» Kontron User's Guide «



CB 751

User's Guide (Version 1.00)
0-0096-4617

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3. Introduction

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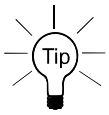
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Germany

3.1. 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.

4. Important Instructions

This manual provides important information required for the proper operation of the CB 751 platform!

This chapter contains instructions which must be observed when working with the CB 751 platform.

4.1. Warranty Note

Due to their limited service life, parts which by their nature are subject to a particularly high degree of wear (wearing parts) are excluded from the warranty beyond that provided by law. This applies to batteries, for example.

4.2. Exclusion of Accident Liability Obligation

Kontron Embedded Computers 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.

4.3. Liability Limitation / Exemption from the Warranty Obligation

In the event of damage to the device caused by failure to observe the included document "General Safety Instructions for IT Equipment", the hints in this manual or eventually the warning signs label on the device, Kontron Embedded Computers shall not be required to honor the warranty even during the warranty period and shall be exempted from the statutory accident liability obligation.

5. Safety Instructions



Please consider the included "General Safety Instructions for IT Equipment".



5.1. 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.

5.1.1. 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 electrostatically sensitive components by their edge or by their casing.
4. Avoid contact with pins, leads, or circuitry.
5. Turn off power and input signals before inserting and removing connectors or connecting test equipment.
6. Keep work area free of non-conductive materials such as ordinary plastic assembly aids and styrofoam.
7. Use field service tools such as cutters, screwdrivers, and vacuum cleaners which are conductive.
8. Always place drives and boards PCB-assembly-side down on the foam.

5.2. Instructions for the Lithium Battery

The installed motherboard is equipped with a Lithium battery. The Lithium battery may only be replaced by the manufacturer.



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 recognised.



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

5.3. FCC Statement

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.

(English): This Class A digital apparatus complies with the Canadian ICES-003.

(French): Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

5.4. 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.

6. Scope of Delivery

- ❏ CB 751-A/-B platform (corresponding to the ordered system configuration)
- ❏ Rubber feet (self-adhesive)
- ❏ DC power cable **(only for CB751-A system configurations)**
- ❏ General Safety Instructions for IT Equipment

Optional Parts

- ❏ AC/DC Adapter (for CB751-A/-B system configurations)
- ❏ Brackets for wall or table mounting
- ❏ ADD2-DVI-Dual PCIe card
- ❏ Mini-PCIe WLAN card (only system configurations with 1.06 GHz CPU)
- ❏ WiFi antenna (only system configurations with 1.06 GHz CPU)
- ❏ Easy RS422/485

The CB 751 can only be factory-equipped with a Mini PCI express WLAN card (only for system configurations with 1.06 GHz CPU) and/or expanded with an ADD2-DVI-Dual PCIe card.

6.1. Type Label and Product Identification

The type label (product designation, serial number) and the inspection status label of your CB 751 system are located on the bottom side of the device.



Fig. 1: Front view



Fig. 2: Rear view

Product Designation	Product Identification of your System
CB 751-A	CB 751-A is designed for connection to a DC main power supply via the included DC power cord or to an AC main power supply via the optional external AC/DC adapter.
CB 751-B	CB 751-B (without EMV-Filter) is designed exclusively for the connection to an AC main power supply via the optional external AC/DC adapter.

7. Product Description

With CB 751, Kontron launches a new line of computers: the CB series. CB 751 is equipped with a 986LCD-M/mITX BGA motherboard (1.06 GHz or 1.66GHz). The hardware system configuration and the robust construction with excellent mechanical stability of the CB 751 platform offer the superior qualities of a computer designed for operation in harsh industrial environment. The standard configuration of the CB 751 can be equipped with an internal 2.5" HDD (SATA or SSD) and/or a CompactFlash™ card type I or II (see chapter 7.5 "Storage Media").
The CB 751 is a fanless system with a compact aluminum chassis with cooling fins. The rated voltage of the mains can be read on the type label. The type label is located at the bottom side of the device. The CB 751 can be factory-equipped with a Mini PCI express WLAN card (only for system configurations with 1.06 GHz CPU) and/or expanded with an ADD2-DVI-Dual PCIe card.



Fig. 3: Bottom view



Fig. 4: Right view



Fig. 5: Front side



Fig. 6: Left view



Fig. 7: Top view



Fig. 8: Rear view

☞ The device may be operated in all positions except with the upper side facing down.

When switching on the CB 751, make sure that the air openings on the front side (Fig. 9, pos. 1) and the rear side (Fig. 12, pos. 2) and the cooling fins of the U-shaped chassis are not obstructed (covered) by any objects. To provide sufficient heat dissipation for the cooling of the device, do not cover the cooling fins of the CB 751. Do not place any objects on the device.

7.1. Front View



Fig. 9: CB 751 – interfaces at the front side

1 Air openings at the front side
2 Power button with integrated Power LED
3 Ring-shaped Power LED
4 HDD activity LED
5 Rubber feet
6 DC-IN power connector
7 DVI-D (Single Link) interface (but with DVI-I connector)
8 Interfaces of the installed motherboard

7.1.1. Controls and Indicators

Power Button	Press this button (Fig. 9, pos. 2) to switch the system on and off.
Power LED (blue)	The ring-shaped LED that is integrated into the power button (Fig. 9, pos. 3) lights up blue when the system is switched on by pressing the power button. **Requirement:** Die CB 751 has to be connected to a corresponding main power supply (AC) using the AC/DC adapter.
HDD LED (orange)	This LED (Fig. 9, pos. 4) lights up during HDD or CF activity.

Even when the system is turned off via the power button there is still a standby-voltage of 5 VSb on the motherboard.

Switching the system off using the power button does not disconnect the device from the mains. The unit is only completely disconnected from the mains, 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.

