User's Manual

Industrial PC-based Automation

IEC-830

4U, 19" Rackmount Chassis
Fault Resilient, Enhanced EMI Protection

Manual edition 1.0, January 2000

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Part number : MPRT-UM-IEC830-10

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packing list (bare system)

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IMPORTANT!

This following chapters provide information on several types of chassis components, their features and applications, and proper installation procedures.

Please heed the following warning and cautions.

Warning

Only experienced, authorized electronics service personnel should access the interior of the unit.

Caution

Always remove power from the system before inspecting or maintaining the chassis. To ensure no damage or injury occurs, also the power cord should be disconnected from the power source.

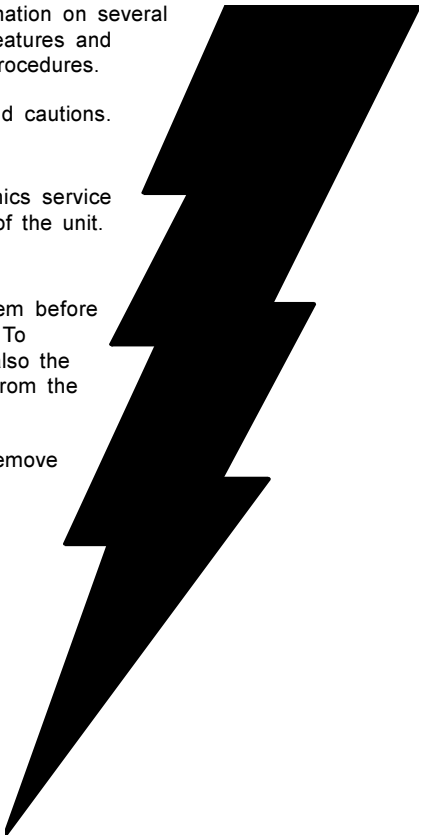
The following steps are required to remove power from your system:

1 Open the front panel access door

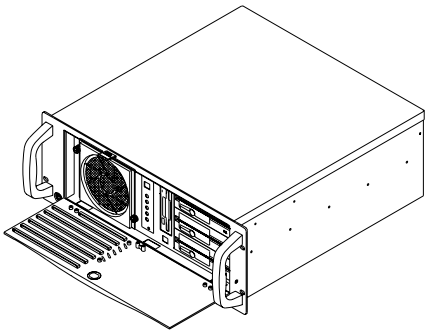
2 Place the ON/OFF switch in the OFF ("0") position

3 Turn all peripherals off and disconnect them from the chassis

4 Disconnect the power cord from the power source.



Specifications (bare system)



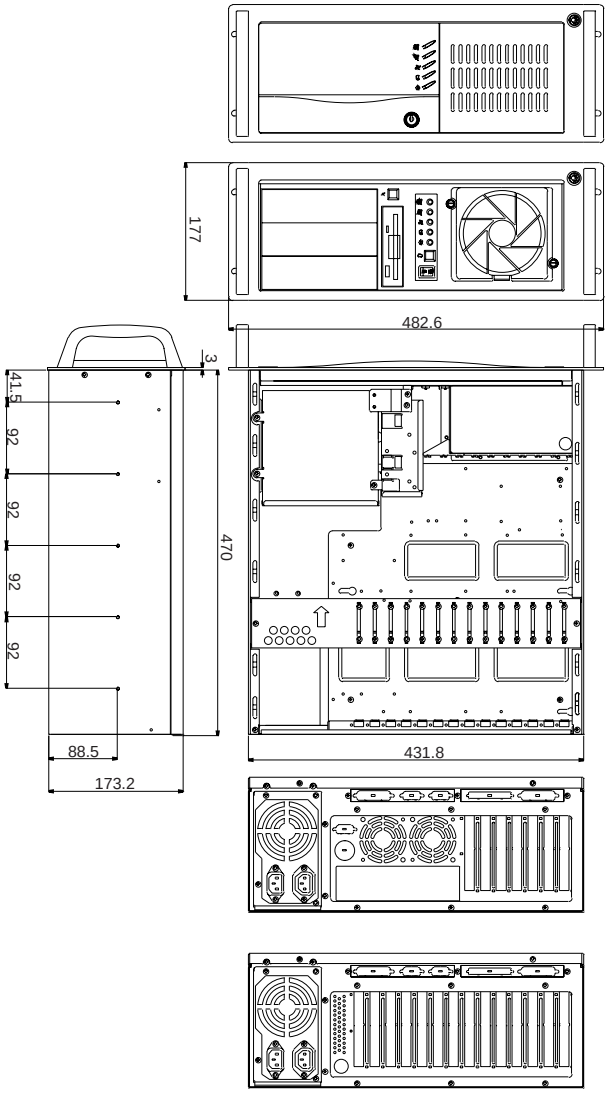
- **Construction**: heavy-duty steel
- **Disk Drive Capacity** : three 5¼ " drives (all accessible from the front panel) and three 3½ " drives (one accesible from the front panel)
- **Cooling System** :
  12cm Ball-bearing fan (flow in) with an air filter on the front panel
- **Keyboard Connector** :
  Pre-wired 5-pin DIN connector on the front panel
- **Controls**: Reset, power On/Off and alarm reset
- **Indicators**:
  LEDs for power On/Off, HDD activity,Fan fail, and temperature 1,2
- **Speaker**: 8-ohm speaker
- **Dimensions**: 482.6 (W) x 470 (D) x 177 (H) mm
- **Weight**: 14.5kg

