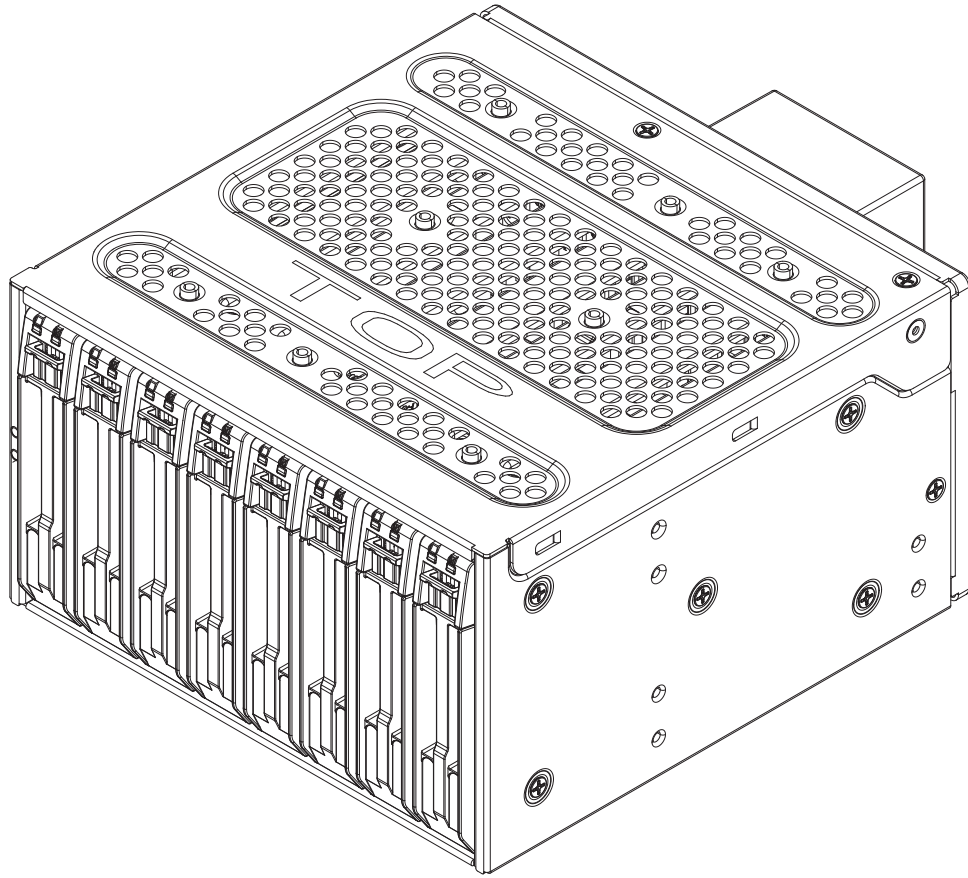# SUPER●®

M28SAB/M28SAB-OEM

MOBILE RACK

USER'S GUIDE

Rev. 1.0

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WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

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Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.supermicro.com/support/rma/).

Whenever possible, repack the mobile rack in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the mobile rack securely, using packaging material to surround the mobile rack so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Notes

Chapter 1

Safety Guidelines

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1-1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.

- Touch a grounded metal object before removing a component from the antistatic bag.

- Handle the mobile rack backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

- When handling chips or modules, avoid touching their pins.

- Put the card and peripherals back into their antistatic bags when not in use.

1-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.

- Disconnect the power cable before installing or removing any cables from the backplane.

- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

1-3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest equipment and PCB revision available at the time of publishing. The card and equipment you have received may or may not look exactly the same as the graphics shown in this manual.

Chapter 2

Introduction

2-1 Overview

This manual has been written for system integrators, PC technicians and knowledgeable PC users. It provides detailed information for the installation and use of the M28SAB mobile rack.

The Supermicro M28SAB mobile rack showcases advanced technology innovations in modular connectivity and data transferability and supplies reliable, effective, and scalable solutions for tomorrow's data communications industry.