7.1.2. DC-IN Power Connector

The 4-pin power connector (Fig. 9, pos. 6) provides the power connection of the CB 751 to the appropriate main power supply. Please pay attention to chapter 9.1 „Connecting to DC or AC Main Power Supply"

- **DC power supply:** using the DC power cord (included).
- **AC power supply:** using the optional AC/DC adapter.



Fig. 10: DC-IN connector

7.1.3. Optional DVI-D Interface (Single Link)

This interface (Fig. 9, pos. 7) is the external DVI-D connector of the PCIe ADD2 Dual DVI add-on board.
The DVI interface only supports digital data transfer with maximum resolutions of 1600 x 1200 (UXGA).
Both a DVI-D cable and a DVI-I cable can be used.

Please note that this interface (DVI-I connector) only supports digital data transfer (DVI-D).

A detailed description of this interface can be found in the documentation of the PCIe ADD2 Dual DVI add-on board.
The documentation of the add-on board can be downloaded from our web site www.kontron.com by selecting the product.

7.1.4. External Accessible Interfaces of the 986LCD-M/mITX Motherboard at the Front Side

A detailed description of the interfaces can be found in the manual of the 986LCD-M/mITX motherboard. The manual of the motherboard can be downloaded from our web site www.kontron.com by selecting the product.



Fig. 11: External interfaces of the 986LCD-M/mITX motherboard

1	Serial port (COM1; RS232)	5	3x LAN ports (RJ45) (10/100/1000Mbps)
2	PS/2 keyboard port (purple)	6	Audio connectors
3	PS/2 mouse port (green)	7	4x USB 2.0 ports
4	IEEE 1394a port (FireWire)	8	VGA port

7.1.4.1. Serial Port (COM1)

This port (Fig. 11, pos. 1) consists of a 9-pin, RS232 configured D-SUB connector that allows the connection of a serial peripheral.

7.1.4.2. VGA Port

This port (Fig. 11, pos. 8) consists of a 15-pin D-SUB connector. You can connect an analog monitor to this connector.

7.1.4.3. PS/2 Mouse Port

You can connect a PS/2-compatible mouse to the green Mini-DIN connector (Fig. 11, pos. 3).

7.1.4.4. PS/2 Keyboard Port

You can connect a PS/2-compatible keyboard to the purple Mini-DIN connector (Fig. 11, pos. 2).

7.1.4.5. IEEE 1394 Port (FireWire)

The IEEE 1394 port (Fig. 11, pos. 4) consists of a 6-pin connector. Various IEEE 1394a-compatible peripherals can be connected to this port.

7.1.4.6. USB 2.0 Ports

You can connect various USB devices to these four USB 2.0 interface connectors (Fig. 11, pos. 7).

7.1.4.7. LAN Ports

These ports (Fig. 11, pos. 5) consist of RJ45 connectors with integrated LEDs and support a transfer rate of 10/100/1000Mbps.

Connector (RJ45)	LED	LED Color	Meaning/Function
LAN 1	Left	Green On	100MHz Link is established
		Flashing Green	100MHz Activity, data transfer
		Off	No Link
	Right	Yellow On	1GHz Link is established
		Flashing Yellow	1GHz Activity, data transfer
		Off	No link

Connector (dual RJ45)	LED	LED Color	Meaning/Function
LAN 2 (upper)	Right	Green/Yellow	100MHz/1GHz Link is established
		Flashing Green/Yellow	100MHz/1GHz Activity, data transfer
		Off	No link
LAN 3 (bottom)	Left	Green/Yellow	100MHz/1GHz link is established
		Flashing Green/Yellow	100MHz/1GHz Activity, data transfer
		Off	No Link

7.1.4.8. Audio Connectors

For 2-Channel Audio Output:

Color of the Audio Connector (3.5 mm audio jacks)	2-Channel	Connection available for
Blue	Line-In	one stereo signal source
Green	Line-Out	one pair of speakers/headphones
Pink	Mic-In	one microphone

For 4- , 6- , or 8-Channel Audio Output:

Color of the Audio Connector	4-Channel	6-Channel	8-Channel
Blue	Line-In	Line-In	Line-In
Green	Front speaker out	Front speaker out	Front speaker out
Pink	Mic-In	Mic-In	Mic-In
Orange	-	Center/Subwoofer	Center/Subwoofer
Black	Rear speaker out	Rear speaker out	Rear speaker out
Grey	-	-	Side speaker out

7.2. Rear Side



Fig. 12: CB 751 - rear side without WiFi antenna



Fig. 13: CB 751 (Intel® Celeron® M 1.06GHz) Rear side with WiFi antenna terminal (RP-SMA screwed connection)

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

1 Covered cutout (only systems ordered without WiFi)

2 Air openings at the rear side

3 COM 3 RS232 interface (configurable)

4 Rubber feet

5 COM 2 RS232 interface (configurable)

6 2x USB 2.0 port

7 COM 4 RS232 interface (configurable)

8 Reverse (RP) SMA connector for WLAN antenna (Mini PCIe WLAN card and antenna are optional)

7.2.1. USB Ports

CB 751 has two USB2.0 ports at the rear side of the chassis (Fig. 12, pos. 6). You can connect various USB devices to these connectors.

7.2.2. RS422/RS485 Configurable Serial Ports (COM2, COM3 and COM4)

These three serial ports (Fig. 12, pos. 3, pos. 5 and pos. 7) are factory-configured as RS232 and can be ordered custom configured as RS422 and/or RS485.

For a custom configuration of these ports as RS422 and/or RS485, please note the "EASY 485/422" documentation "Quick Reference Guide" on our web site www.kontron.com.

The customer specific configuration of the serial ports of the CB 751 as RS422 and/or RS485 can only be performed by the manufacturer.

