MIC-3002A/6
MIC-3002AD/6

**3U 6-slot CompactPCI®
Enclosures**

User Manual

Copyright

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All other product names or trademarks are properties of their respective owners.

Two Years Product Warranty

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.

2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.

3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.

4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.

Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Important Safety Information

1. Please read these safety instructions carefully.

2. Please keep this User's Manual for later reference.

3. Please disconnect this equipment from AC outlet before cleaning. Don't use liquid or sprayed detergent for cleaning.

4. For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

5. Please keep this equipment from humidity.

6. Lay this equipment on a reliable surface when install. A drop or fall could cause injury.

7. Do not leave this equipment in an environment unconditioned, storage temperature above 40° C, it may damage the equipment.

8. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.

9. Make sure the voltage of the power source when connect the equipment to the power outlet.

10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.

11. All cautions and warnings on the equipment should be noted.

12. If the equipment is not use for long time, disconnect the equipment from mains to avoid being damaged by transient over-voltage.

13. Never pour any liquid into ventilation openings; this could cause fire or electrical shock.

14. Never open the equipment. For safety reason, qualified service personnel should only open the equipment.

15. If one of the following situations arises, get the equipment checked by service personnel:
    a.   The Power cord or plug is damaged.
    b.   Liquid has penetrated into the equipment.
    c.   The equipment has been exposed to moisture.
    d.   The equipment has not work well or you can not get it work according to user's manual.
    e.   The equipment has dropped and damaged.
    f.   If the equipment has obvious sign of breakage

16. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

17. CAUTION: The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

FCC Class A

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 a 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 a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Support and Assistance

1. Visit the Advantech web site at **www.advantech.com/support** where you can find the latest information about the product.

2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Packing List

Before installing your board, ensure that the following materials have been received:

- 1 x MIC-3002A Compact PCI enclosure with backplane
- 1 x bag of accessories
- 1 x warranty certificate
- 1 x User manual

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Contents

General Information

This chapter provides general information on MIC-3002A.

Sections include:

- Introduction
- Features
- Specifications
- Dimensions

Chapter 1 General Information

1.1 Introduction

MIC-3002A is a compact 3U CompactPCI chassis designed specially for portable applications. With a handle design it is portable, and it also has an on-board 6.4" LCD display on the rear panel (MIC-3002AD/6). The MIC-3002A is therefore suitable as a rugged all-in-one mobile controller for applications in battle fields, production facilities, transportation systems and traffic control systems.

The 3U-sized 6-slot backplane of MIC-3002A supports 32-bit operation. The backplane complies with the PICMG 2.1 Hot-Swap Specification, and you can build easy-to maintain systems with hot-swappable CompactPCI boards and software.

1.2 Features

- 6-slot 3U CompactPCI backplane
- Compact size, 4U high enclosure for 3U CompactPCI modules
- Side handle design and optional 6.4" LCD display for portable applications
- Stand feet on the bottom side for desktop application
- Hot-swap-compliant backplane
- Logic Ground and chassis ground can be isolated or common

1.3 Specifications

1.3.1 Backplane
• **3U Slot:** 3 slots for system module, 5 slots for peripheral cards and 2 slots for Power Supply

• **No rear I/O support**

• **Bus:** 32-bit / 33MHz

• **VI/O Voltage:** 3.3V / 5V (jumper selectable)

1.3.2 Cooling
• Two 41.4 and above CFM fans, 12VDC brush-less, dual ball bearing

• Bottom-access removable filter for easy maintenance

• **MTBF:** 80,048 hours @ 25° C

1.3.3 6.4" LCD Option
• **Dimensions:** 3U height x 10-slot (40HP) width

• **Screen Size:** 6.4 inches (diagonal)

• **Resolution:** 640 x 480 x 18-bit colors (262,144 colors)