2-2 Product Features

The M28SAB mobile rack includes the following:

- Slim design: pocket-size (5-3/4" width x 3-3/8" height).

- Supports a 8 x 2.5" small form factor hard disk drive.

- Supports up to 5V/10A (average) and 12V/10A (average).

- Supports SAS 2.0 and SATA III at 6 Gbps transfer speed.

Operating Systems

This mobile rack supports the following operating systems:

- Windows 2000, Windows XP, Windows 7 and Windows 2003.

- Linux: Red Hat and SuSE.

For the most current information on supported operating systems visit the Supermicro Web site at www.supermicro.com.

Additional Information

The M28SAB mobile rack was designed for use in certain chassis and servers or as an optional unit for storage expansion. Use the chassis or server manual for installation instructions. Use the instructions listed in this manual to use the mobile rack independent of a chassis.

The pictures or graphics shown in this user's guide were based upon the latest revision available at the time of publication of this manual. The M28SAB mobile rack may or may not look exactly the same as the graphics shown in this manual.

The availability of the SAS devices supported depends upon the readiness of firmware and hardware support.

The SAS-I28A mobile rack backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-I28A Revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

Chapter 3

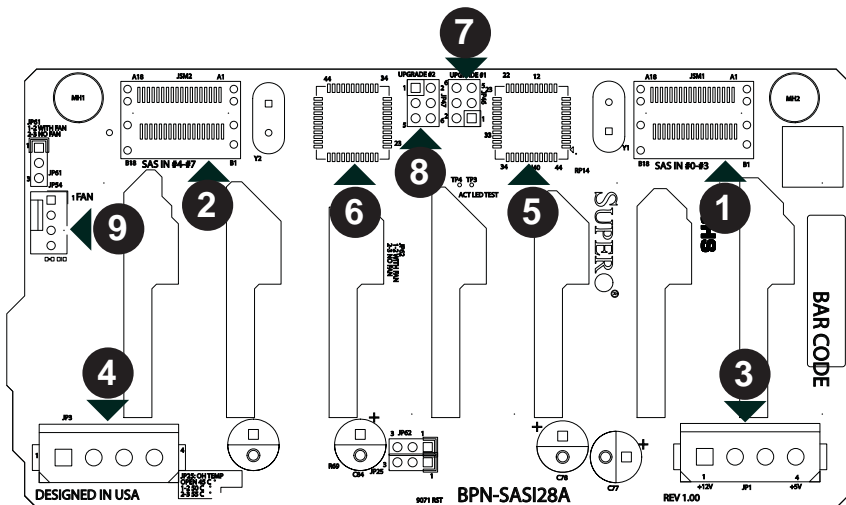# SAS-I28A Backplane Specifications

3-1   Front Connectors and Jumpers

Figure 3-1: Front Connectors and Components

Front Connectors and Components

1. SAS IN #0 - #3: JSM1

2. SAS IN #4 - #7: JSM2

3. Power connector: JP1

4. Power connector: JP3

5. MG9071 chip

6. MG9071 chip

7. Upgrade connector #1: JP46

8. Upgrade connector #2: JP47

9. Fan connector: JP54

3-2   Front Components, Connectors and Pin Definitions

#1 - #2 SAS Ports

The SAS ports are used to connect the Mini-SAS cables. The ports are designated SAS IN #0 - #3, and SAS IN #4 - #7. Each port is also compatible with SATA drives.

#3 - #4 Backplane Main Power Connectors

The 4-pin connectors, designated JP1 and JP3, provide power to the backplane. See the table on the right for pin definitions. Both of these connectors must be used at the same time.

Backplane Main Power 4-Pin Connectors	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

#5. - #6. MG9071 Chip

The MG9071 chip is an enclosure management controller chip.

#7 - #8 Upgrade Connector

The upgrade connectors are designated JP46 and JP47. The upgrade connector is for manufacturing use only.

