Clinic DPC 210

User’s Guide (Version 1.0)
1059-4230
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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.

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## 2.1. Symbols used in this Manual

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Warning Symbol" /></td>
<td>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.</td>
</tr>
<tr>
<td><img src="image" alt="Caution Symbol" /></td>
<td>This symbol indicates that the product or parts thereof may be damaged if the corresponding warning notices are not observed.</td>
</tr>
<tr>
<td><img src="image" alt="General Symbol" /></td>
<td>This symbol indicates general information about the product and the user manual.</td>
</tr>
<tr>
<td><img src="image" alt="Detail Symbol" /></td>
<td>This symbol indicates detail information about the specific product configuration.</td>
</tr>
<tr>
<td><img src="image" alt="Tips Symbol" /></td>
<td>This symbol precedes helpful hints and tips for daily use.</td>
</tr>
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</table>
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 functioning
In this case the device must be switched off and it must be ensured that the device can no longer be operated.
4. General Safety Instructions for IT Equipment

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. General Safety Instructions for IT Equipment

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”.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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).</td>
</tr>
</tbody>
</table>
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 rage 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](image-url)
8. Front Side

The system is available as tower version.

Fig. 4: Front side

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

1. U-shaped device cover of the Clinic DPC 210
2. Slot bracket with serial interface (RS232)
3. Air exhaust openings
4. HDD/SSD activity LED
5. Protective Earth stud (PE)
6. PE symbol
7. Fan of the Power Supply Unit (PSU)
8. Torx screws to secure the device cover
9. “On/Off” switch of the PSU
10. Power LED of the PSU
11. PSU AC input connector with retaining clip
12. Type label
13. Interfaces of the motherboard
14. 3x strain relief
15. Free expansion card slots
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 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/adapter 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 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 if 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
2. Removable filter mat holder
3. 4x threaded holes for device feet
4. Screw that secure the removable filter mat holder (M3x6 Torx countersunk screw)
5. EMC gaskets (seals), (1x 180 mm, 2x 420 mm)
6. Bottom side of the chassis
7. Air intake openings on the front side (behind them are located the system fans and the filter mat holder)
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.

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

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.
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).
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.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td>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).</td>
</tr>
</tbody>
</table>
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.

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
## 12. Main Specifications

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

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]

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Clinic DPC 210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>448.5 mm (17.66&quot;)</td>
</tr>
<tr>
<td>Width</td>
<td>215 mm (8.46&quot;)</td>
</tr>
<tr>
<td>Depth</td>
<td>275.3 mm (10.84&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 14.3 kg (31.53 lbs.)</td>
</tr>
<tr>
<td>Chassis</td>
<td>Sheet metal</td>
</tr>
</tbody>
</table>
12.3. Environmental Specifications

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

12.4. CE Directives and Standards

<table>
<thead>
<tr>
<th>CE Directives</th>
<th>Harmonized Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Safety</td>
<td>General Product Safety Directive (GPSD) 2001/95/EC</td>
</tr>
<tr>
<td></td>
<td>Low Voltage Directive (LVD) 2006/95/EC</td>
</tr>
<tr>
<td>ElectroMagnetic Compatibility (EMC)</td>
<td>EMC Directive 2004/108/EC</td>
</tr>
<tr>
<td>RoHS II Directives</td>
<td>2011/65/EU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Safety</th>
<th>Harmonized Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB Scheme</td>
<td>CB Certification (for Clinic DPC 210 with KTQ67/Flex-Medical)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMC</th>
<th>Harmonized Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>Generic emission standard for industrial environments (Emission): EN 61000-6-4:2007</td>
</tr>
<tr>
<td></td>
<td>Generic standards - Immunity for industrial environments (Immunity): EN 61000-6-2:2005</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>FCC 47 CFR Part 15, Class A</td>
</tr>
<tr>
<td>KANADA</td>
<td>ICES-003, Class A</td>
</tr>
</tbody>
</table>
## 13. Standard Interfaces – Pin Assignments

Low-active signals are indicated by a minus sign.

### 13.1.1. Serial Interface COM (RS232)

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

### 13.1.2. USB Port

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Name</th>
<th>4-pin USB Connector Type A Version 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VCC</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Data-</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Data+</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td></td>
</tr>
</tbody>
</table>
### 13.1.3. DVI-I (Single Link) Interface

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

**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).

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

**Note:** The +5V supply is fused.
14. Technical Support

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

e-mail: support@kontron.com or

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.

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

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

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