7.2.3. WiFi/WLAN (Option)

Depending on the ordered system configuration, the CB 751 platform (only version with Intel® Celeron® M 1.06GHz) can be equipped with WiFi hardware. If you have ordered a system configuration including WLAN, at the rear side a Reverse (RP) SMA-connector is installed (Fig. 13, pos.8) for screwing on the provided WLAN antenna.

7.2.3.1. Antenna

During the installation of the CB 751 the provided system antenna will be screwed on to the RP SMA connector (Fig. 13, pos.8). The antenna can be tilt and rotated in the appropriate position to get the optimal transmission and reception quality.

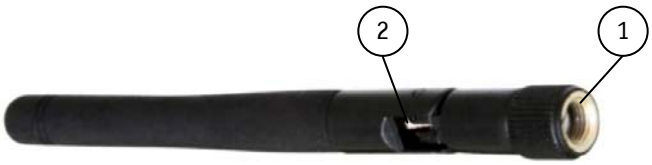


Fig. 14: WLAN (WiFi) antenna

1 Reverse (RP) SMA antenna connector
2 Hinge for positioning the antenna

7.3. Chassis with Cooling Fins

The applied "Heat Pipe" cooling method provides adequate cooling of the device during operation and performs a one-way thermal transfer to the chassis. All three sides of the compact U-shaped aluminum chassis (left, upper and right side) are covered with cooling fins. The cooling fins provide heat dissipation during operation.

☞ To provide sufficient heat dissipation for the cooling of the CB 751 platform, never cover the cooling fins of the chassis. Do not place any objects on the device.



Fig. 15: Right side of the U-shaped chassis

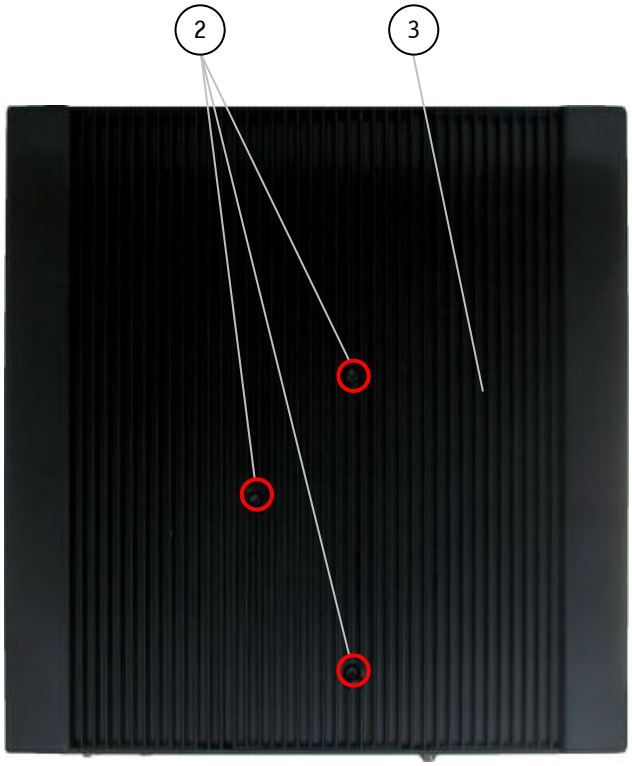


Fig. 16: Top side of the U-shaped chassis



Fig. 17: Left side of the U-shaped chassis

1 Cooling fins of the U-shaped chassis on the right side

2 Torx screws that fix the internal heat transfer plate (with integrated heat pipe) to the chassis.

3 Cooling fins of the U-shaped chassis on the top side

4 Cooling fins of the U-shaped chassis on the left side

☞ Do not loosen or remove the three torx screws (Fig. 16, pos. 2) that fix the internal heat transfer plate (with integrated heat pipe) to the chassis.