#9 Fan Connectors

The fan connector is designated JP54.
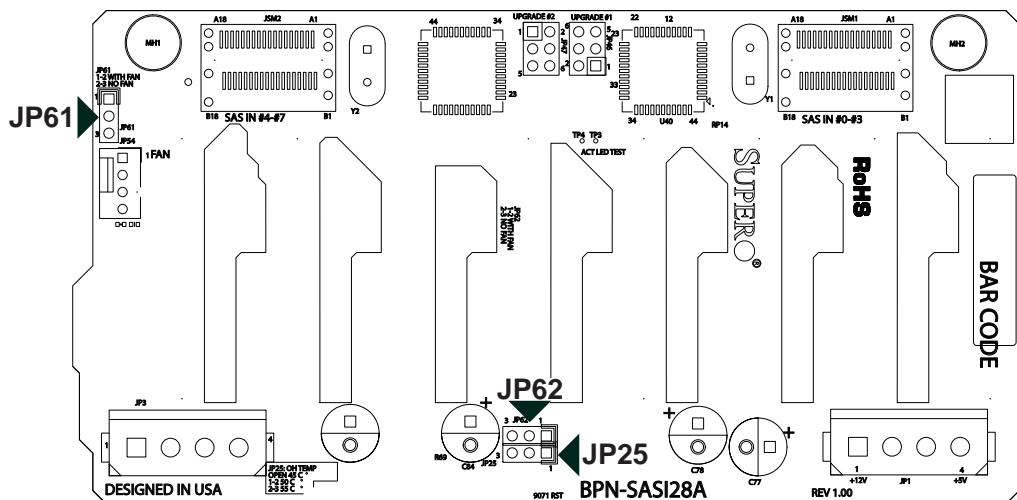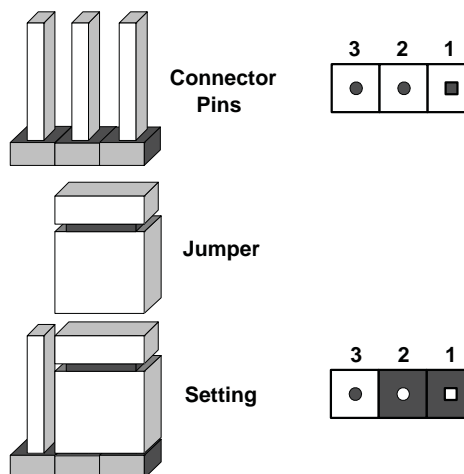
3-3   Front Jumper Locations and Pin Definitions

Figure 3-2: Front Jumper

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.

Note: On two-pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.

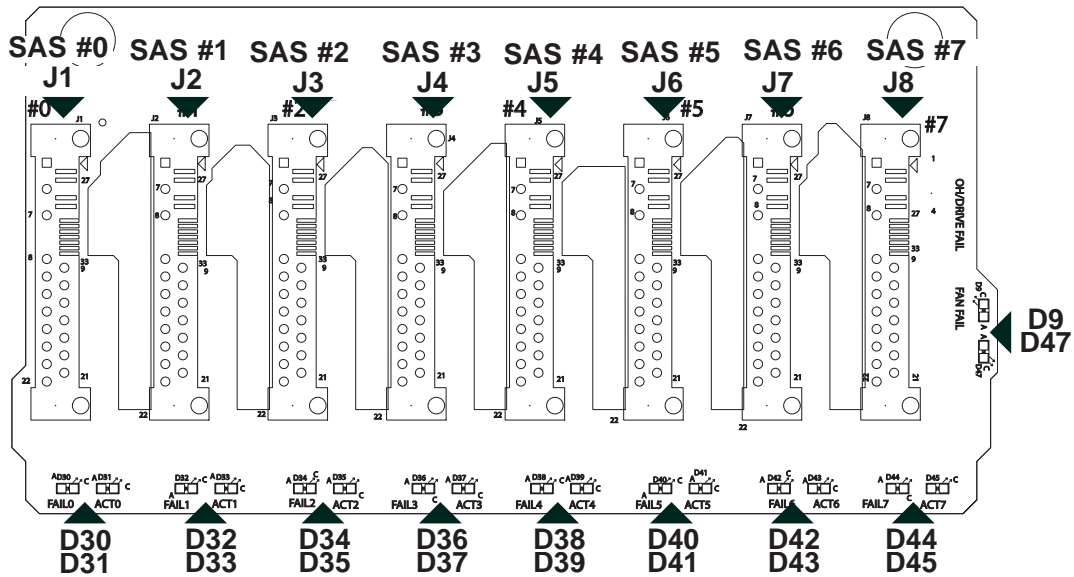| General Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP61	1-2: Fan enabled 2-3: Fan disabled	Enables or disables the fan power.
JP62	1-2: Fan enabled 2-3: Fan disabled	Enclosure monitor enable/disable.
JP25	Open: 45° C 1-2: 50° C 2-3: 55°C	Allows the overheat temperature to be adjusted.