Environmental

- **Operating Temperature**: 32 to 122° F (0 to 50°C)
- **Relative Humidity**: 5 to 95% @ 40° C, non-condensing
- **Vibration** (operating): 5 to 17 Hz, 0.1" double amplitude displacement; 17 to 500 Hz, 1.5G acceleration peak to peak
- **Shock** (operating) : 2.5G @15~20ms (35G @15~20ms non-operating)
- **Safety** : Meets UL/CSA/TUV
- **EMI** : Meets FCC/CE Class B

Parts Locations

Dimensions

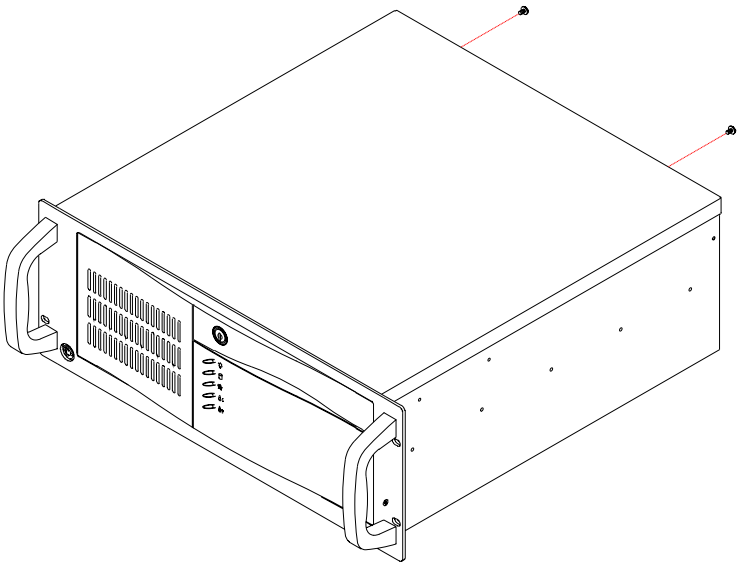


Installation Instructions

Removing the System Cover

The procedure for removing the system cover is as follows :

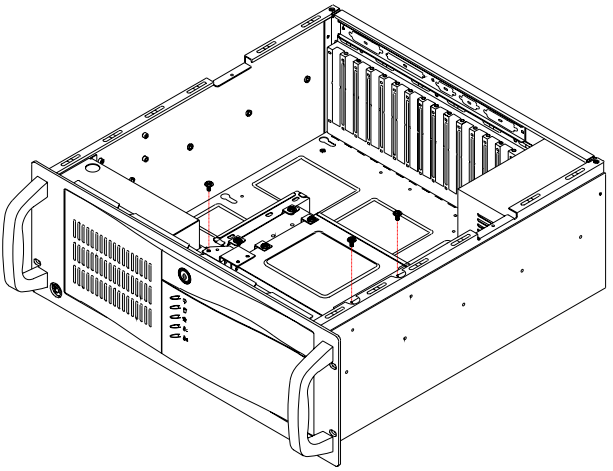
1. Power-down the computer. To ensure that no damage or injury occurs, disconnect all peripherals and the system's power cord from the power source.
2. Remove the 2 screws located at the rear side of the cover.
3. Carefully slide the cover toward the rear of the chassis and lift the cover from the chassis.



