



Megaplex II 4U

Chassis Guide

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Web Site We invite you to access the American Megatrends world wide web site at:
<http://www.ami.com>.

FTP Site The address of the American Megatrends FTP site is:
<ftp://ftp.megatrends.com>

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Preface, Continued

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Safety Summary

The following text describes the WARNINGS, CAUTIONS, and NOTES used throughout this document. Each description is followed by an example. You should become familiar with these procedures and always observe standard safety practices.

Warning Used to describe potential hazards to personnel. Follow directions carefully to avoid injury.

Warning

High voltage used in this equipment. To avoid injury or electrical shock, do not remove cover or reach into the unit when the power cord is connected.

Caution Used to describe hazards to equipment. Failure to comply with instruction may result in damage to the equipment.

Caution

Support the drive canister with both hands when removing it from the chassis. Failure to support the canister can result in the unit falling and striking the chassis causing damage to the canister or to the chassis.

Note: Provides information that will aid you in the interpretation of systems operations, procedures, or functions.

Note: Do not duplicate ID numbers within the same SCSI bus.

1 General Information

This manual provides general installation and maintenance information, including drive installation and power supply replacement for the Megaplex II 4U chassis.

General Description of Chassis

The Megaplex II rack-mount chassis supports up to three 3.50" SCA (Single Connector Attachment) Low Voltage Differential (LVD) 16-bit SCSI drives. SCA drives provide simple installation via pluggable canisters. The SCA "no cable" design allows you to simply mount the drive into the canister and plug into the chassis. The Megaplex II chassis includes:

- mounts for up to three drives,
 - mounts for up to three power supplies,
 - five cooling fans,
 - four CPU activity LEDs
 - three SCSI activity LEDs, and
 - an Alarm Mute switch.
-

Peripheral Drives System peripherals include mountings for:

- one 5.25" half-high CD-ROM drive,
 - one 3.5" floppy drive, and
 - one 3.5" IDE (internal system drive.)
-

Power Supplies The chassis is supported by three 440W hot-pluggable power supplies. The N+1 redundant arrangement allows the chassis to continue operation when one power supply fails. The power supply is a modular, pluggable design. Power supplies are mounted from the rear of the chassis. Each power supply plugs into the chassis power distribution board via a blind mate connector. The power supplies are hot-pluggable units that can be replaced while the system remains operational.

Cooling Cooling is provided by three fans in the front of the chassis, and two fans in the middle (in an assembly.)

Front of Chassis



Back of Chassis



Specifications

This chassis is designed to be used in 19" rack configurations. This chassis has been designed to hold the Megaplex II motherboard configured with up to 2 GB of memory. The specifications of the chassis are:

Dimensions Height: 7", Width: 19", Depth: 28"

Weight: Approximately 50 pounds.

Controller I/O Seven expansion slots in the rear of the chassis.

Power Supplies This chassis supports three 440W power supplies arranged in N+1 redundant configuration.

- A minimum of two power supplies are required.
 - The power supplies are hot plug and accessible from the front of the case.
 - Each power supply has its own AC input plug.
 - Power supplies are auto-ranging and have PFC
 - All three power supplies are handled by the built-in power distribution board that allows hot plug and redundancy.
-

AC Input:

- 100 – 120 VAC @ 60 Hz (nominal 110 VAC) (Autoswitch) 10.0 Amps
 - 220 – 240 VAC @ 50 Hz (nominal 220 VAC) (Autoswitch) 5.0 Amps
-

DC Output: Each power supply provides:

50A @ 5V
30A @ 3.3V
27A @ +12V
1A @ -12V
1A @ -5V

Cont'd

Specifications, Continued

SCSI Drives The 4U chassis supports three hot plug 3.5" 16-bit single-ended SCA LVD SCSI drives.