3-4 Rear Connectors and LED Indicators

Figure 3-3: Rear Connectors and LED Indicators

Rear LEDs	
LED	**Description**
D9	OH/DRIVE FAIL
D47	FAN FAIL

Rear SAS/SATA Connectors and LED Indicators			
Rear Connector	**Hard Drive Activity LED**	**Failure LED**	**SAS Drive**
SAS #0	D31	D30	SAS/SATA HDD #0
SAS #1	D33	D32	SAS/SATA HDD #1
SAS #2	D35	D34	SAS/SATA HDD #2
SAS #3	D37	D36	SAS/SATA HDD #3
SAS #4	D39	D38	SAS/SATA HDD #4
SAS #5	D41	D40	SAS/SATA HDD #5
SAS #6	D43	D42	SAS/SATA HDD #6
SAS #7	D45	D44	SAS/SATA HDD #7

Chapter 4

Mobile Rack Installation Instructions

4-1   Shipping Lists for M28SAB and M28SAB-OEM

Examine the your order for the following parts:

M28SAB

- One M28SAB mobile rack

- One 40 mm cooling fan

- Thirty-two M3 screws

- Four round-head screws

M28SAB-OEM

- One M28SAB mobile rack

- Thirty-two M3 screws

- Four round-head screws

4-2   Tools Required

M28SAB series mobile rack assembly requires the following:

- Phillips head screwdriver

- Industry standard anti-static strap (recommended)

4-3   Other Parts

When using this mobile rack independent of a chassis, you may need the following parts.

- Two 4-pin power cords to connect the mobile rack to a power supply.

- SAS iPass cable, part numbers CBL-0108L (39 cm), CBL-0281L (75 cm) or CBL-0294L-01 are used to connect the SAS ports to the motherboard or RAID controller.

4-4   Setup and Installation Steps

Use the following list as a guide to set up and install the mobile rack. If this mobile rack is to be installed in a chassis, use the instructions in the chassis manual.

Mobile Rack Chassis Installation

1. Unpack and examine system parts.

2. Review all system and safety guidelines.

3. M28SAB: Install the system fan as described in section 4-7 of this manual (not required on M28SAB-OEM).
   M28SAB-OEM: Reset jumper JP61 to "enable", pins 2 - 3, without the fan connected.

4. Install the hard drives.

5. Connect data and power cables.

4-5   General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.

- Disconnect the power cable before installing or removing any cables from the mobile rack or backplane.

- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

4-6   Before Accessing the Mobile Rack

Prior to Accessing the Mobile Rack

1. Power-down and power supply connected to the chassis or server. In addition, unplug all power cords from the wall outlet.