• **Pixel Pitch:** 0.203 x 0.203 mm

• **Brightness:** High Brightness 300 cd/m2

• **Lamp Life Time:** 15,000 Hours @ 25° C (77° F)

• **Integrated with back light inverter**

1.3.4 Mounting
• Wall/Panel mounting on the front side or rear side

• Side (Upper) handle design for portable applications

• Stand feet on the bottom side for desktop applications

1.3.5 Physical
• **Dimensions (W x H x D):** 220 x 190 x 245 mm (8.7" x 7.5" x 9.7")

• **Weight:** 6 Kg

1.3.6 Power Supply

- **MTBF:** 105,405 hours @ 25° C

- **Safety:** CE, UL, cUL, TUV

- **Input:** 100~240 V AC@47~63 Hz, full range

- **Output:** 250 (or 300 W) ATX power supply

1.3.7 Environmental Specifications

- **Operating Temperature:** 0 ~ 60° C (32 ~ 140° F)
  0 ~ 50° C (32 ~ 122° F) for LCD model

- **Storage Temperature:** -40 ~ 80° C (-40 ~ 140° F)
  0 ~ 70° C (0 ~ 158° F) for LCD model

- **Humidity:** 95% @ 60° C, non-condensing

- **Operating Vibration:** 1.0 Grms w/ CompactFlash disk

- **Storage Vibration:** 2.0 Grms

- **Shock:** 20 G peak-to-peak, 11 ms duration

- **MTBF:** 87,191 hours @ 25° C

1.3.8 Compliance

- PICMG 2.0, R3.0 CompactPCI Specification

- PICMG 2.1, R2.0 Hot-Swap Specification
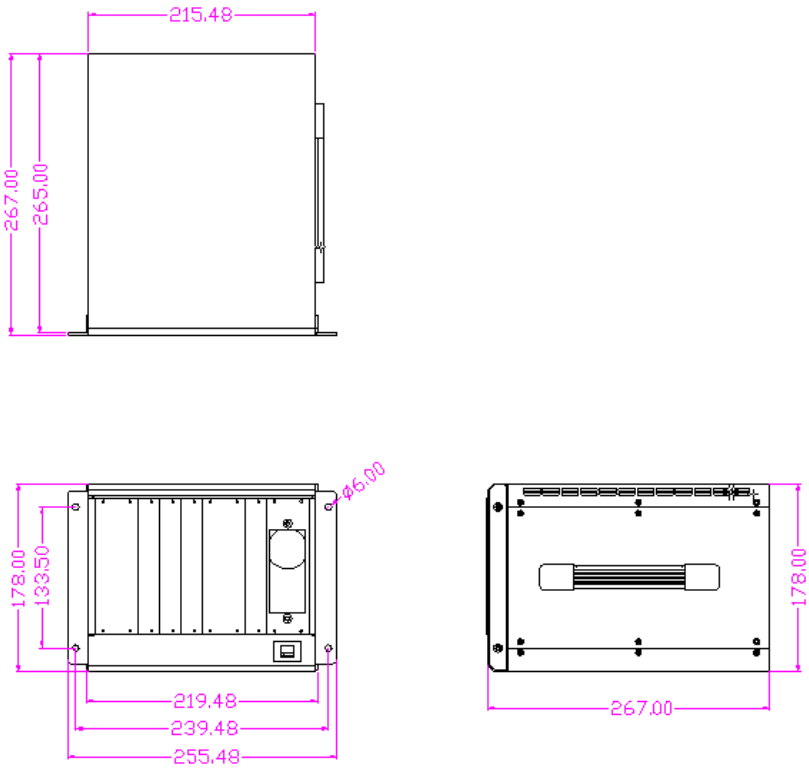
1.4 Dimensions

Figure 1.1: MIC-3002A Dimensions

Installation

This chapter provides information on the installation of MIC-3002A.

