace (no washing) the filter mat as often as necessary.



The filter mat must be replaced while the system is powered-off.



Fig. 16: Access to the filter mat (on the system bottom side)

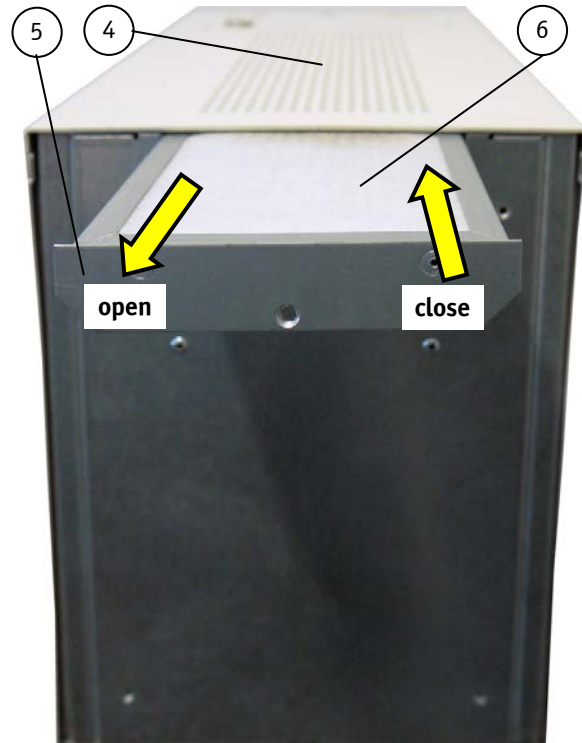


Fig. 17: Removing the filter mat holder

### Legend for Fig. 16 and Fig. 17:

- |   |   |
|---|---|
| 1 Bottom side of the Clinic DPC 210       | 4 Front side of the Clinic DPC 210 with air intake openings |
| 2 Filter mat holder                       | 5 Opened filter mat holder                                  |
| 3 Screw that secure the filter mat holder | 6 Filter mat  |

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

1. Close all applications. Shut down the system properly and disconnect the connection to the power source. Disconnect all peripherals.
2. In order to replace the filter mat the Client DPC 210 should lay on a flat, clean surface with the bottom side facing to you. Make sure that the system is protected against scratching and damage.
3. Remove the screw (Fig. 16, pos. 3) that secure the filter mat holder with filter mat to the chassis. Retain the screw for later use.
4. Pull out the filter mat holder (Fig. 16, pos. 2) into the marked direction (Fig. 17).

5. Remove the dirty filter mat (Fig. 17, pos. 6) from the filter mat holder.
6. Replace the filter mat with a new one into the filter mat holder. Make sure that the adhesive side of the filter mat is facing to the fans (refer to Fig. 18 and Fig. 21). Insert filter mat holder (Fig. 17) into the system.
7. Secure the filter mat holders to the chassis by tightening the retained screw in step 1.



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



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

Part number of the filter mat: 1037-0090



Fig. 18: Filtermat holder with inserted filter mat



Fig. 19: Filter mat holder without filter mat



Fig. 20: Filter mat



Fig. 21: How to insert the filter mat into the holder

## 12. Main Specifications

<b>Clinic DPC 210</b>	
<b>Installed Board</b>	KTQ67/Flex-Medical
<b>CPUs</b>	Intel® Core i3-3220, 3.3GHz, dual Core, 55W Intel® Core i5-3550S, 3.0GHz, quad Core, 65W Intel® Core i7-3770, 3.5GHz, quad Core, 77W
<b>Memory</b>	up to 32 GB, DDR3 DIMM 240pin socket
<b>Interfaces</b>	At the front side: 2x USB 2.0  At the rear side: 4x USB 2.0 2x LAN 10/100/1000 Mbps, (galvanic isolated) complying IEC 60601 1x DVI-D/VGA 1x DVI-I 2x serial port (RS232)  Optional on the rear side: 1x serial port (RS232) on a slot bracket
<b>Drive</b>	Front accessible: 1x 5 ¼ " DVD-RW (optical drive)  Internal: 1x 3.5" SATA HDD (6Gb/s)
<b>Controls and Indicators</b>	At the front side: Power button with integrated LED  At the rear side: 1x HDD LED (yellow) 1x PSU power switch 1x PSU power LED (green)
<b>Onboard available expansion connectors for expansion cards</b>	1x PCIe x16 2x PCI (32bit) 1x PXIe x4
<b>Free expansion slots on the rear side of the system</b>	3x for expansion cards slot brackets
<b>Lithium Batterie</b>	CR2032; 3.0 V; 0.22Ah CR1/2AA-LF, type 6127, 3V, 950 mAh
<b>Rated Voltage Range</b>	100-240 VAC, 1.8 A, 400 W

### 12.1. Electrical Specifications

The electrical specification you can read off on the type label of your Clinic DPC 210 platform.