2. Disconnect all necessary cables and label the cables for easy identification.

3. Use a grounded wrist strap designed to prevent static discharge when handling components.

4. Save all screws and fasteners for later use.

5. Familiarize yourself with and follow the instructions in this section.

4-7   Cooling Fan Installation (M28SAB Only)

Installing the Cooling Fan

The M28SAB mobile rack includes a cooling fan (not required on M28SAB-OEM). When using the M28SAB without installing the mobile rack in a larger unit such as a chassis, a cooling fan must be installed on the mobile rack unit.

For more information on installing the mobile rack into a chassis or server, see the documentation for your mobile rack or server. You can also visit our Web site at http://www.supermicro.com.Installing the Cooling Fan on the Mobile Rack

1. Align the mounting holes on the fan with the mounting holes in the mobile rack.

2. Attach the cooling fan cable to the fan connector.
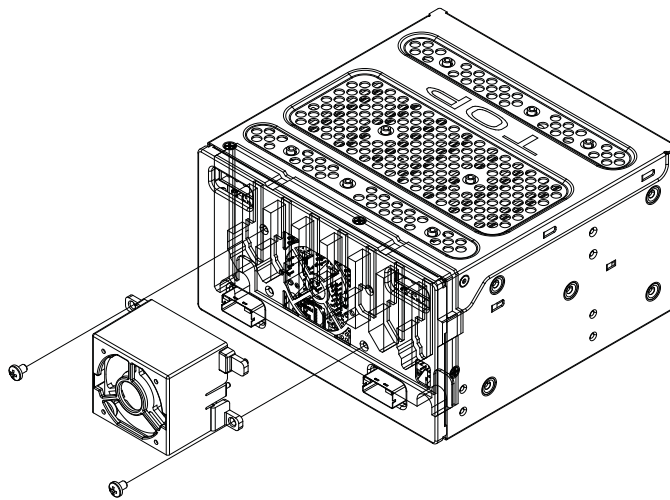
3. Secure with two screws as illustrated.