7.4. Bottom Side

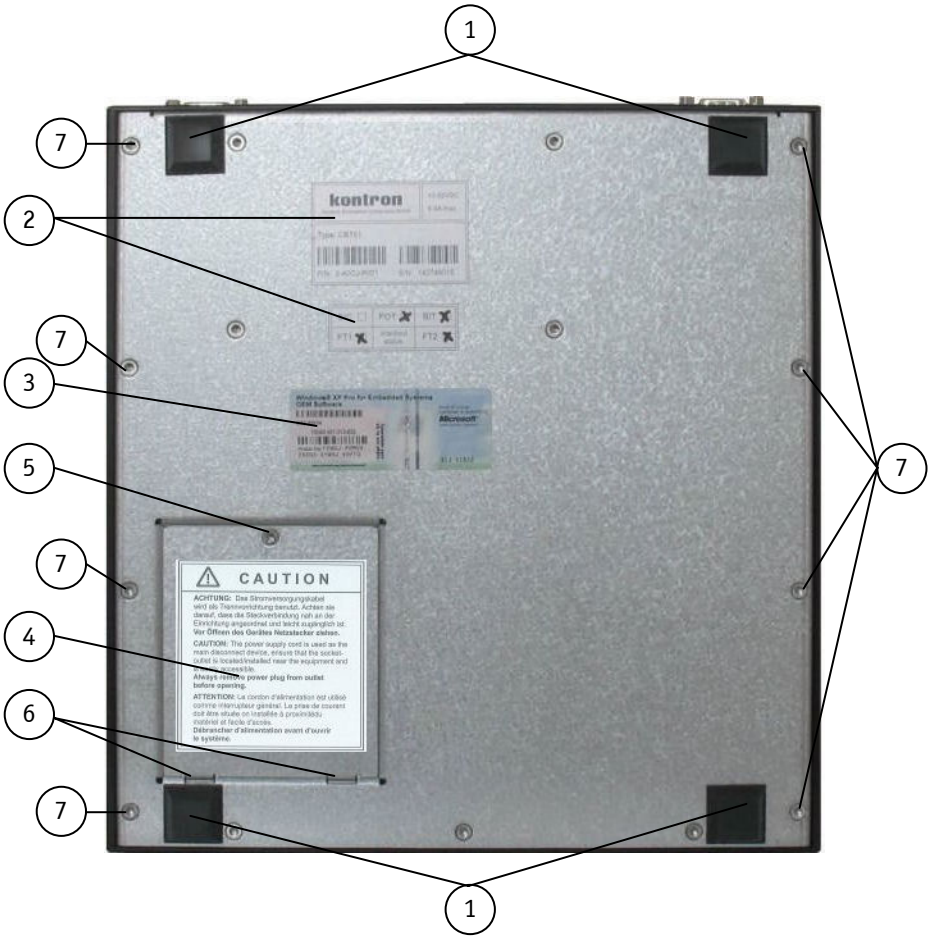


Fig. 18: Bottom side with CF slot access cover

1 Rubber feet of the desktop version

2 Kontron type label and inspection status label

3 License Sticker

4 CF slot access cover with safety note

5 Countersunk screw M3x6 DIN7991 A2 torx for mounting of the cover

6 Laces of the cover

7 Torx screws for attachment of the chassis and the optional brackets (for wall or table mounting)



During operation, the CF slot access cover must be closed and secured with the torx screw.

7.5. Storage Media

The standard configuration of the CB 751 system may be equipped with an internal 2.5" SATA-/SSD HDD (not accessible) and/or a CompactFlash™ card (IDE) which can be accessed from the bottom side via a removable cover (see also Fig. 18, pos. 4).

7.6. DC Power Cord (only for CB 751-A)

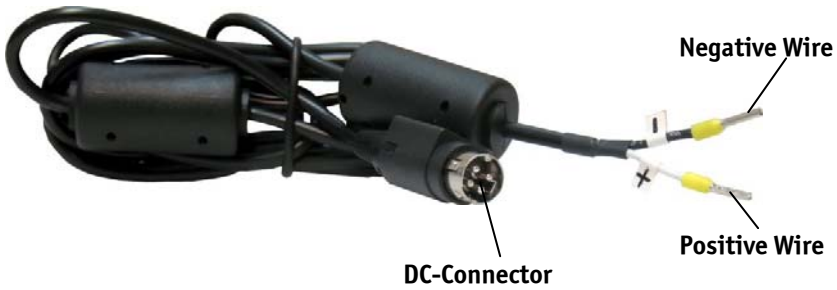


Fig. 19: DC power cable

7.7. AC/DC Adapter (Option)

The external AC/DC adapter is provided with an AC power cord (EU version).



Fig. 20: AC/DC adapter



Fig. 21: AC power cord

AC/DC Adapter	
AC Input	**DC Output**
100-240 V 1.5 A 50-60 Hz	24 VDC 3.75 A

8. Assembly, Disassembly

8.1. Attaching the Rubber Feet

The rubber feet can be used for the desktop version of the system.

To attach the rubber feet please follow these steps:

1. Switch off the device and disconnect it from the main power supply.
2. Make sure that all cards are secured into the unit and that the system cover is installed and secured.
3. Turn the system upside down and place it on an even surface.
4. Remove the protective foil from rubber feet.
5. Attach the self adhesive rubber feet to the bottom side of the chassis.

8.2. Handling Internal Components

This chapter contains important information on working safely with internal components. Please follow these instructions when handling cards.



When installing/removing CF cards observe the corresponding instructions in the provided document "General Safety Instructions 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.



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

8.2.1. Inserting and Removing the CF Card

The on-board CompactFlash™ slot allows the operation of a CompactFlash™ card type I or II. The access cover of the CompactFlash™ slot is located at the bottom side of your CB 751 platform.

Before opening the CF card access cover to insert or to remove a CompactFlash™ card, the system must be switched off and disconnected from the main power supply. Also disconnect peripheral devices from the CB751. Pay attention to the warning on CF slot access cover!