100-240 VAC, 1.8 A, 50/60 Hz, 400 Watt

### 12.2. Mechanical Specifications

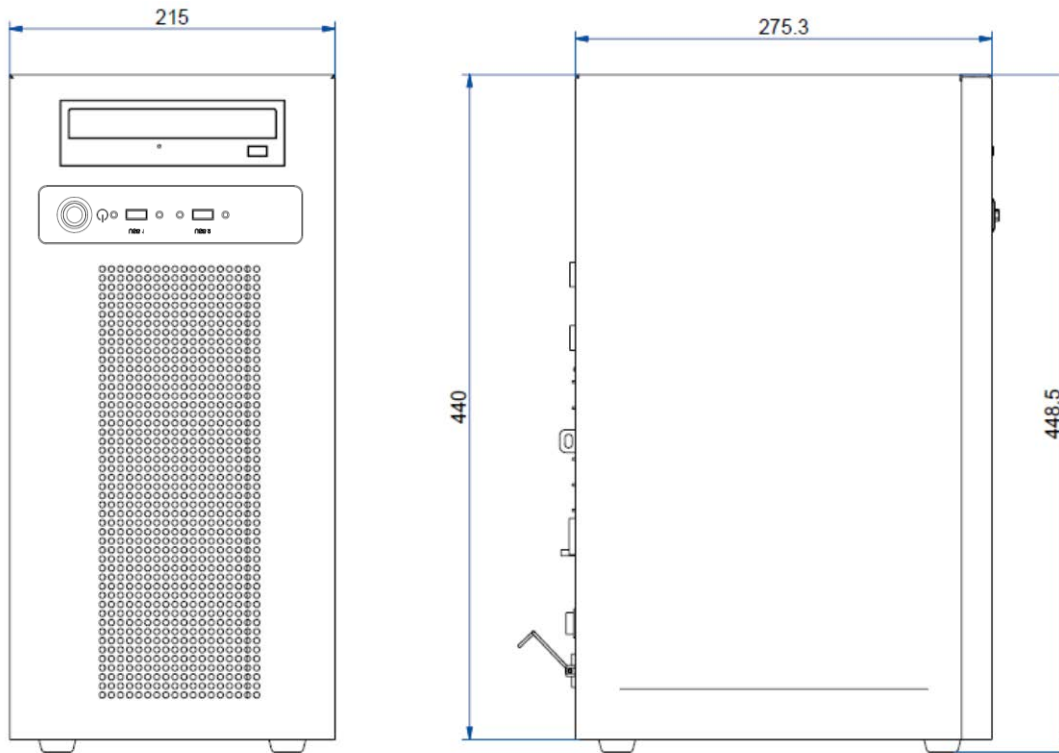


Fig. 22: mechanical dimensions

Dimension	Clinic DPC 210
Height	448.5 mm (17.66")
Width	215 mm (8.46")
Depth	275.3 mm (10.84")
Weight	Approx. 14.3 kg (31.53 lbs.)
Chassis	Sheet metal

### 12.3. Environmental Specifications

<b>Operating temperature / relative humidity</b>	5 ... +40 °C / 15-95 % @ 40 °C non condensing (41... 158 °F / 15-95 % @ 40 °C non condensing)
<b>Storage / transit temp. / relative humidity</b>	-40 ... +70 °C / 5-95 % @ 40 °C non condensing (-40 ... 158 °F / 5-95 %) @ 40 °C non condensing
<b>Operating altitude</b>	Clearance and creepage distances suitable up to 3000 m (9,842 ft)
<b>Protection Class</b>	Front IP20

### 12.4. CE Directives and Standards

CE Directives	
<b>Electrical Safety</b>	General Product Safety Directive (GPSD) 2001/95/EC Low Voltage Directive (LVD) 2006/95/EC
<b>ElectroMagnetic Compatibility (EMC)</b>	EMC Directive 2004/108/EC
<b>RoHS II Directives</b>	2011/65/EU

Electrical Safety	Harmonized Standards
<b>EUROPE</b>	Information technology equipment - Safety - Part 1: General requirements EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011
<b>U.S.A. / KANADA</b>	UL60950-1:2007 / CSA C22.2- No. 60950-1-7:2007
<b>CB Scheme</b>	CB Certification (for Clinic DPC 210 with KTQ67/Flex-Medical)

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

## 13. Standard Interfaces – Pin Assignments

Low-active signals are indicated by a minus sign.