- These drives are accessible from the front.
 - Each drive bay can take a 1" SCSI LVD drive.
 - The three drives are arranged on one back plane. The back plane supports three drives. The default IDs of these drives are 1, 2, and 3.
 - Access to the back plane is through one Wide SCSI cable. This cable can be connected, for example, to one channel on a RAID controller.
-

Cooling There are two fans mounted in the middle of the chassis. These fans are hot plug and are monitored by the Megaplex II system BIOS Health screen and the management software shipped with Megaplex II.

- There are three blower fans in the power supply assemblies.
 - For cooling the CPU area, the CPU top plate must be installed and the Top Chassis cover must be closed.
-

Chassis Intrusion There is a chassis intrusion switch that detects when the top system cover is open. This switch is monitored through the management software provided with Megaplex II.

Chassis Alarm Indication There are some LEDs and alarms that are displayed on the chassis:

Each of the three power supplies has an alarm. When one of the power supply fails, the RED LED for that power supply comes on and the buzzer goes off.

Each of the two middle fans has an alarm. When one of the fans fail, the RED LED for that fan comes on and the buzzer goes off.

Note: There is an Alarm Mute switch that will turn off the buzzer.

Cont'd

Specifications, Continued

LEDs and Switches There are fan failure LEDs for both fans.

There is an IDE Activity LED, a power-on LED, a reset switch, and a power-on switch.

There are four CPU Activity LEDs.

There are three SCSI LEDs.

There is an Alarm Mute switch.

Temperature: Operating: 0° C to 40° C
Storage: -20° to 75° C

Humidity: 0% to 95% non-condensing

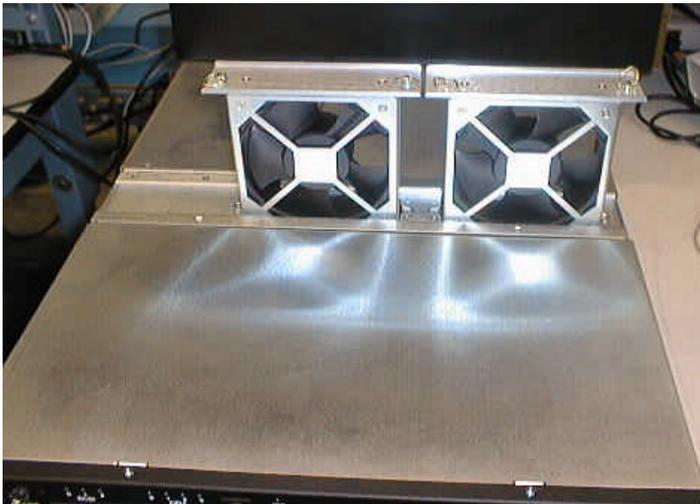
Altitude: Operating: 0 feet to 10,000 feet
Storage: 0 feet to 40,000 feet

Cooling Fans

There are three fans in the front of the of the Megaplex II chassis. They are located on the right side of the front grill.



There are two fans in the middle of the of the Megaplex II chassis. They slide down into the slot in the middle of the chassis.



Connectors on Back of Chassis

The back of the chassis has connectors for the keyboard, mouse, serial ports (1 and 2), parallel port, and VGA port.

The Megaplex II has two sets of keyboard and mouse ports. The primary keyboard and mouse ports are located on the front of the chassis, to the left of the floppy disk drive. The keyboard and mouse ports on the back of the Megaplex II are maintenance ports.

In the picture below, the mouse and keyboard ports are on the left, the serial ports in the middle, and the parallel port and VGA port on the right.



Drive Bays on Front of Chassis

There are three drive bays on the front of the chassis. The drive bays are located beneath the floppy disk drive on the left side of the chassis.



2 Installation

Unpacking and Inspection

Unpack the Megaplex II chassis and visually inspect it for damage that might have occurred during shipment. Retain the shipping carton in case reshipment is necessary.

Remove the top cover of the chassis and inspect for component damage. If any damage has occurred, notify American Megatrends immediately. See page ii of this manual for details.

Each shipping carton should contain the following:

- a Megaplex II chassis,
 - three drive slides,
 - this manual,
 - three power cords, and
 - mounting hardware
-

Drive Installation

Before installing drives make sure that the chassis is powered down.