Figure 4-1: Installing the Fan on the M28SAB Mobile Rack

Fan Removal

Removing the Cooling Fan from the Mobile Rack

1. Remove the fan cable from the mobile rack by gentlypulling the cable from the backplane.

2. Remove the screws securing the fan to the mobile rack.

3. Pull the fan away from the rear of the mobile rack.

4-8   Hard Drive Installation

Each M28 mobile rack includes dummy trays that act as place holders for hard drives. Before using the mobile rack, you must install hard drives into the drive carriers. Hard drives are sold separately.
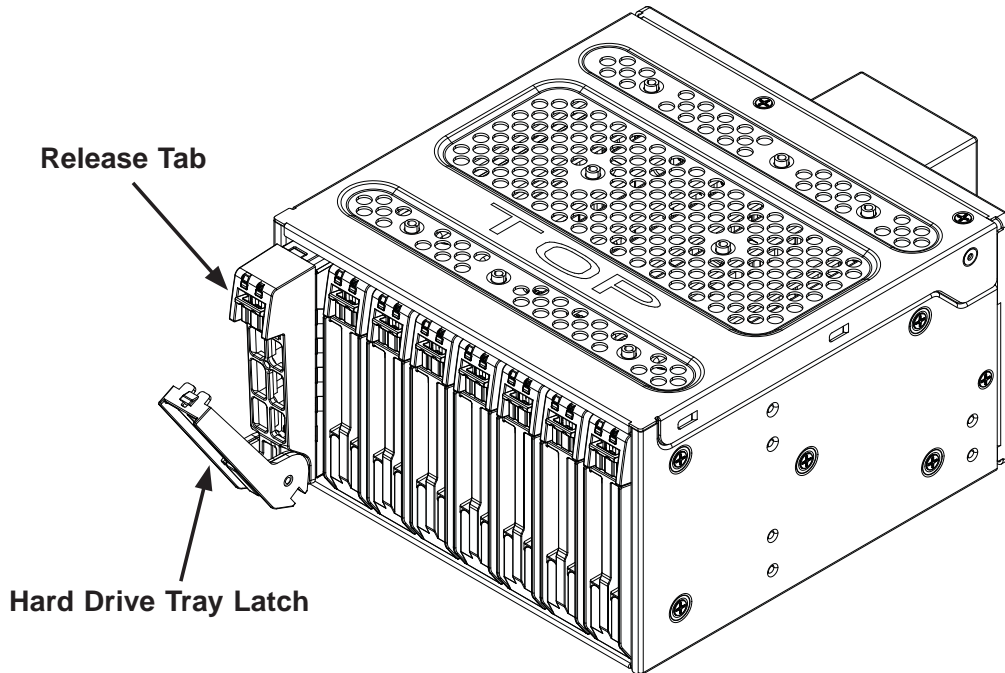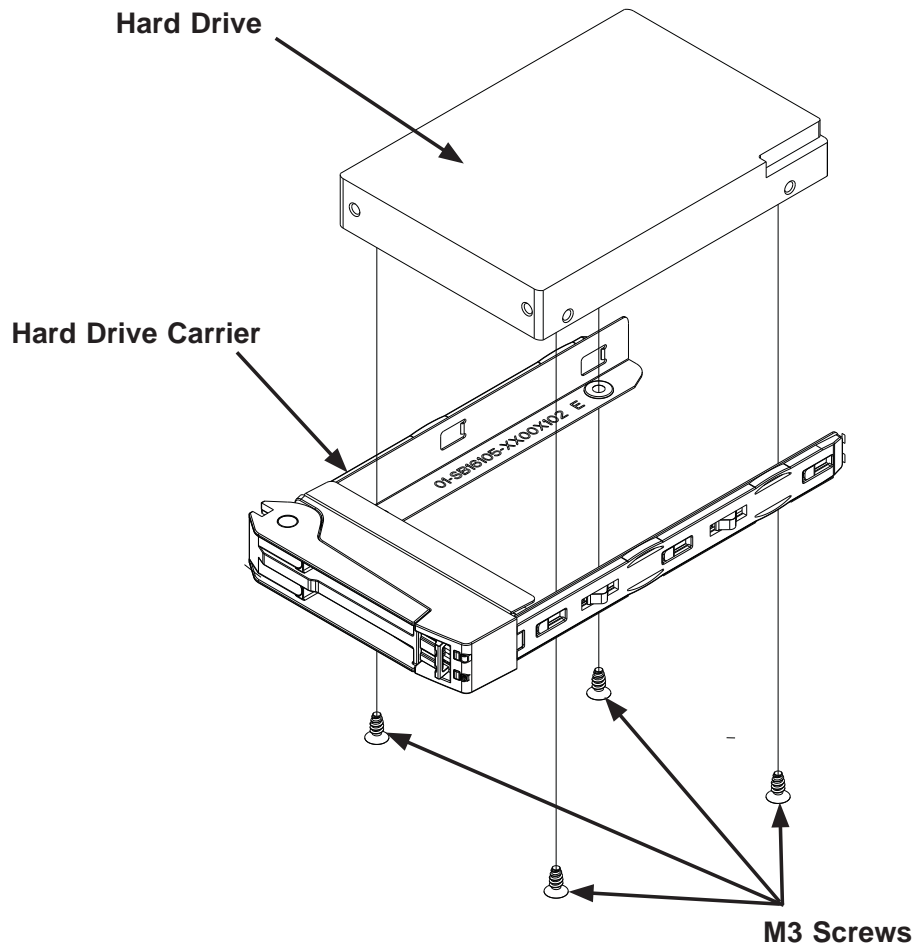
Release Tab

Hard Drive Tray Latch

Figure 4-2: Mobile Rack with Hard Drive Trays

Installing Hard Drives into the Mobile Rack

1.   Press the release tabs to open the hard drive carrier latch.

2.   Using the latch as a handle, pull the drive carrier from the hard drive.

⚠️   Warning! Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro Web site at www.supermicro.com