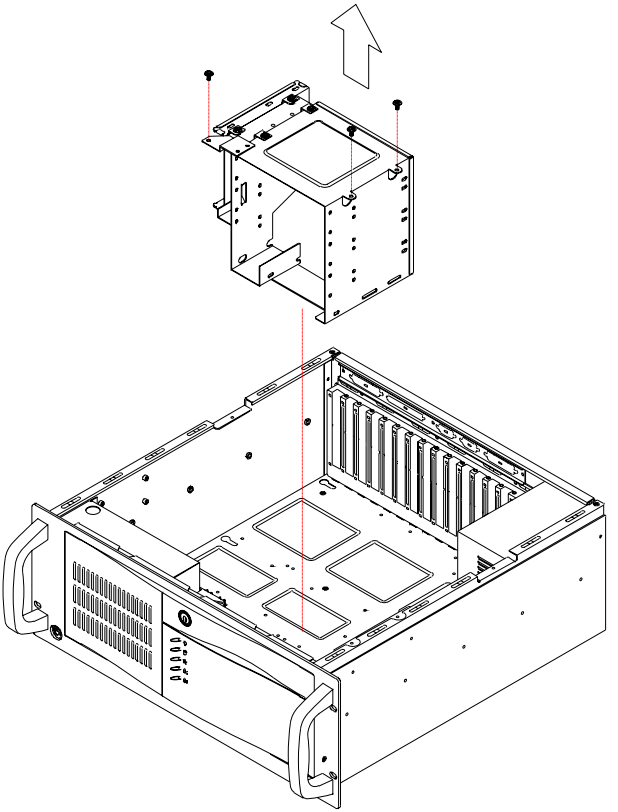
Removing and adding Disk Drives

The drive bay can be fully extracted from the chassis, to ease the installation of floppy drive, harddisk or CDROM. The bay, secured by three screws, is hanging down from two rails and is cushioned by rubber buffers to protect it from shock and vibration. To extract the bay proceed as follows :

1. Power-down the computer. To ensure that no damage or injury occurs, disconnect all peripherals and the system's power cord from the power source.
2. Remove the chassis cover
3. Remove the three screws that connect the bay with the chassis



4. Lift the bay out carefully.
   (Note: the two EMI springs may loosen at this time. Please keep them in a save place until the bay is being reinstalled.)



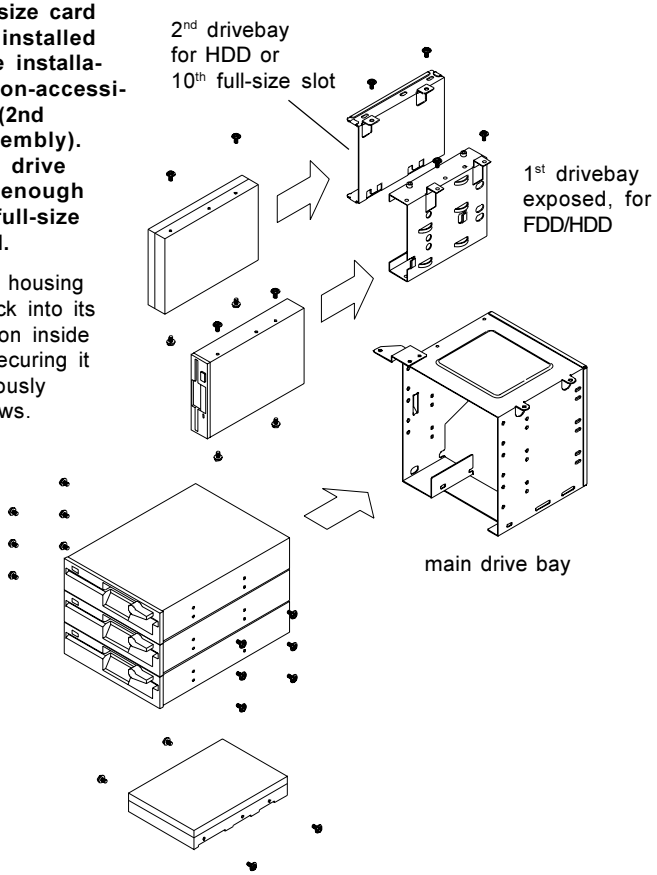
5. Two additional 3.5" drive assemblies are piggybacked on the main drive bay. The first assembly, directly mounted to the main drive bay, is accessible from the front panel and preferably used for FDD drives. The second assembly is mounted on the first assembly and is not accessible from the front panel. To separate the two assemblies remove the 4 screws on the top of the assemblies and slide them backwards and lift them up to release them from the main drive bay.

6. Place the 5.25" drive inside the main bay, aligning the screw holes (4 at both side) in the drive with mounting holes in the housing, inserting screws to secure the disk drive to the main drive bay. (The first drive bay should be moved away.) The bottom space is of the main drive bay is for installation of an additional 3.5" HDD.

7. Install the accessible 3.5" FDD and non-accessible HDD into the two piggybacked drive assemblies and secure the assemblies to the main drive bay with the 4 top screws. Make sure that the assemblies hooks are properly seated.

8. If a 10th full-size card needs to be installed than omit the installation of the non-accessible HDD bay (2nd drivebay assembly). Omitting this drive creates just enough space for a full-size add-on board.