Fig. 22: Bottom side with CF slot access cover



Fig. 23: Safety note on the CF slot access cover

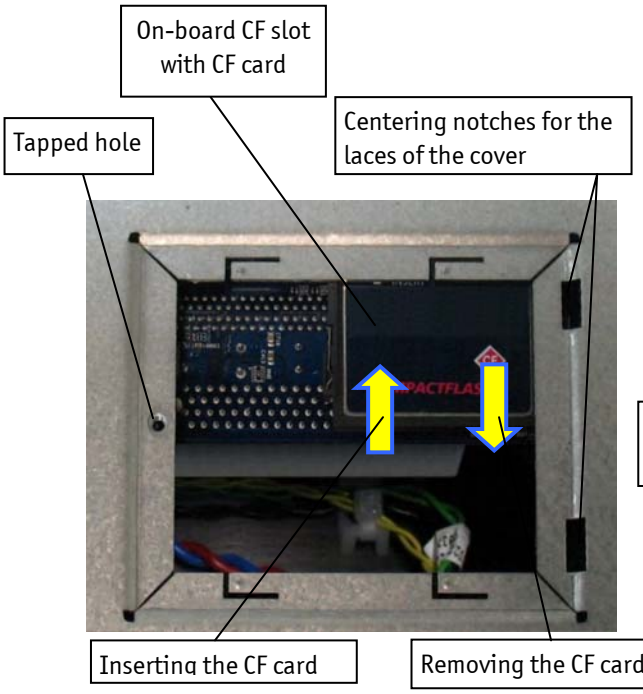


Fig. 24: Inserting/Removing the CF card: CB751-B

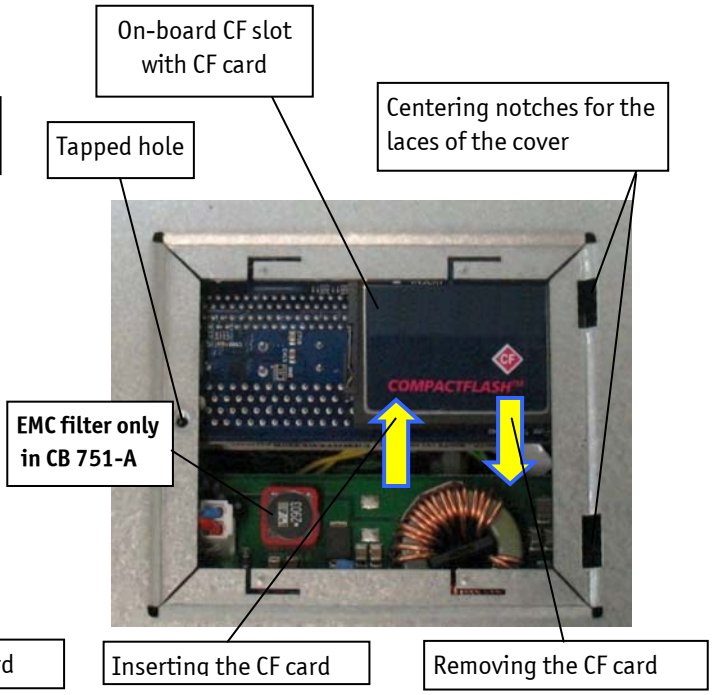


Fig. 25: Inserting/Removing the CF card: CB751-A

8.2.1.1. Inserting the External Accessible CompactFlash™ Card

To install the CompactFlash™ card, please perform the following steps:

1. Switch off the system and disconnect it from the AC or DC main power supply.
2. Loosen the torx screw which secures the CF slot access cover to the chassis. Use a TX10 screwdriver. Put the screw aside.
3. Lift up the CF slot access cover.
4. Insert the CompactFlash™ card with the connectors facing forward into the CF slot.
5. Press the CompactFlash™ card carefully into the CF card slot as far as it will go.
6. Insert the laces of the CF card access cover (see Fig. 18, pos. 6) into the centering notches of the chassis (see Fig. 24 and Fig. 25). Secure the CF slot access cover with the screw removed in step 2.

☞ Please note that only the M3x6 DIN7991 A2 torx screw (removed in step 2) may be used to secure the CF slot access cover. Longer screws could damage the electronics of the system.

8.2.1.2. Removing the External Accessible CompactFlash™ Card

To remove the CompactFlash™ card, please perform the following steps:

1. Switch off the system and disconnect it from the AC or DC main power supply.
2. Loosen the torx screw which secures the CF slot access cover to the chassis. Use a TX10 screwdriver. Put the screw aside.
3. Lift up the CF slot access cover.
4. Push the CompactFlash™ card in the direction of arrow marked with ""Removing" (see Fig. 24 and Fig. 25) out of the CF slot and take it out of the device.
5. Insert the laces of the CF card access cover (see Fig. 18, pos. 6) in into the centering notches of the chassis (see Fig. 24 and Fig. 25). Secure the CF slot access cover with the screw removed in step 2.

☞ Please note that only the M3x6 DIN7991 A2 torx screw (removed in step 2) may be used to secure the CF slot access cover. Longer screws could damage the electronics of the system.

☞ During operation the CF slot access cover must be attached and secured with the torx screw.

9. Starting Up

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

9.1. Connecting to DC or AC Main Power Supply

The DC input connector is located on the front side of the CB 751 system.

☞ CB 751-A may be connected via the provided DC power cord to a DC main power supply (see Fig. 26) as well as to an AC main power supply (see Fig. 28) using the optional AC/DC adapter.

☞ CB 751-B should only be connected to an AC main power supply (see Fig. 28) using the optional AC/DC adapter.
For EMC reasons it is not allowed to connect the CB 751-B via a DC power cord to a DC main power supply (see Fig. 27).

9.1.1. Connecting the CB 751-A to a DC Main Power Supply

☞ Only CB 751-A should be connected via the provided DC power cord to a DC main power supply.

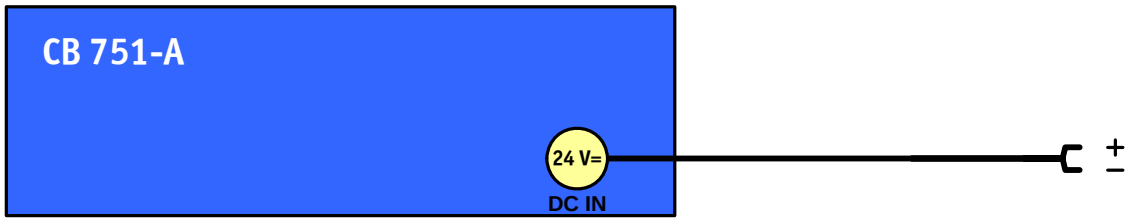


Fig. 26: CB 751-A with DC power connection

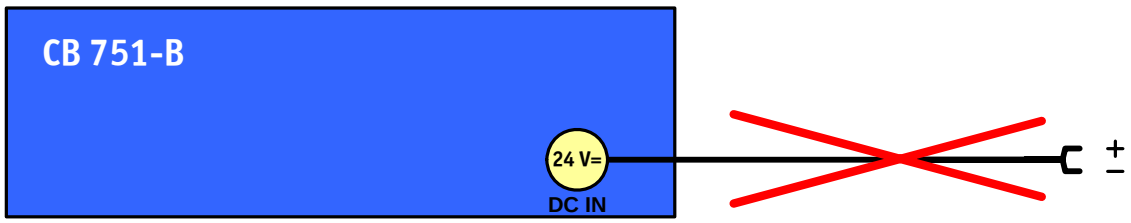


Fig. 27: CB 751-B must not be connected to a DC main power supply

To connect the CB 751-A platform to a corresponding DC main power supply, please perform the following steps:

1. Connect the 4-pin connector of the DC power cord to the DC input connector of the CB 751-A-Plattform an. The DC input connector of the CB 751-A platform is located on the front side and is marked "DC IN".
2. The DC main power supply must be switched off via a 2-pole disconnect device to make sure that no voltage is present at the terminals during the connecting procedure.
3. Connect the other end of the DC power cord to the connections of the 24V DC main power supply. Pay attention to the polarity of the connections. The wires (positive and negative) of the DC power cord are marked plus (+) and minus (-) (refer to Fig. 19).

4. Switch on the DC main power supply via the disconnect device.



It must be ensured that the system can be powered ON and OFF via a readily accessible two-pole disconnect device that shall be incorporated in the building installation wiring (e.g. overload protection switch).

CB-751-A is only completely isolated from the mains by disconnecting the DC power cord from the mains or from the device. For this reason, ensure that there is easy access to the power cord, including its plugs

9.1.2. Connecting the CB 751-A/-B to an AC Main Power Supply

CB 751-A and CB 751-B can be connected via the AC/DC adapter to an AC main power supply.



CB 751-B may only be connected via the optional AC/DC adapter to an AC main power supply.



The plug of the AC power cord meets the requirements of the country where you have purchased your CB 751-A/-B platform. Make sure that your AC power cord has the approval of the country you want to use it.

The AC power cord is also the disconnect device for the system. For this reason, ensure that there is easy access to the mains outlet of the main power supply and that it is located close to the system.

The AC/DC adapter must be placed freely and must not be covered.

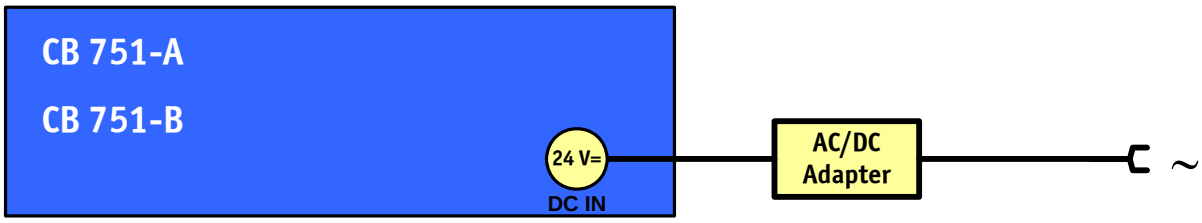


Fig. 28: Connecting the CB 751-A/-B to an AC main power supply via the AC/DC adapter

To connect the CB 751-A/-B platform to a corresponding AC main power supply, please perform the following steps:

1. Connect the 4-pin connector of the AC/DC adapter to the DC input connector of the CB 751-A/-B platform. The DC input connector of the CB 751-A/-B platform is located on the front side and is marked "DC IN".
2. Connect the AC power cord to the AC/DC adapter.
3. Connect the other end of the AC power cord to a corresponding mains outlet (for protection class I devices).



Make sure that the AC main power supply is properly grounded and that the AC power cord is intact and undamaged. Ungrounded power supplies are not allowed.

9.2. Operating System and Hardware Component Drivers

Your system can be supplied either with or without a pre-installed operating system installed.

If you have ordered your CB 751 with a pre-installed operating system, all drivers are installed in accordance with the system configuration ordered (optional hardware components). Your system is fully operational when you switch it on for the first time.

If you have ordered CB 751 without a pre-installed operating system, you will need to install the operating system and the appropriate drivers for the system configuration you have ordered (optional hardware components) yourself.



You can download the relevant drivers for the installed hardware from our web site at www.kontron.com by selecting the product.

Pay attention to the manufacturer specifications of the operating system and the integrated hardware components.

10. Maintenance and Prevention

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

- ❏ For light soiling, clean the CB 751 with a dry cloth.
  Remove dust from the surface of the cooling fins of the U-shaped chassis using a clean, soft brush.
- ❏ Stubborn dirt should be removed using a mild detergent and a soft cloth.

10.1. Replacing the Lithium Battery



Caution

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



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. Wall or Table Mounting Using the Brackets

For mounting the CB 751 platform on a wall (vertical) or on a table (horizontal) two optional mounting brackets are available (see Fig. 31 and Fig. 32). It requires little effort to attach the mounting brackets to the bottom side of the CB 751 platform. Use the installed screws (Fig. 18, pos. 7).

Using four wall-mounted M6 screws and anchors, you can also perform the following mounting alternative.