Step 1 Unscrew the thumbscrews on the front cover to access the drive bays.



Step 2 Unscrew the thumbscrew at the top of the mounting bracket where the new drive is to be installed.

Step 3 Flip the black latch at the bottom of the bracket down.

Cont'd

Drive Installation, Continued

Step 4 Slide the bracket out.

Step 5 Mount the disk drive on the front side of the mounting bracket.



Cont'd

Drive Installation, Continued

- Step 6** Line up the holes in the brackets and the screw holes in the back of the drive. The back of the bracket is shown below.



-
- Step 7** Insert the screws through the screw holes and the brackets and tighten all four screws.
-
- Step 8** After the drive is securely attached to the bracket, slide the bracket into the slot in the drive bay.
-
- Step 9** Tighten the thumbscrew and flip the black latch up into a vertical position.
-

Rack-Mount Installation

Before the unit is installed into a rack the following items should be taken into consideration:

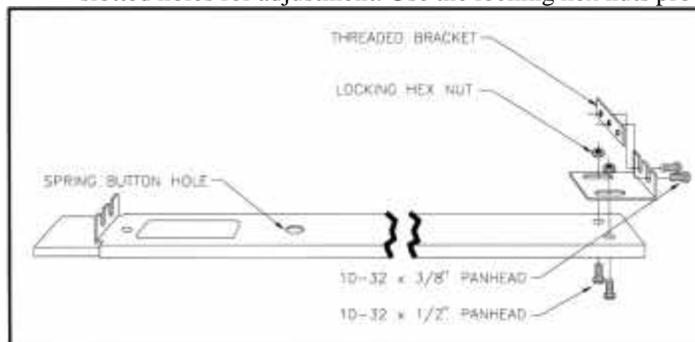
- The maximum ambient temperature of this unit is 40°C. Internal temperatures of the rack assembly should be considered for safe operation.
- Do not block power supply vents or otherwise restrict airflow when installing the unit into the rack.
- Mechanical loading of the rack should be considered so that the rack remains stable and unlikely to tip.
- Consideration to the overall loading of the branch circuit should be given before installing any equipment in a rack environment.

Note: For an add-on system, the system must be mounted in a rack with four toll removable screws.

Installation Steps Use the following procedure to install the Megaplex chassis into a standard 19" RETMA rack and apply the AC input power.

Step 1 Remove the slides from the chassis by sliding the slides out until the rear retaining spring buttons engage. Depress the buttons and slip the slides completely free from the chassis. Set the chassis aside.

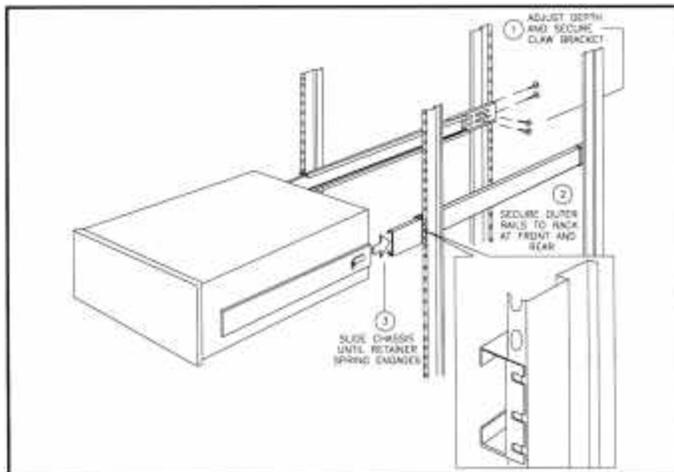
Step 2 Remove the small claw brackets from the package and loosely fasten them, with the teeth facing out, to the front and rear of the outer slides using 10-32 x 1/2" screws. Notice that the bracket has slotted holes for adjustment. Use the locking hex nuts provided to secure the screws.



