The information in this User’s Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. Please Note: For the most up-to-date version of this manual, please see our web site at www.supermicro.com.

Super Micro Computer, Inc. (“Supermicro”) reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software and documentation, is the property of Supermicro and/or its licensors, and is supplied only under a license. Any use or reproduction of this product is not allowed, except as expressly permitted by the terms of said license.

IN NO EVENT WILL SUPERMICRO BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPERMICRO SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Super Micro's total liability for all claims will not exceed the price paid for the hardware product.

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. “Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate”

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.

Manual Revision 2.0
Release Date: November 5, 2013

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document.

Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2013 by Super Micro Computer, Inc.
All rights reserved.
Printed in the United States of America
Preface

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC823 chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro’s SC823 chassis is built on the foundation of the critically acclaimed SC822 chassis series. With advanced airflow/thermal-control design, the SC823 is optimized for the next generation platforms.

This document lists compatible parts and configurations available when this document was published. Always refer to our Web site for updates on supported parts and configurations.

Note: There are SC823 legacy models other than the one described in this manual, that are no longer available. A separate legacy manual describes them.
Manual Organization

Chapter 1 Introduction

The introduction provides a summary of the main components included with this chassis. This chapter also includes contact information.

Chapter 2 Warning Statements for AC Systems

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

Chapter 3 System Components

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 4 System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5 Chassis Setup and Maintenance

Refer to this chapter for procedures for installing, removing, or reconfiguring components in your chassis.

Chapter 6 Rack Installation

Refer to this chapter for procedures for installing the chassis into a rack environment.
Appendix A Chassis Cables
This section references cables, which are compatible with your SC823 system.

Appendix B Power Supply Specifications
This chapter lists supported power supply information for your SC823 system.

Appendix C SAS-823TQ Backplane Specifications
## Contents

### Chapter 1 Introduction
- 1-1 Overview .......................................................... 1-1
- 1-2 Shipping List......................................................... 1-1
- 1-3 Contacting Supermicro........................................ 1-2
- 1-4 Returning Merchandise for Service....................... 1-3

### Chapter 2 Standardized Warning Statements for AC Systems
- 2-1 About Standardized Warning Statements.............. 2-1
  - Warning Definition.................................................. 2-1
  - Installation Instructions........................................... 2-4
  - Circuit Breaker......................................................... 2-5
  - Power Disconnection Warning................................. 2-6
  - Equipment Installation............................................. 2-8
  - Restricted Area......................................................... 2-9
  - Battery Handling..................................................... 2-10
  - Redundant Power Supplies....................................... 2-12
  - Backplane Voltage.................................................. 2-13
  - Comply with Local and National Electrical Codes....... 2-14
  - Product Disposal...................................................... 2-15
  - Hot Swap Fan Warning............................................. 2-16
  - Power Cable and AC Adapter................................... 2-18

### Chapter 3 Chassis Components
- 3-1 Overview ......................................................... 3-1
- 3-2 Components........................................................ 3-1
  - Drives..................................................................... 3-1
  - Motherboard.......................................................... 3-1
  - Backplane.................................................................. 3-1
  - Power Supply.......................................................... 3-1
  - Front Interface........................................................ 3-1
  - Fans ....................................................................... 3-2
  - Air Shroud .................................................................. 3-2
  - Mounting Rails......................................................... 3-2
- 3-3 Where to get Replacement Components................. 3-2

### Chapter 4 System Interface
- 4-1 Overview .......................................................... 4-1
- 4-2 Control Panel Buttons........................................... 4-2
### Chapter 5 Chassis Setup and Maintenance

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-1 Overview</td>
<td>5-1</td>
</tr>
<tr>
<td>5-2 Removing Power from the System</td>
<td>5-1</td>
</tr>
<tr>
<td>5-3 Removing the Chassis Cover</td>
<td>5-2</td>
</tr>
<tr>
<td>5-4 Installing Hard Drives</td>
<td>5-3</td>
</tr>
<tr>
<td>5-5 Installing the Motherboard</td>
<td>5-5</td>
</tr>
<tr>
<td>Optional Standoffs</td>
<td>5-5</td>
</tr>
<tr>
<td>I/O Shield Installation Procedure</td>
<td>5-5</td>
</tr>
<tr>
<td>5-6 Installing Expansion Cards</td>
<td>5-7</td>
</tr>
<tr>
<td>5-7 Installing the Air Shroud</td>
<td>5-8</td>
</tr>
<tr>
<td>Checking the Airflow</td>
<td>5-9</td>
</tr>
<tr>
<td>Installation Complete</td>
<td>5-9</td>
</tr>
<tr>
<td>5-8 System Fans</td>
<td>5-10</td>
</tr>
<tr>
<td>5-9 Power Supply</td>
<td>5-11</td>
</tr>
</tbody>
</table>