9. Place the main housing with drives back into its previous position inside the chassis, securing it with the previously removed screws.



Passive Backplane

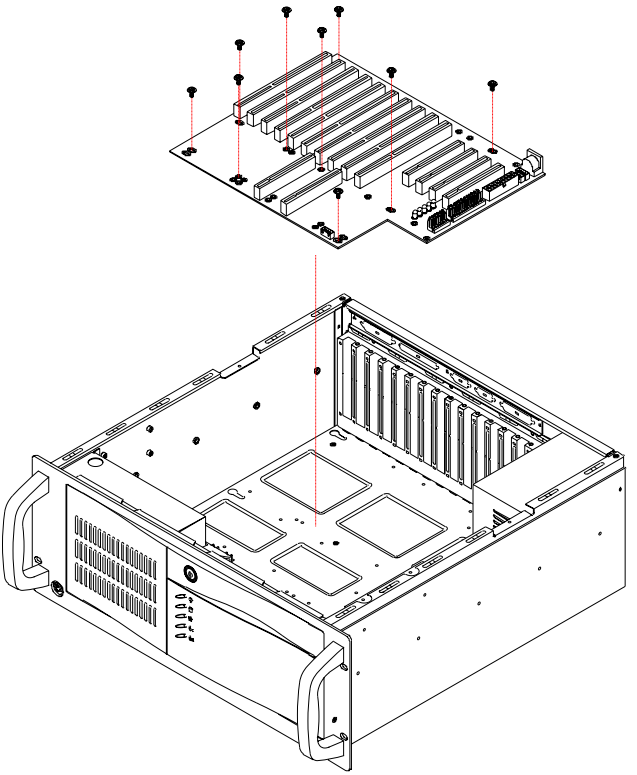
The chassis can hold either a passive backplane (ISA or PCI/ISA) or an Baby AT or ATX motherboard.

You should remove the hold-down-clamp before installing backplane or motherboard. To do so, remove the two screws at the sides of the clamp and lift it out.

1. Place the backplane or ATX motherboard into the chassis to find out in what holes you need to insert plastic spacers. For stability of your boards make sure to have spacers installed on every corner. Remove the backplane or ATX motherboard

2. Insert the spacers into the holes

3. Place your backplane or motherbosard into chassis, aligning, and press down to over the spacers. Inserting additional screws to fix the backplane or motherboard tightly to the base of chassis.



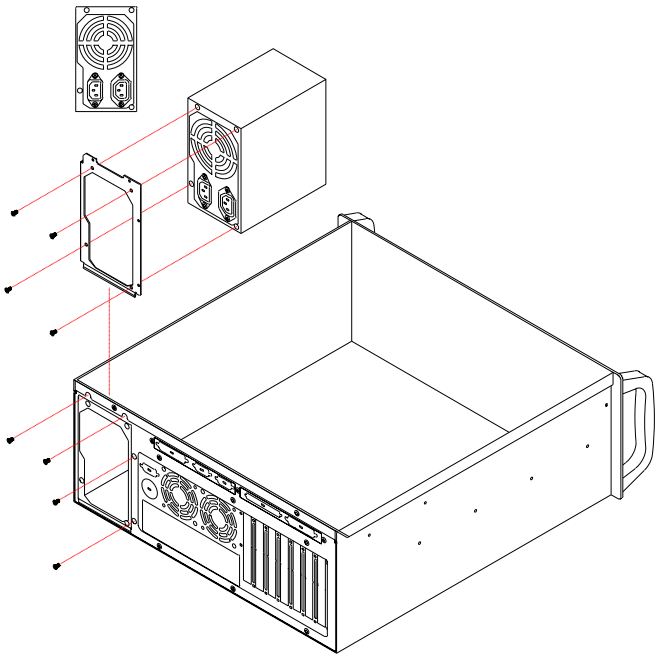
Installing a Power Supply

The IEC-830 can be equipped with a standard PS/2-type or Mini-Redundant Power Supply. For PS/2 type power supplies (Standard or ATX) an additional converter plate is requirred. The Redundant Power Supply can be mounted directly to the chassis without converter plate.

PS/2 power supply : install the converter plate on the rear panel by securing 4 screws. Insert the PS/2 power supply carefully into the chassis, aligning the 4 holes of the power to the plate and insert screws to secure.

Mini redundant power supply : please remove the PS/2 convert plate. Insert the Redundant power supply carefully into the chassis, aligning the 4 holes of the power to the chassis holes and insert screws to secure.