Cont'd

Rack-Mount Installation, Continued

- Step 3** Position the outer rails in the rack, adjusting the claw brackets and marking the intended position of the mounting holes both on the front and rear of the rack. Tighten the screws on the claw brackets.
-
- Step 4** Bolt the front of the slides into place using 10-32 x 1/2" pan head screws. Flat head screws are also provided for racks with countersunk holes.
-
- Step 5** Bolt the rear of the slides to the rack side rails using four 10-32 x 3/8" screws. A threaded bracket is provided in case the rack does not have threaded holes. Hex nuts are often difficult to use at the rear of a rack to secure screws.
-
- Step 6** Install the chassis slides into the outer slides in the rack. Push the chassis into the rack until the rear retaining spring engages. Then press the retaining buttons and push the chassis the rest of the way into the rack.
-
- Step 7** Plug the AC power cord into the AC receptacle on the power supply module.



3 Field Replaceable Units

The field replaceable subassemblies within the Megaplex II chassis are described below. The subassemblies in this section are:

- the power supply assemblies and
- the fan module assemblies.

These assemblies can be ordered as spares from AMI.

Warning

The 4U chassis has three power inlets; each one must be removed to completely disconnect the power supply.

The 4U chassis contains a 5x20mm 250V 5A slow fuse in the power supply.

Power Supply Modules Three 440 watt power supplies support the Megaplex II chassis. The power supplies are located at the rear of the chassis. Each power supply has a power sharing board, which interfaces to the power distribution board located internally in the chassis. DC power is distributed from the power supply module to the power distribution board inside the enclosure and throughout the chassis. Each power supply has an integrated fan.

These fans along with the additional chassis fans provide cooling for the chassis. Only the chassis mounted fans are replaceable. Failure of a power supply fan requires replacement of the affected power supply. To replace a power supply follow the procedure below.

Replacing a Power Supply

The power supply module is hot pluggable. You do not have to shut down the system to replace a power supply.

Step 1 Unplug the AC power cord connected to the failed power supply module.

Step 2 Loosen the thumbscrews that secure the power supply module.

Step 3 Using the handle, remove the power supply module from the chassis.



Step 4 Replace the failed power supply module with a new power supply module and tighten the thumbscrews.

Step 5 Plug in the AC power cord.

Replacing a Fan Module

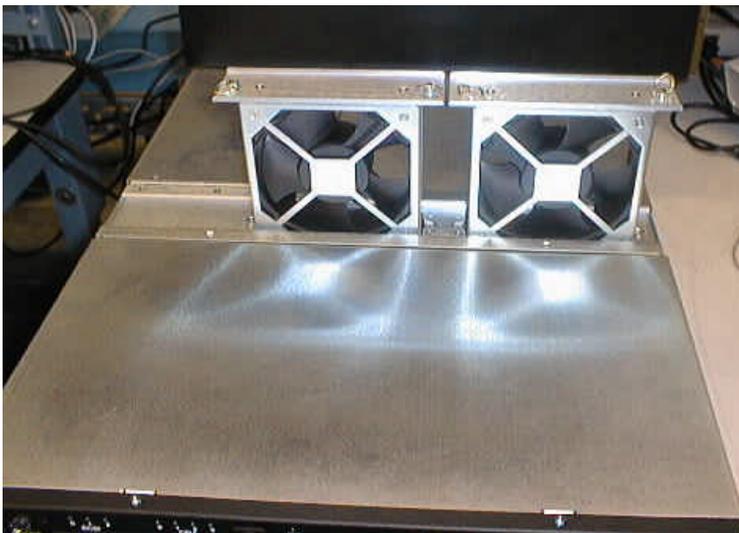
The chassis mounted fan assembly is easily removed and replaced. Should the fan assembly need replacement use the following procedure. The fan assembly is hot pluggable. You do not have to shut down the system to replace a fan.

Step 1 Open the top cover.

Step 2 Disconnect the wires and remove the fan assembly.

Step 3 Unscrew the fan to be replaced.

Step 4 Insert the new fan assembly into place and reconnect the wires.



Step 5 Install the top cover.

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