### Chapter 6 Rack Installation

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-1 Overview</td>
<td>6-1</td>
</tr>
<tr>
<td>6-2 Unpacking the System</td>
<td>6-1</td>
</tr>
<tr>
<td>6-3 Preparing for Setup</td>
<td>6-1</td>
</tr>
<tr>
<td>Choosing a Setup Location</td>
<td>6-1</td>
</tr>
<tr>
<td>6-4 Warnings and Precautions</td>
<td>6-2</td>
</tr>
<tr>
<td>Rack Precautions</td>
<td>6-2</td>
</tr>
<tr>
<td>General Server Precautions</td>
<td>6-2</td>
</tr>
<tr>
<td>Rack Mounting Considerations</td>
<td>6-3</td>
</tr>
<tr>
<td>Ambient Operating Temperature</td>
<td>6-3</td>
</tr>
<tr>
<td>Reduced Airflow</td>
<td>6-3</td>
</tr>
<tr>
<td>Mechanical Loading</td>
<td>6-3</td>
</tr>
<tr>
<td>Circuit Overloading</td>
<td>6-3</td>
</tr>
<tr>
<td>Reliable Ground</td>
<td>6-3</td>
</tr>
<tr>
<td>6-5 Rack Mounting Instructions</td>
<td>6-4</td>
</tr>
<tr>
<td>Identifying the Sections of the Rack Rails</td>
<td>6-4</td>
</tr>
<tr>
<td>Locking Tabs</td>
<td>6-5</td>
</tr>
<tr>
<td>Releasing the Inner Rail</td>
<td>6-5</td>
</tr>
<tr>
<td>Installing The Inner Rails on the Chassis</td>
<td>6-6</td>
</tr>
<tr>
<td>Installing the Outer Rails on the Rack</td>
<td>6-7</td>
</tr>
<tr>
<td>Standard Chassis Installation</td>
<td>6-8</td>
</tr>
</tbody>
</table>
Appendix A SC823 Chassis Cables
A-1 Overview ............................................................................................................. A-1
A-2 Cables Included (SAS/SATA) ............................................................................... A-1
A-3 Compatible Cables ................................................................................................ A-2
    Alternate SAS/SATA Cables ............................................................................... A-2
    Extending Power Cables .................................................................................. A-3

Appendix B SC823 Power Supply Specifications

Appendix C BPN-SAS-823T and BPN-SAS-823TQ Backplanes
C-1 ESD Safety Guidelines .......................................................................................... C-1
C-2 General Safety Guidelines ..................................................................................... C-1
C-3 An Important Note to Users ................................................................................ C-2
C-4 Introduction to BPN-SAS-823T/BPN-SAS-823TQ Backplanes ......................... C-2
C-5 Front Connectors .................................................................................................. C-3
C-6 Front Jumpers and Pin Definitions ....................................................................... C-6
    Explanation of Jumpers .................................................................................... C-6
    Jumper Settings (SAS-823T Only) ..................................................................... C-8
C-7 Rear Connectors and LED Indicators .................................................................... C-9
Chapter 1

Introduction

1-1 Overview

Supermicro's SC823 2U chassis features a unique and highly-optimized design, with advanced thermal airflow to support dual processors. The chassis is equipped with a high-efficiency 650 Watt power supply.

1-2 Shipping List

Visit the Supermicro Web site for the latest shipping lists and part numbers for your particular chassis model at http://www.supermicro.com

<table>
<thead>
<tr>
<th>Model</th>
<th>HDD</th>
<th>I/O Slots</th>
<th>Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC823TQ-653LPB</td>
<td>6x SATA</td>
<td>7x LP</td>
<td>650W (Gold level cert.)</td>
</tr>
</tbody>
</table>

LP: Low-profile

Note: A complete list of safety warnings is provided on the Supermicro web site at http://www.supermicro.com/about/policies/safety_information.cfm
1-3  Contacting Supermicro