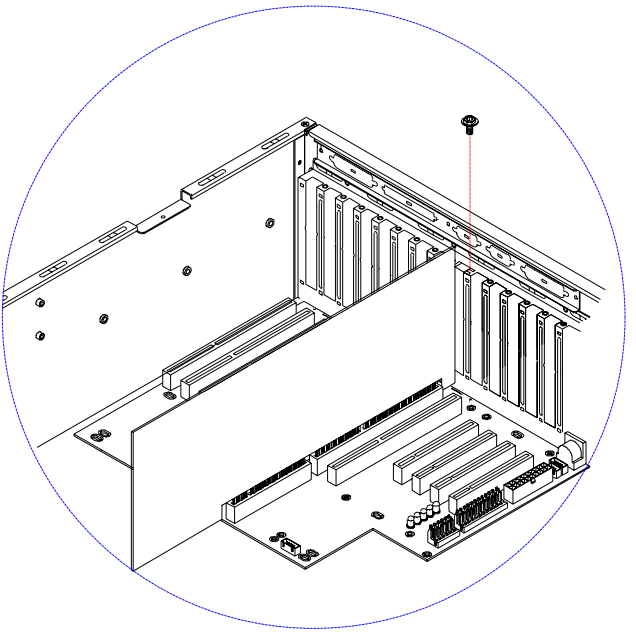
Connect power cables



Installing Add-on Cards

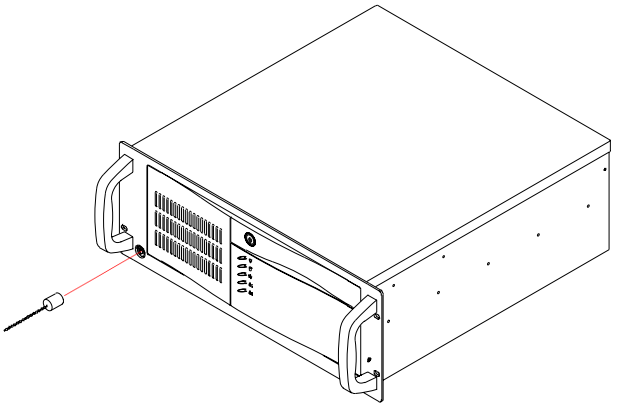
The IEC-830 uses a hold-down clamp to ensure the add-on cards are located securely and are protected against shock and vibration. To install your cards into the passive backplane, proceed as follows.

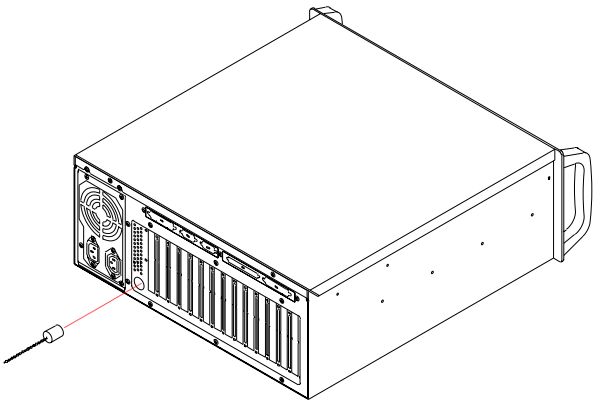
1. Power Off the system.
2. Remove the chassis cover.
3. Detach the hold-down clamp by removing the 2 screws at both end of the clamp and lift it off.
4. Locate the desired bus slot location for installation. If you need to use the 8th, 9th or 10th slots in full size cards, put the 3-slot card guide to expend the slot
5. Remove the substitute I/O bracket from the rear of chassis by releasing screw.
6. Place the card ends into the appropriate card guide in the chassis. Lower the card and carefully push the card-edge connector into the slot. Ensure that the I/O bracket is accessible through the back of chassis.
7. Secure the card-edge I/O bracket to the chassis with the screw.
8. Attach required cables.
9. Release the two screws on the hold-down clamp and adjust the spacers to pressure the cards in their slots then secure the screws and attach the hold-down clamp to the chassis.