Hard Drive

Hard Drive Carrier

M3 Screws

Figure 4-3: Hard Drive and Hard Drive Tray

3. Place a 2.5" hard drive in the hard drive carrier.

4. Align the hard drives to the rear of the hard drive tray.

5. Secure the hard drive to the tray using four M3 screws (as illustrated).

6. Using the hard drive tray latch as a handle, slide the hard drive into the mobile rack.

7. Close the hard drive tray handle to lock the hard drive into place.

8. Repeat steps 1-8 for each hard drive that you will install into the mobile rack.

4-9 Connect Data and Power Cables

Connecting the Cables

1. Connect the SAS cables to the mobile rack. A longer SAS cable may be required (see the recommended cables listed earlier in this manual).

2. Connect the power cables from the chassis power supply. A power cable extension may be required.

4-10 Advanced Configuration

Use the following instructions in the unlikely event that you must access the jumpers, buzzer, or other backplane components.
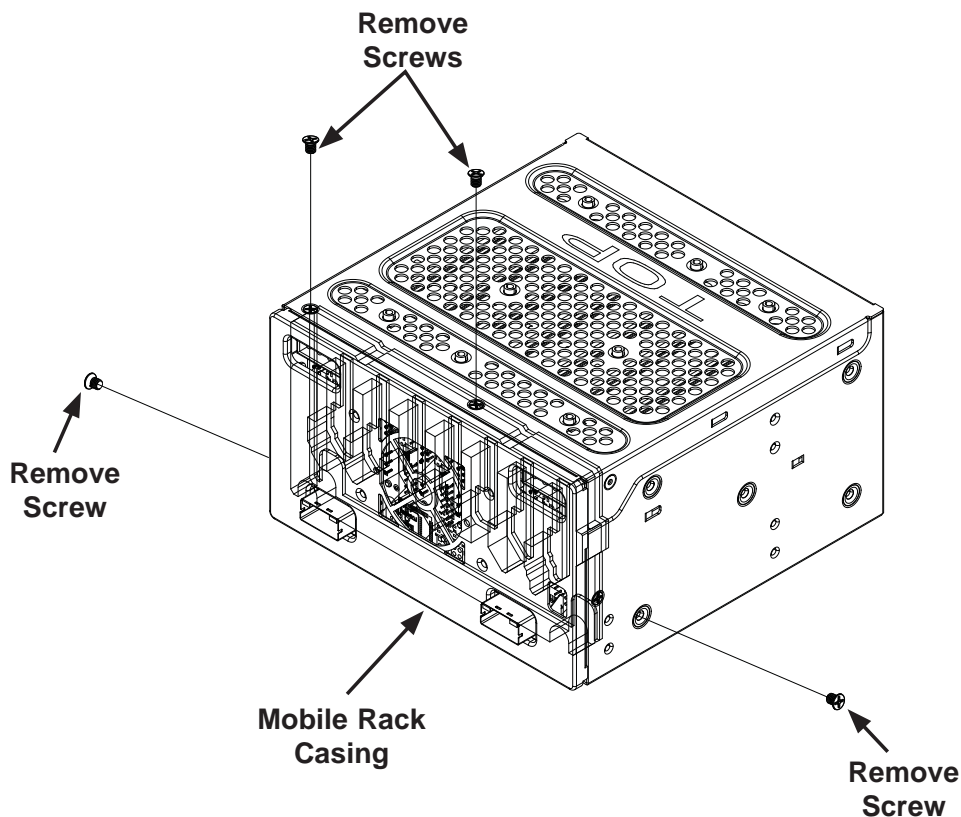

Remove Screws

Remove Screw

Mobile Rack Casing

Remove Screw

Figure 4-4: Mobile Rack and Rear Casing

Accessing the Mobile Rack Backplane (Optional)

1. Remove the two screws that secure the casing to the mobile rack.

2. Slide the casing downward and remove it from the mobile rack.

Notes

Disclaimer (cont.)

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