Headquarters
Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.
Tel: +1 (408) 503-8000
Fax: +1 (408) 503-8008
Email: marketing@supermicro.com (General Information)
support@supermicro.com (Technical Support)
Web Site: www.supermicro.com

Europe
Address: Super Micro Computer B.V.
Het Sterrenbeeld 28, 5215 ML
's-Hertogenbosch, The Netherlands
Tel: +31 (0) 73-6400390
Fax: +31 (0) 73-6416525
Email: sales@supermicro.nl (General Information)
support@supermicro.nl (Technical Support)
rma@supermicro.nl (Customer Support)
Web Site: www.supermicro.com

Asia-Pacific
Address: Super Micro Computer, Inc.
3F, No. 150, Jian 1st Rd.
Zhonghe Dist., New Taipei City 235
Taiwan (R.O.C)
Tel: +886-(2) 8226-3990
Fax: +886-(2) 8226-3992
Email: support@supermicro.com.tw
Tel: +886-(2)-8226-3990
Web Site: www.supermicro.com.tw
1-4 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 chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis 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 2

Standardized Warning Statements for AC Systems

2-1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our web site at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition

Warning!

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符号代表危险。

您正处于可能身体可能会受损伤的工作环境中。在您使用任何设备之前，请注意触电的危险，并且要熟悉预防事故发生的标准工作程序。请依照每一注意事项后的号码找到相关的翻译说明内容。
Warnung

WICHTIGE SICHERHEITSHINWEISE


BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d’avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.
Chapter 2: Warning Statements for AC Systems

تحذير! هذا الرمز يعني خطر لنك في حالة يمكن أن تسبب في إصابة جسدية.
قبل أن تعمل على أي معدات، كن على علم بالمخاطر الناجمة عن الدوائر الكهربائية.
وكل على دراية بالممارسات الوقائية لمنع وقوع أي حوادث.
استخدم رقم البيان المنصوص في نهاية كل تحذير لتحديد العثور ترجمتها.

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오.

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk leetsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES
Installation Instructions

Warning!
Read the installation instructions before connecting the system to the power source.

Warning
Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!
Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention
Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.
**Circuit Breaker**

**Warning!**

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

**Circuit Breaker**

**Warning!**

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V, 20 Aを超えないことを確認下さい。

警告

此产品的短路（过载电流）保护由建筑物的供电系统提供，确保短路保护设备的额定电流不大于250V, 20A。

警告

此产品的短路（过载电流）保护由建筑物的供电系统提供，确保短路保护设备的额定电流不大于250V, 20A。

**Warnung**


¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à : 250 V, 20 A.

**주의**

이 제품은 건물의 설치에 의존하여 단락 (과전류) 보호를 제공합니다. 보호 장치의 정격이 250 V, 20 A보다 높지 않을 것을 확인하십시오.

경고

이 제품의 단락 (과전류) 보호는 건물의 전원 시스템을 기반으로 해야 합니다. 단락 보호 장치의 정격이 250V, 20A보다 높지 않아야 합니다.

**주요**

이 제품은 건물의 설치에 의존하여 단락 (과전류) 보호를 제공합니다. 보호 장치의 정격이 250 V, 20 A보다 높지 않을 것을 확인하십시오.

경고

이 제품의 단락 (과전류) 보호는 건물의 전원 시스템을 기반으로 해야 합니다. 단락 보호 장치의 정격이 250V, 20A보다 높지 않아야 합니다.
Power Disconnection Warning

Warning!

The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

警告

在你打开机箱并安装或移除内部器件前，必须将系统完全断电，并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.
¡Advertencia!
El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention
Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de système.

¡Atención!
La unidad debe estar desconectada de todas las fuentes de energía y del cable eléctrico antes de tener acceso al interior del chasis para instalar o para quitar componentes del sistema.

¡Atención!
النظام يجب أن يكون متصلًا بالمناطق المختلفة مع المصادر الكهربائية والتيارات الكهربائية قبل الوصول إلى المناطق الداخلية للهيكل لتثبيت أو إزالة مكونات الجهاز.

¡Atención!
시스템에 부품들을 장착하거나 제거하기 위해서는 세시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing
Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen.
Equipment Installation

Warning!
Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

¡Advertencia!
Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention
Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

警告
只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告
只有经过受训且具資格人員才可安裝、更換與維修此設備。

경고!
훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.
Chapter 2: Warning Statements for AC Systems

Warning!