Attaching a Keyboard

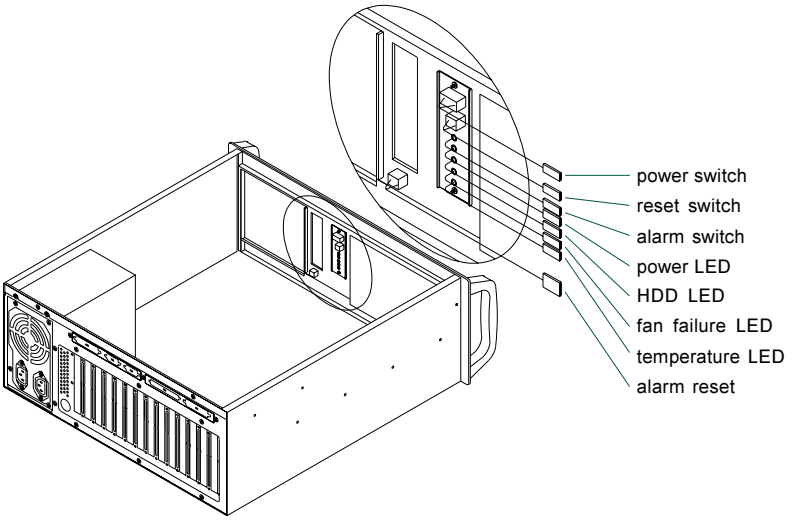
The chassis supports connection of a keyboard at front panel and the rear side. The rear side connection is simply access to the DIN connector on passive backplane or motherboard. The front panel connection exist of a DIN connector with a cable that can optionally connect to an onboard box header on the passive backplane.





Internal Wiring

The internal wiring of the chassis includes all signals, switches and power that connects the seperate components excluding 110/220 Volt power source wiring.



Front Panel Switches and Indicators

1. Power Switch(ATX)	connects to	Power Supply
(AT)	connects to	Power Supply
2. Reset Switch	connects to	CPU card
3. Power On/Off LED	connects to	CPU card
4. HDD active LED	connects to	CPU card
5. Fan fail LED	connects to	Thermal detection board
6. Temperature 1	connects to	Thermal detection board
7. Temperature 2	connects to	Thermal detection board
8. Alarm Reset	connects to	Thermal detection board

Fan and Internal Speaker

9. Speaker Connector	connects to	CPU card
10. Fan DC Power	connects to	Power Supply: +12V, GND
11. Pre-wired keyboard	connect to	Backplane or CPU Card

Install Backplate and I/O Plates

There are two backplates: one for a 14-slot backplane and one for a standard ATX motherboard.

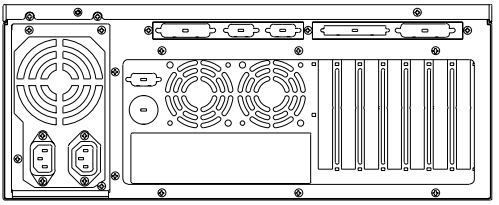
1. Power down system and remove the system cover.

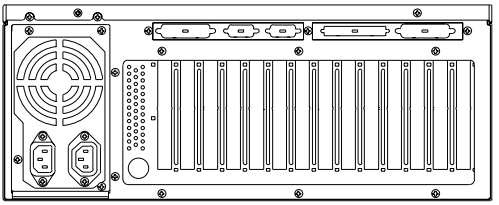
2. Remove the six screws which secure the backplate to the chassis.

3. Push the backplate inwards to take it out.

4. The ATX backplate offers the possibility to install 2 additional fans on he backplate itself. The ATX backplate comes with one ATX Window.

6. The I/O plates are included. One is a real I/O plate that offers space to mount interference connectors such as RS-232 and Printer ports. The other plate is perforated and only meant to increase air flow in the system.





Maintenance

Fan Filter Cleaning

It is recommand that the fan filter be cleaned regularly in very dusty environments. The fan filter should be cleaned at least once every 30 days.

1 Power-down the computer. To ensure that no damage or injury occurs, disconnect the system's power cord from the power source.

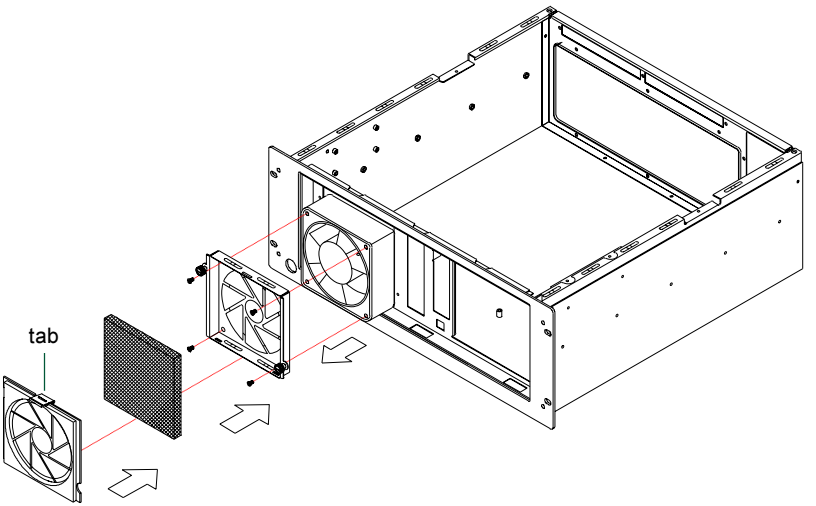
2. Open the lockable door on the front panel and you can find the tab of the fan filter.