Sections Include:

- Initial Inspection
- The MIC-3002A Chassis
- Installation Procedures

Chapter 2 Installation

2.1 Initial Inspection

We have carefully inspected the MIC-3002A mechanically and electrically before shipping. It should be free of marks and scratches and in perfect working order upon receipt. As you unpack the MIC-3002A, check it for signs of shipping damage (damaged box, scratches, dents, etc.). If it is damaged or if it fails to meet specifications, notify our service department or your local representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection we will make arrangements to repair or replace the unit.

Warning!   We strongly recommend that only qualified, experienced personnel install or remove components and that they practice extreme caution when doing so.

2.2 The MIC-3002A Chassis

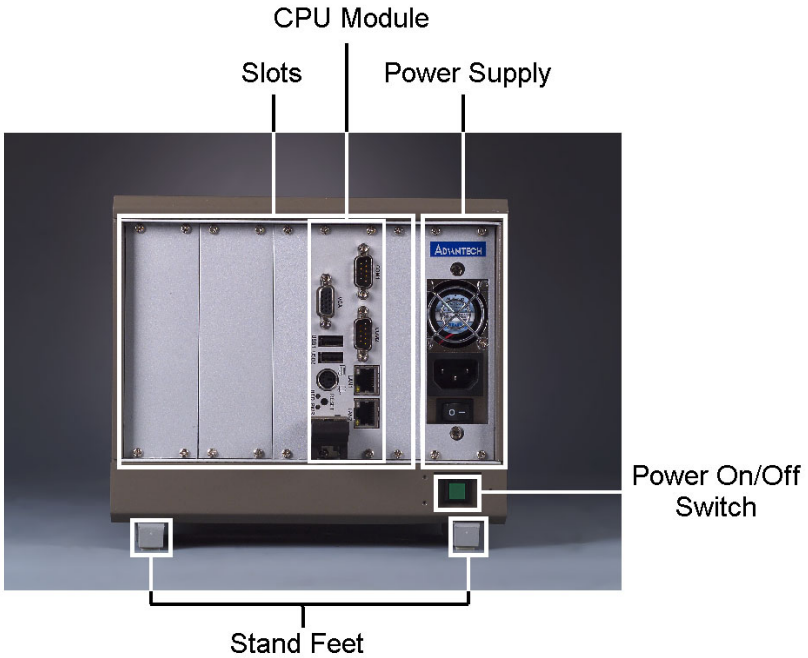The following illustrations show the components on the front and rear side of the enclosure.

Figure 2.1: Front View of MIC-3002A

2.3 Installation Procedures

2.3.1 Card Installation and Removal

The CompactPCI connectors are firm and rigid, and require careful handling while plugging and unplugging. Improper installation of a card can easily damage the backplane of the chassis.

The CPU card can be installed only in the system slot. The CompactPCI specification allows the system slot to be at any position in the backplane. Do not insert the CPU card into any other slot, or insert a peripheral card into the system slot. The MIC-3002A may accept different backplanes, thus the location of the system slot may vary. The system slot is marked by a triangle enclosing the slot number.

The inject/eject handles on CompactPCI cards help you to install and remove the cards easily and safely. Follow the procedures below to install a card into a chassis:

Note: *A CPU card can be only installed in the system slot. If a CompactPCI card is installed into the wrong slot, there may be some damage to the chassis or card.*

To Install a Card:

1.   Hold the card vertically. Be sure that the card is pointing in the correct direction. The components of the card should be pointed to the right-hand side.

2.   Be sure that the handles of the card are not latched. Release the handles if they are latched. Handles from different vendors may have different latch designs.

Caution: *Keep your fingers away from the latch hinges to prevent your fingers from getting pinched.*

3.   Insert the card into the chassis by sliding the upper and lower edges of the card into the card guides.

4.   Push the card into the slot gently by sliding the card along the card guide until the handles meet the rectangular holes of the cross rails.