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此装置仅限安装于进出管制区域，进出管制区域係指仅能以特殊工具、锁头及鑰匙或其他安全方式才能进入的区域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.
Warning!

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.
Chapter 2: Warning Statements for AC Systems

Warnung

Attention
Danger d’explosion si la pile n’est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!
Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

경고!
배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing
Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.
Redundant Power Supplies

Warning!
This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

危険
このユニットは複数の電源装置が接続されている場合があります。ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

¡Advertencia!
Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

警告
此装置连接的电源可能不只一个，必须切断所有电源才能停止对装置的供电。

Warnung
Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!
Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention
Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

سام كييم يتور مسافك أتجر
لايتهدي يم يم مهبيمر أتجر شل سفم. يم يمسيم أت هيجيمر عل مهنا لودك
أت هيجيمر.
Chapter 2: Warning Statements for AC Systems

Backplane Voltage

Warning!
Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

경고!
이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing
Deze eenheid kan meer dan één stroomtoeveraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

¡Advertencia!
Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention
Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.
Comply with Local and National Electrical Codes

Warning!

Installation of the equipment must comply with local and national electrical codes.

경고!
시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다. 서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.
Product Disposal

Warning!
Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄
この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

Warnung
Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.
Hot Swap Fan Warning

Warning!
The fans might still be turning when you remove the fan assembly from the chassis.
Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention
La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention
La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention
La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention
La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention
La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.
Chapter 2: Warning Statements for AC Systems

Warnung


¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite el montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador.

Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה!

כאשר מסירים את החלק המאואר מחומרים, יַקְחֶם המאוארים עָרָיִן וּׁעְבָּדְרוּ. יִשָּׁלְחוּ לַחַרְבָּק לְמַרְחֲק מִזְּהָבַּת את האצותות וכלי עבודה אחרים מִפְּלֶס מְפֶתָּחִים לְחַרְבָּק המאוארים.

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع وفقا للفتحات الأخرى من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

세시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.
**Power Cable and AC Adapter**

**Warning!**

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA-certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに記載)をSupermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器。使用其他线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器。使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

**Warnung**


¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.
Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

AC штеллем мотанеи

אזהרה!
נשך לתקין את המוצר, יש להשתמש בבבלים מתאימים AC והמתאימים AC שתי,row וה𝑒נפף ל.mime. שים לב עלarrant חזרה לগן להשתמש עם ק 조금 חשמלי.российית לשימש לעדכתיים השמאל וה ucfirst, keyします נסורה להשתמש בבבלים מוטסמכים - UL - או CSA (כשכמープ文化创意 עלידיםanches UL/CSA עבור כל מוצרי השמאל אחור שלם צוים על ידי סופרמייקרו בלבול.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.
3-1 Overview

This chapter describes the most common components included with your chassis. For more information, see the installation instructions later in this manual and the Supermicro web site.

3-2 Components

Drives

The chassis features six hard disk drive bays for 3.5" SAS or SATA drives, accessible from the front and capable of hot-swap. A full height peripheral 5.25" bay is also included. A slim DVD drive and a floppy drive are optional.

Motherboard

The SC823 supports motherboards of size 12" x 13" E-ATX and 12" x 10" ATX. It supports single or dual Intel or AMD processors.

Backplane

The backplane supports SAS/SATA hard disk drives. It is described in detail in the appendix at the end of this manual.

Power Supply

The chassis includes a 650W AC-DC high efficiency power supply that is 80 Plus Gold level certified.

Front Interface

The front of the chassis offers a control panel with power controls and LED status indicators. Two USB ports are optional.
Fans
The SC823 chassis comes with four 80mm 6300 RPM fans powered from the motherboard.

Air Shroud
An air shrouds is included that funnels air directly to where cooling is needed.

Mounting Rails
The chassis can be mounted in a rack with slide-out rails.

3-3 Where to get Replacement Components

Though not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors / System Integrators / Resellers. A list of Supermicro Authorized Distributors / System Integrators / Reseller can be found at: http://www.supermicro.com. Click the Where to Buy link.
4-1 Overview

There are several LEDs on the front chassis control panel, as well as others on the drive carriers. These LEDs are designed to keep you constantly informed of the overall status of the system, as well as the activity and health of specific components. Most SC823 models include two buttons on the control panel, a reset button and an on/off switch. This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

Figure 4-1: Chassis User Interface
4-2 Control Panel Buttons

There are two push buttons located on the front of the chassis. These are, in order from left to right, a reset button and a power on/off button.