3. Remove the fan filter cover by press-down the tab then you can take the filter out.

4. Wash the filter with a mild soap-and-water solution and dry throughtly.

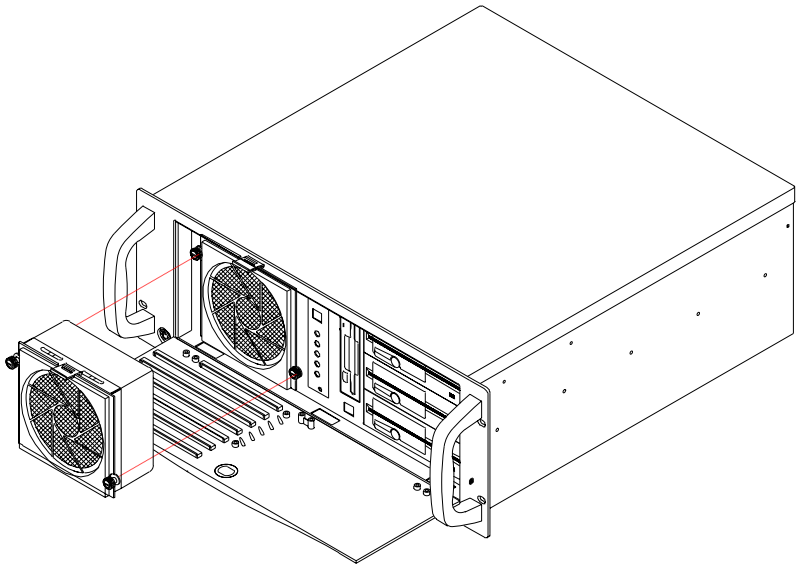
5. Place the filter and cover back into its orginal position.

6. Reconncet the power cord and power up the system.



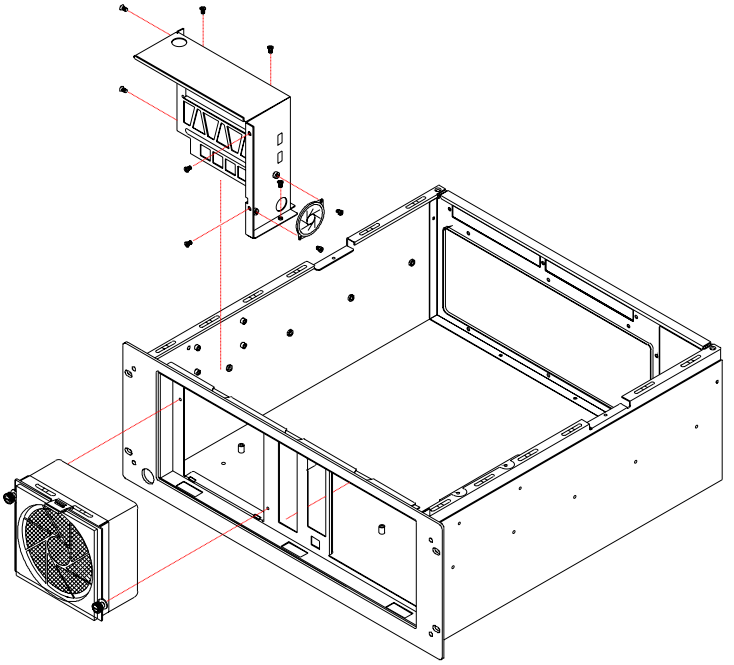
Removing the Fan

1. Power off the system.
2. Open the front door.
3. Remove the two thumb screws on the fan unit and pull the unit up carefully to lift it out.
4. Disconnect the DC power lines and Speaker wiring of the fan.
5. Remove another 4 screws at the front of the fan unit and then slide the fan housing cover backwards.