Note: If the card is correctly positioned and has been
         slid all the way into the chassis, the handles
         should match the rectangular holes. If not,
         remove the card from the card guide and repeat
         step 3 again. Do not try to install a card by forcing
         it into the chassis.

5.   Lift the lower handle up to push the card into place.

6.   Secure the card by locking the handles in place.

To Remove a Card:

1.   Unscrew the screws on the card front panel. Release the locking
      latches on the handles.

2.   Press the lower handle down to release the card from the backplane.

3.   Slide the card out.

2.3.2 Before Operating the System

Before operating your system, first check your power supply source.
Adjust the switch on the power supply to the correct voltage.

There are ventilation holes on both sides and bottom of the chassis for
cooling. We advise you not to block these holes during operation.

2.3.3 Installing Peripherals

These extension brackets are available in PC stores, or you may contact an Advantech distributor to order them.
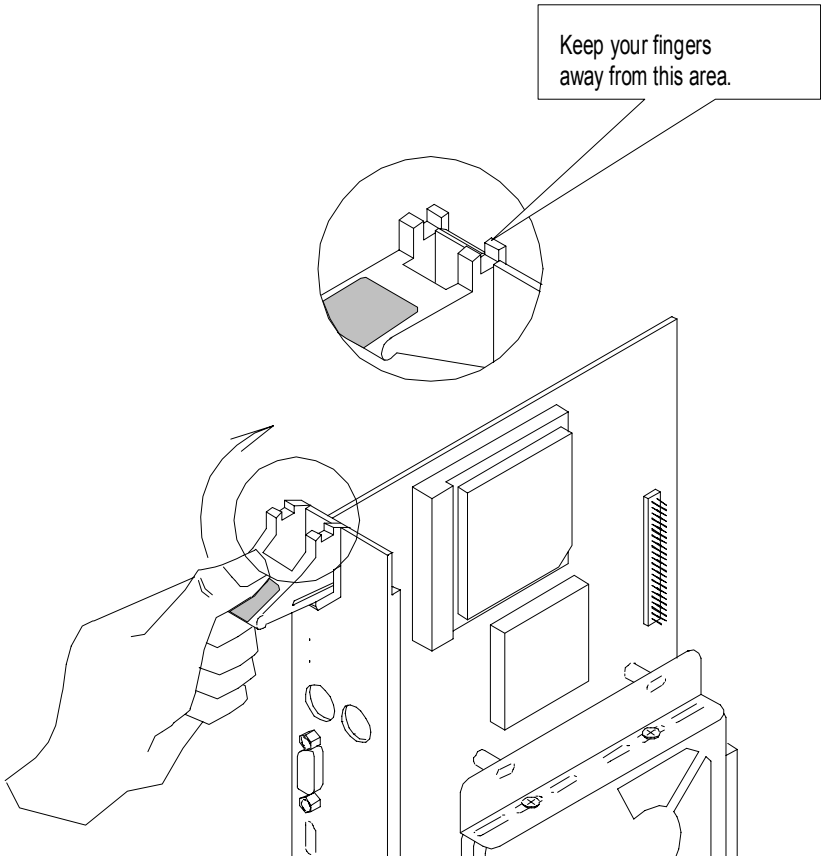
Keep your fingers away from this area.

Figure 2.2: Attaching Mounting Brackets to a Half-Height Device

2.3.4 Replacing Fans and Air Filter

The fans and the air filter of MIC-3002A are at the bottom of the chassis. Please follow the steps below to replace fans:

1.   Turn off the power

2.   Remove the cover at the bottom of the chassis

3.   Unplug the wiring connecting to the backplane

4.   Replace the fan by the a new one

5.   Reattach the cover

The air filter can become dirty after a period of time. Follow the steps below to replace a filter:

1.   Turn off the power

2.   Remove the cover at the bottom of the chassis

3.   Replace the dirty filter by a clean one

4.   Reattach the filter cover

2.3.5 Grounding

The grounding screw on the left side of the cover offers convenient ground connection.