- **Reset**: The reset button is used to reboot the system.

![Reset button icon]

- **Power**: The main power button is used to power-on or power off the system. Turning off the system power with this button removes the main power, but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

4-3 Control Panel LEDs

The control panel located on the front of the SC823 chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Information LED**: Alerts operator of several states, as noted in the table below.

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuously on and red</td>
<td>An overheat condition has occurred. (This may be caused by cable congestion.)</td>
</tr>
<tr>
<td>Blinking red (1Hz)</td>
<td>Fan failure, check for an inoperative fan.</td>
</tr>
<tr>
<td>Blinking red (0.25Hz)</td>
<td>Power failure, check for a non-operational power supply.</td>
</tr>
<tr>
<td>Solid blue</td>
<td>Local UID has been activated. Use this function to locate the server in a rack mount environment.</td>
</tr>
<tr>
<td>Blinking blue</td>
<td>Remote UID is on. Use this function to identify the server from a remote location.</td>
</tr>
</tbody>
</table>
• **NIC2**: Indicates network activity on GLAN2 when flashing.

• **NIC1**: Indicates network activity on GLAN1 when flashing.

• **HDD**: Indicates hard disk drive or DVD drive activity when flashing.

• **Power**: Indicates power is being supplied to the system’s power supply units. This LED should normally be illuminated when the system is operating.

### 4-4 Drive Tray LEDs

Each SAS/SATA drive tray has two LEDs.

• **Green**: Each Serial ATA drive carrier has a green LED. When illuminated, this green LED (on the front of the SATA drive carrier) indicates drive activity. A connection to the SATA backplane enables this LED to blink on and off when that particular drive is being accessed.

• **Red**: The red LED indicates a SAS/SATA drive failure. If one of the SAS/SATA drives fail, you should be notified by your system management software.
Notes
5-1 Overview

This chapter covers the steps required to install components and perform maintenance on them. The only tool required is a Phillips screwdriver.

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warning and precautions listed in the instructions.

![Chassis Rear View](image_url)

**Figure 5-1. Chassis Rear View**

5-2 Removing Power from the System

Before performing most setup or maintenance tasks, use the following procedure to ensure that power has been removed from the system.

1. Use the operating system to power down the system, following the on-screen prompts.

2. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply.

3. Disconnect the cord from the power strip or wall outlet.
5-3 Removing the Chassis Cover

Removing the Chassis Cover the chassis cover:

1. Press the release tabs simultaneously to release the cover from the locked position.

2. Slide the cover toward the rear of the chassis.

3. Lift the cover off the chassis.

Note: Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.
5-4 Installing Hard Drives

The chassis supports six SAS or SATA hard drives, which may be removed without powering-down the system.

Removing Hot-Swappable Hard Drive Trays from the Chassis

1. Press the release button on the drive tray.
2. The drive tray handle will extend.
3. Grasp the handle and gently pull the drive tray out of the chassis.

Figure 5-3. Removing a Hard Drive Tray
Installing a Hard Drive to the Drive Tray

1. Remove the two screws (A) securing the dummy drive (B) to the hard drive tray (C).
2. Remove the dummy drive from the hard drive tray.

**Caution:** Except for short periods of time while swapping hard drives, do not operate the server with the hard drive bays empty.

3. Place the hard drive tray on a flat, stable surface such as a desk, table, or work bench.
4. Slide the hard drive (D) into the tray with the printed circuit board side facing downward.
5. Carefully align the mounting holes in the hard drive and the tray. Make sure the bottom of the hard drive and bottom of the hard drive tray are flush.
6. Secure the hard drive using all four of the screws provided (E).
7. Slide the drive tray into the hard drive bay of the chassis.
8. Close the drive carrier by gently pushing the drive tray handle back into the closed position.

**Note:** Only enterprise level hard drives are recommended for use in Supermicro chassis.
5-5 Installing the Motherboard

Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC823 chassis includes optional standoffs for motherboard installation. These standoffs accept the rounded Phillips head screws included in the SC823 accessories packaging.

To use an optional standoff, you must place the hexagonal screw through the bottom of the chassis and secure the screw with the hexagon nut.

I/O Shield Installation

The I/O shield holds the motherboard ports in place. Install the I/O shield before installing the motherboard.