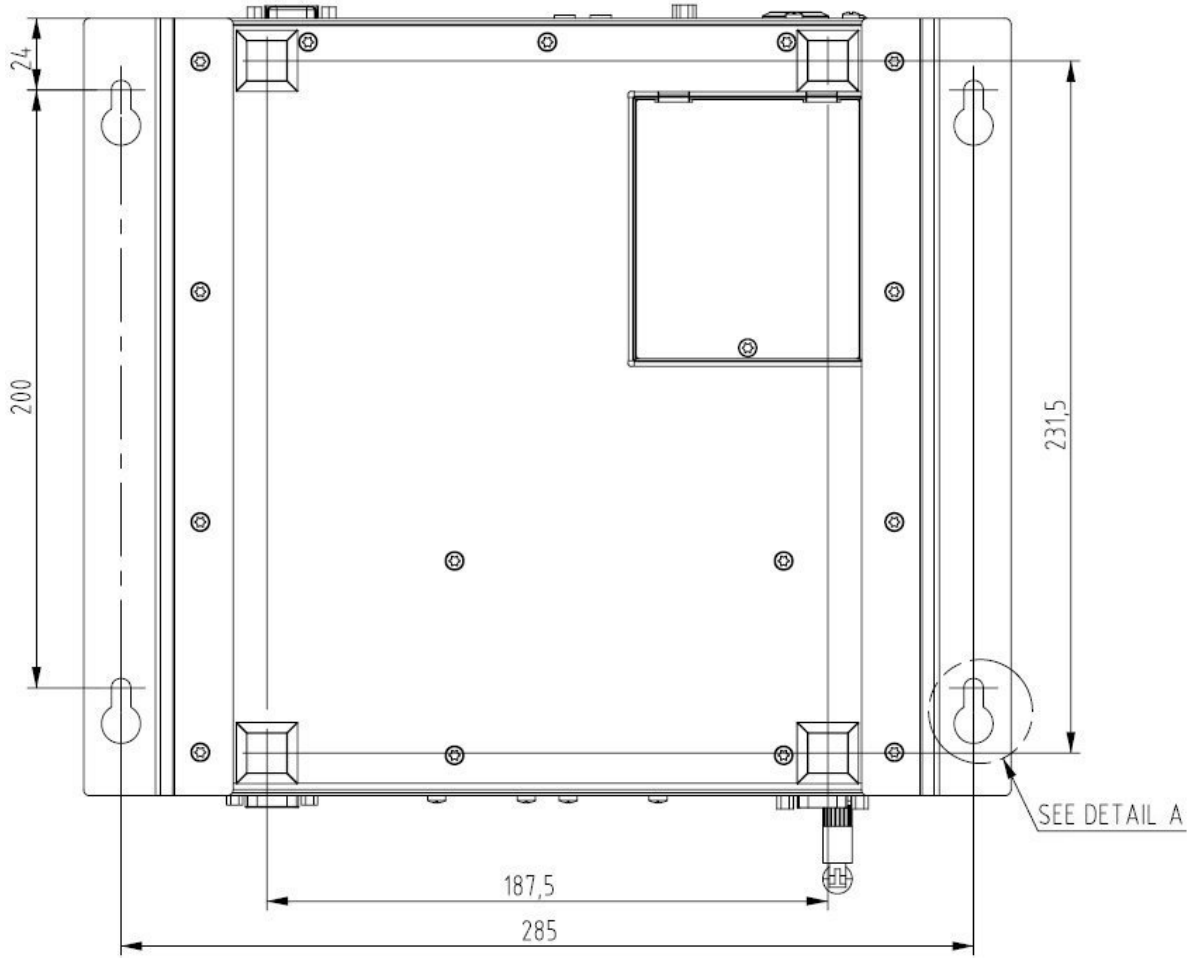


Fig. 29: CB 751 with mounting brackets installed

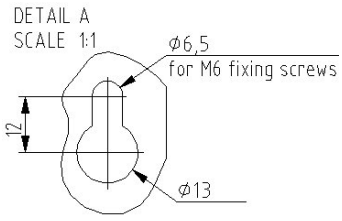


Fig. 30: Detail: Hanging holes



Fig. 31: Left mounting bracket (optional)



Fig. 32: Right mounting bracktet (optional)

12. Technical Data

CB 751-y		
Installed Motherboard	986LCD-M/mITX (BGA) see "Configuration Guide"	
Processor	Intel® Celeron® M 1.06GHz or Intel® Core™ Duo 1.66GHz	
Storage Media	* Optional equipment, depending on the system configuration ordered(see also "Configuration Guide") 1x 2.5" SATA-/SSD-HDD and/or 1x CompactFlash™ type I or II (IDE)	
Interfaces	Interfaces at the front side: 1x VGA 1x COM1(RS232) 4x USB (2.0) 3x LAN 1x Line-In 1x Line-Out 1x Microphone 1x Audio (orange) 1x Audio (black) 1x Audio (grey) 1x PS/2 keyboard 1x PS/2 mouse 1x IEEE-1394 (6-pin)	Interfaces at the rear side: 3x COM RS232 (configurable with optional Easy RS422/485) 2x USB (2.0) 1x WiFi antenna (optional, only for system configurations with Intel® Celeron® M 1.06GHz)
Internal on-Board Slots	1x PCIe x16 for optional DVI-D adapter card 1x mini PCIe x1 for optional WLAN card (only in system configurations with Intel® Celeron® M 1.06GHz)	
Controls	Power button (at the front side)	
Indicators	Power LED (ring-shaped, around the power button) HDD LED	
DC IN	24 VDC input connector (at the front side)	
Power consuption per slot (PCIe)	Max. 25 W	
Lithium Battery	CR2032; 3.0 V; 0.22Ah (UL recognized)	
Mains Power Supply	See type label	

* The corresponding document "Configuration Guide" and the manual of the installed motherboard can be downloaded from our web site: www.kontron.com by selecting the product.

12.1. Electrical Specifications

The corresponding electrical specifications for your CB 751-A/-B can be found on the type label of the system.

☞ CB 751-A may be connected via the provided DC power cord to a DC main power supply (see Fig. 26) as well as to an AC main power supply (see Fig. 28) using the optional AC/DC adapter.

☞ CB 751-B should only be connected to an AC main power supply (see Fig. 28) using the optional AC/DC adapter.

For EMC reasons it is not allowed to connect the CB 751-B via a DC power cord to a DC main power supply (see Fig. 27).