Removing the speaker

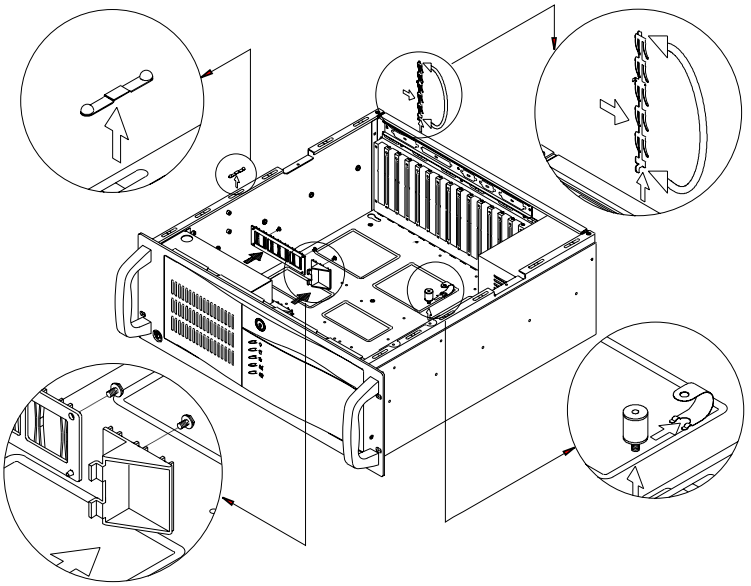
1. Power off the system.
2. Open the system cover, you will find a speaker mounted beside the fan unit by two scews.
3. Disconnect the lines of the speaker.
4. Remove the two screws and take the speaker out carefully.



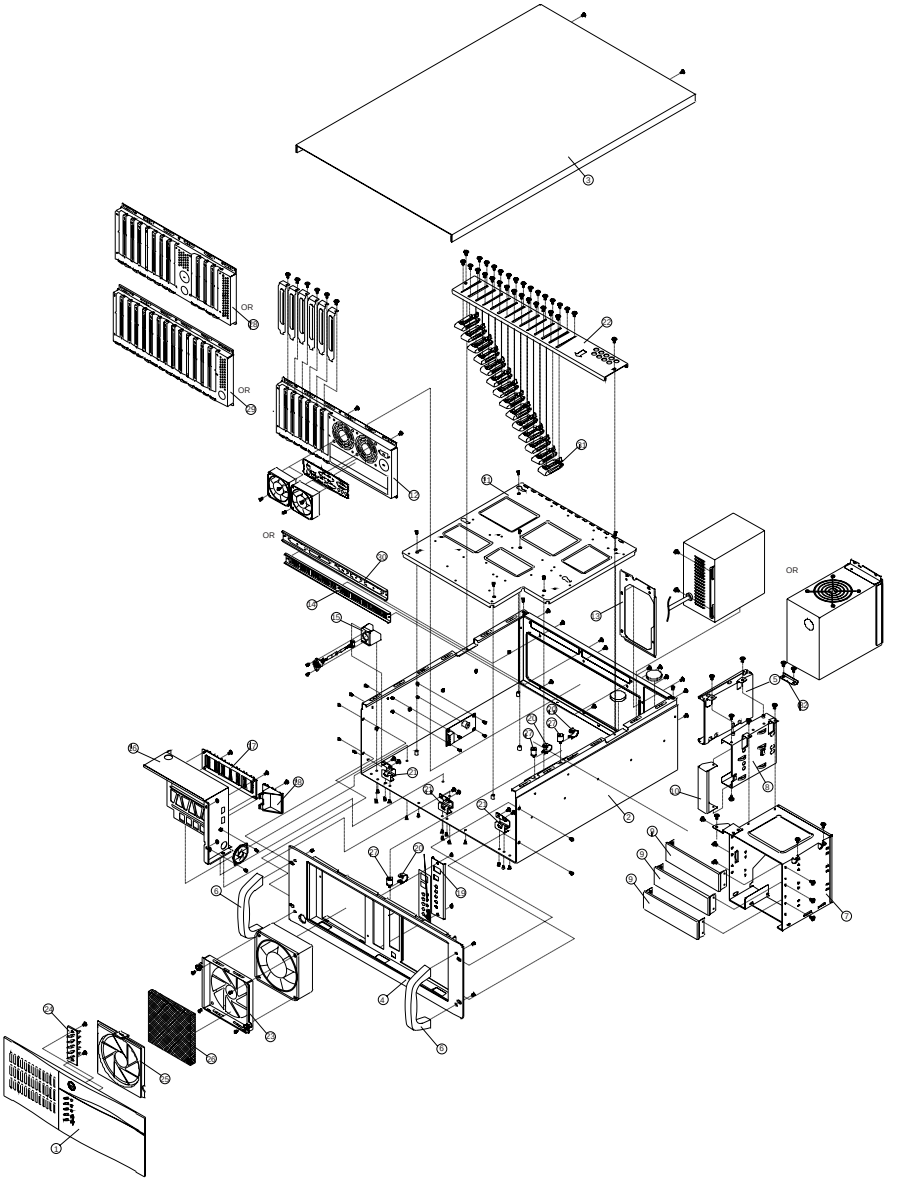
EMI Clips

The IEC-830 is equipped with EMI grounding clips that ensure electrical bonding of the parts of your IEC-830 system. They are important.

If installing or extracting parts of the system causes these clips to loosen always restore there original position when parts are being reinstalled into the system.



Appendix : Exploded Diagram



Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.