### 13.1.1. Serial Interface COM (RS232)

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

### 13.1.2. USB Port

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

## 13.1.3. DVI-I (Single Link) Interface

Pin	Signal Name	Description	DVI-I Connector (female)
1	TMDS2-	Differential TMDS Data 2-	
2	TMDS2+	Differential TMDS Data 2+	
3	GND	TMDS 2/4 Shield	
4-5	NC		
6	DVI_SCL	DDC EDID data clock	
7	DVI_SDA	DDC EDID data	
8	DVI_VS	Analog VSYNC	
9	TMDS1-	Differential TMDS Data 1-	
10	TMDS1+	Differential TMDS Data 1+	
11	GND	TMDS Shield	
12-13	NC		
14	DVI_5V	5 V / 55 mA Power Supply	
15	GND	Ground	
16	DISPDET	Hot Plug Detection	
17	TMDS0-	Differential TMDS Data 0-	
18	TMDS0+	Differential TMDS Data 0+	
19	GND	TMDS Shield	
20-21	NC		
22	GND	TMDS Shield	
23	TMDSSCL+	Differential TMDS Clock+	
24	TMDSSCL-	Differential TMDS Clock -	
C1	DVI_R	Analog red	
C2	DVI_G	Analog green	
C3	DVI_B	Analog blue	
C4	DVI_HS	Analog HSYNC	
C5-C6	GND	Ground	

**Note:** The +5V supply is fused.

## 13.1.4. DVI-D (Single Link)

The DVI-D connector is based on stacked DVI-I connector. It is supporting only digital signals (single channel).

Pin	Signal Name	Description	DVI-D Connector (female)
1	TMDS2-	Differential TMDS Data 2-	
2	TMDS2+	Differential TMDS Data 2+	
3	GND	TMDS Shield	
4-5	NC		
6	DVI_SCL	DDC EDID data clock	
7	DVI_SDA	DDC EDID data	
8	NC		
9	TMDS1-	Differential TMDS Data 1-	
10	TMDS1+	Differential TMDS Data 1+	
11	GND	TMDS Shield	
12-13	NC		
14	DVI_5V	5 V / 55 mA Power Supply	
15	GND	Ground	
16	DISPDET	Hot Plug Detection	
17	TMDS0-	Differential TMDS Data 0-	
18	TMDS0+	Differential TMDS Data 0+	
19	GND	TMDS Shield	
20-21	NC		
22	GND	TMDS Shield	
23	TMDSCLK+	Differential TMDS Clock+	
24	TMDSCLK-	Differential TMDS Clock -	

**Note:** The +5V supply is fused.



## 14. Technical Support

For technical assistance, please contact our Technical Support department via:

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

web: <http://www.kontron.com/support-and-services>.

Ensure that your request contains the following information:

- unit part number (PN),
- serial number (SN), which can be found on the type label,
- a short description of the faulty behaviour of your system.

For information about Kontron products and services, please visit [www.kontron.com](http://www.kontron.com).

### 14.1. Returning Defective Merchandise

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

1. Download the corresponding form for returning a device with an RMA No. [RMA (Return of Material Authorization)] from our website <http://www.kontron.com/support-and-services/RMA> Information; contact our Customer department to obtain an RMA No.  
e-mail: [support@kontron.com](mailto:support@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 packaging.
  - Enclose a copy of the RMA form with the consignment.

#### Corporate Offices

Europe, Middle East & Africa	North America	Asia Pacific
Lise-Meitner-Str. 3-5 86156 Augsburg Germany Tel.: +49 (0) 821/0 Fax: +49 (0) 821/111 <a href="mailto:info@kontron.com">info@kontron.com</a>	14118 Stowe Drive Poway, CA 92064-7147 USA Tel.: +1 888 294 4558 Fax: +1 858 677 0898 <a href="mailto:info@us.kontron.com">info@us.kontron.com</a>	17 Building, Block #1, ABP. 188 Southern West 4th Ring Beijing 100070, P.R.China Tel.: + 86 10 63751188 Fax: + 86 10 83682438 <a href="mailto:info@us.kontron.cn">info@us.kontron.cn</a>