12.2. Mechanical Specifications

Dimensions	**CB 751**	
Height	75 mm (2.953")	
	with rubber feet	82,6 mm (3.252")
	with mounting brackets	81,5 mm (3.209")
Width	250 mm (9.843")	
	with mounting brackets	310 mm (12.205")
Depth	260 mm (10.236“)	
Weight (excl. packaging)	Approx. 4 kg (8.818 lbs.)	
Housing	Housing, black (RAL 7021) and blue (RAL 5017)	

12.3. Environmental Specifications

Operating Temperatur e/ Humidity	0 ... +50 °C not condensing (32 ... 122 °F) not condensing
Storage / Transport Temp. / Relative Humidity	-20 ... +70 °C / 5-95 % @ 40 °C not condensing (-4 ... 158 °F / 5-95 % @ 104 °C not condensing
Max. Operating Altitude	3.048 m (10.000 ft)
Max. Storage / Transport Altitude	10.000 m (32.810 ft)
Operating Shock	5 G, 11 ms duration, half sine
Storage / Transit Shock	15 G., 11 ms duration, half sine
Operating Vibration	10 – 500 Hz, 0.5 G
Storage / Transit Vibration	10 – 500 Hz, 1.0 G
Protection Class	Front IP20

12.4. EC Directives and Standards

EC Directives	
Low voltage directive (electrical safety)	General Product Safety Directive (GPSD) 2001/95/EG Low Voltage Directive (LVD) 2006/95/EG
EMC directive	EMC Directive 2004/108/EG
EC marking	Council Directive 93/68/EEC

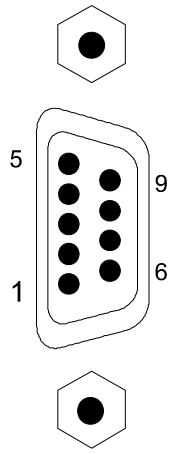
Electrical Safety	Standards
EUROPE	Information technology equipment - Safety - Part 1: General requirements EN 60950-1: 2006
U.S.A. / CANADA	to meet UL60950-1:2006

EMC	Standards
EUROPE	Generic emission standard for industrial environments (Emission): EN 61000-6-4:2007 Generic standards - Immunity for industrial environments (Immunity): EN 61000-6-2:2005
U.S.A.	FCC 47 CFR Part 15, Class A
CANADA	ICES-003, Class A

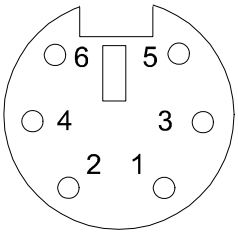
13. Standard Ports – Pin Assignment

Low-active signals are identified with a minus sign.

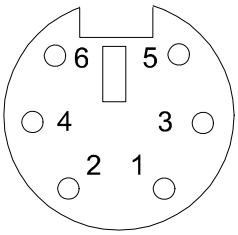
13.1. Serial Port COM (RS232)

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)	

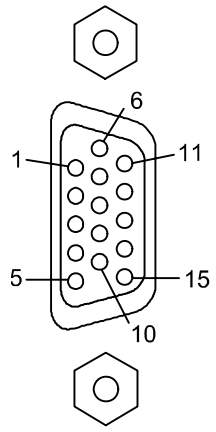
13.2. PS/2 Mouse Port

Pin	Signal Name	6-pin Mini-DIN Connector
1	Mouse Data	
2	N.C.	
3	GND	
4	+5V/SB5V	
5	Mouse Clock	
6	N.C.	

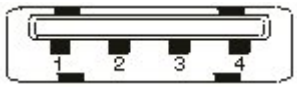
13.3. PS/2 Keyboard Port

Pin	Signal Name	6-pin Mini-DIN Connector
1	Keyboard Data	
2	N.C.	
3	GND	
4	+5V/SB5V	
5	Keyboard Clock	
6	V.C.	

13.4. VGA Port

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

13.5. USB Port

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

14. Technical Support

For technical support, please contact our Technical Support department:

Tel: +49 (0)9461 950-104
Fax: +49 (0)9461 950-200
e-Mail: support@kontron.com

Make sure you have the following information on hand when you call:

- the unit part id number (P/No.),
- the serial number (S/No.) of the unit (The serial number can be found on the type label at the bottom side of the device).

Be ready to explain the nature of your problem to the service technician.

If you have questions about Kontron Embedded Computers or our products and services, you may reach us at the aforementioned numbers, or at: www.kontron.com or by writing to:

Kontron Embedded Computers GmbH
Oskar-von-Miller-Str. 1

85386 Eching
Germany

14.1. Returning Defective Merchandise

Before you return any device that is not functioning correctly to Kontron Embedded Computers, please work through the following list:

1. Contact our Customer Service department to obtain an RMA number.
   Fax: (+49) 8165-77 412
   e-Mail: service@kontron.com
2. Ensure that you have received an RMA number from Kontron Customer Services before returning any device. Write this number clearly on the outside of the package that you are sending to us.
3. Describe the fault that has occurred.
4. Please provide the name and telephone number of a person we can contact to obtain more information, where necessary. Where possible, please enclose all the necessary customs documents and invoices.
5. When returning a device:
   - Pack it securely in its original box.
   - Enclose a copy of the RMA form with the consignment.

Corporate Offices

Europe, Middle East & Africa	North America	Asia Pacific
Oskar-von-Miller-Str. 1 85386 Eching/Munich Germany Tel.: +49 (0)8165/ 77 777 Fax: +49 (0)8165/ 77 219 info@kontron.com	14118 Stowe Drive Poway, CA 92064-7147 USA Tel.: +1 888 294 4558 Fax: +1 858 677 0898 info@us.kontron.com	17 Building,Block #1,ABP. 188 Southern West 4th Ring Beijing 100070, P.R.China Tel.: + 86 10 63751188 Fax: + 86 10 83682438 info@kontron.cn