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.

2. With the illustrations facing the outside of the chassis, place the shield into the space provided on the rear of the chassis.

Figure 5-5. I/O Shield Placement

Installing the I/O Shield
Procedure

Installing the Motherboard

1. Review the documentation that came with your motherboard and become familiar with component placement, requirements, precautions, and cable connections.

2. As required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this:
   a. Place a hexagonal standoff screw through the bottom the chassis.
   b. Secure the screw with the hexagon nut.

3. Compare the mounting holes in the motherboard to those in the chassis, then add and remove optional standoffs as needed.

4. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight inch-pounds of torque when tightening down the motherboard.

5. Secure the CPUs, heatsinks, and other components to the motherboard as described in the motherboard documentation.

6. Connect the cables between the motherboard, backplane, chassis, front panel, and power supply, as needed. Also, the fans may be temporarily removed to allow access to the backplane ports.
5-6 Installing Expansion Cards

The SC823 chassis provides seven PCI card slots for low-profile expansion cards.

1. Disconnect the power supply, lay the chassis on a flat surface, and open the chassis cover.

2. Remove the screw holding the PCI slot cover in place for each slot. Keep this screw for later use.

3. Connect the expansion cards to the motherboard.

4. Secure each card to the chassis using the card’s L-bracket and the screw that was previously removed.
5-7 Installing the Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC823 chassis air shroud does not require screws to install.

Installing the Air Shroud

1. Lay the chassis on a flat, stable surface.
2. If necessary, move any cables that interfere with the air shroud placement.
3. Insert the two hooks (A) on front of the air shroud into their corresponding holes (B) in the chassis. The air shroud fits just behind the fan rack.

Figure 5-7. Installing the Air Shroud
Checking the Airflow

**Figure 5-8. Air Shroud in Place**

*Checking the Server Airflow*

- Make sure there are no objects to obstruct airflow in and out of the server.
- Do not operate the server without drives or drive trays in the drive bays. Use only recommended server parts.
- Make sure no wires or foreign objects obstruct the airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

The control panel LEDs inform you of the system status. See Chapter 4: *System Interface* for details.

**Installation Complete**

In most cases, the chassis power supply and fans are pre-installed. In the unlikely event that a system fan or power supply needs to be replaced, continue on to the *System Fans* and *Power Supply* sections of this manual.
5-8 System Fans

Four heavy-duty fans provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis internal temperature.

**Replacing a System Fan**

1. If necessary, open the chassis while the power is running to determine which fan needs to be replaced. (Never run the server for an extended period of time with the chassis open.)

2. Power down the system as described in section 5-2.

3. Remove the failed fan's power cord from the motherboard.

4. Press the fan release tab.

5. Lift the failed fan up and out of the chassis.

6. Place the new fan into the vacant space in the rack while making sure that the arrows on the top of the fan (indicating air direction) toward the motherboard.

7. Reconnect the fan to the motherboard.

8. Power up the system and check that the fan is working properly before replacing the chassis cover.
5-9 Power Supply

This power supply is auto-switching capable. This enables it to automatically sense and operate at a 100v to 240v input voltage. An amber light is illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Changing the Power Supply

1. If necessary, power-down the system as described in section 5-2. Unplug the power cord from the power supply module.

2. Remove the four screws securing the power supply to the chassis and set these aside for future use.

3. Removed the failed power module from the power bay.

4. Gently push the new power supply module into the power bay.

5. Secure the power module into the chassis using the four screws which were previously set aside.

6. Plug the power cord into the power module and power-up the system.
Chapter 6

Rack Installation

6-1 Overview

This chapter provides directions for setting up your system and procedures for installing your chassis in a rack environment.

6-2 Unpacking the System

Inspect the box which the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, you should file a damage claim with the carrier who delivered it.

6-3 Preparing for Setup

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. The system needs to be placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

The box your chassis was shipped in should include two sets of rail assemblies and the mounting screws needed for installing the system into the rack. Also included is an optional square hole to round hole converter bracket, for use in racks with round mounting holes. Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow.

Choosing a Setup Location

• Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).

• Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

• This system should be installed in a restricted access location, such as a dedicated equipment room or service closet.
6-4 Warnings and Precautions

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.

- In single rack installations, stabilizers should be attached to the rack.

- In multiple rack installations, the racks should be coupled together.

- Always make sure that the rack is stable before extending a component from the rack.

- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.

- Determine the placement of each component in the rack before you install the rails.

- Install the heaviest server components on the bottom of the rack first, and then work upwards.

- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.

- Allow the hot plug hard drives and power supply modules to cool before touching them.

- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.
Rack Mounting Considerations

**Ambient Operating Temperature**

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer’s maximum rated ambient temperature (TMRA).

**Reduced Airflow**

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

**Mechanical Loading**

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

**Circuit Overloading**

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

**Reliable Ground**

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

**Warning:** To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
6-5 Rack Mounting Instructions

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **Note:** This rail will fit a rack between 28.25" and 33" deep.

**Identifying the Sections of the Rack Rails**

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of three sections: An inner chassis rail which secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis.

![Diagram of rail assembly](image)

**Figure 6-1. Identifying the Outer Rail, Middle Rail and Inner Rails (Left Rail Assembly Shown)**
**Locking Tabs**

Each inner rail has a locking tab. This tab locks the chassis into place when installed and pushed fully into the rack. These tabs also lock the chassis in place when fully extended from the rack. This prevents the server from coming completely out of the rack when the chassis is pulled out for servicing.

**Releasing the Inner Rail**

*Releasing Inner Rail from the Outer Rails*

1. Identify the left and right outer rail assemblies as described on page 6-4.

2. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.

3. Press the locking tab down to release the inner rail.

4. Repeat steps 1-3 for the second outer rail.

![Figure 6-2. Extending and Releasing the Inner Rail](image-url)
Installing The Inner Rails on the Chassis

1. Confirm that the left and right inner rails have been correctly identified.

2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.

3. Slide the inner rail forward toward the front of the chassis until the rail clicks into the locked position, which secures the inner rail to the chassis.

4. Secure the inner rail to the chassis with the screws provided.

5. Repeat steps 1 through 4 above for the other inner rail.

**Warning:** Do not pick up the server by the front handles. They are designed to pull the system from a rack only.
Installing the Outer Rails on the Rack

**Installing the Outer Rails**

1. Press upward on the locking tab at the rear end of the middle rail.

2. Push the middle rail back into the outer rail.

3. Hang the hooks of the front of the outer rail onto the slots on the front of the rack. If necessary, use screws to secure the outer rails to the rack, as illustrated above.

4. Pull out the rear of the outer rail, adjusting the length until it fits within the posts of the rack.

5. Hang the hooks of the rear portion of the outer rail onto the slots on the rear of the rack. If necessary, use screws to secure the rear of the outer rail to the rear of the rack.

6. Repeat steps 1-5 for the remaining outer rail.

**Stability hazard.** The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.
Figure 6-5. Installing into a Rack

**Note**: Figures are for illustrative purposes only. Always install servers into racks from the bottom up.

**Standard Chassis Installation**

*Installing the Chassis into a Rack*

1. Confirm that the inner rails are properly installed on the chassis.

2. Confirm that the outer rails are correctly installed on the rack.

3. Pull the middle rail out from the front of the outer rail and make sure that the ball-bearing shuttle is at the front locking position of the middle rail.

4. Align the chassis inner rails with the front of the middle rails.

5. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides, until the locking tab of the inner rail clicks into the front of the middle rail, locking the chassis into the fully extended position.

6. Depress the locking tabs of both sides at the same time and push the chassis all the way into the rear of the rack.

7. If necessary for security purposes, use screws to secure the chassis handles to the front of the rack.
Appendix A

SC823 Chassis Cables

A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our Web site at: www.supermicro.com.

A-2 Cables Included (SAS/SATA)

<table>
<thead>
<tr>
<th>Part #</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBL-0044L</td>
<td>Cable</td>
<td>61cm</td>
<td>SATA flat cable</td>
</tr>
<tr>
<td>CBL-0049L</td>
<td>Cable</td>
<td>54cm</td>
<td>Front panel ribbon cable—16 pin to 16 pin</td>
</tr>
<tr>
<td>CBL-0179L</td>
<td>Cable</td>
<td>70cm</td>
<td>Flat straight SATA cable</td>
</tr>
</tbody>
</table>
A-3 Compatible Cables

These cables are compatible with the SC823 Chassis.

Alternate SAS/SATA Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS/SATA cables must share, use one of the following cables. These cables must be purchased separately.

**Cable Name:** SAS Cable  
**Part #:** CBL-0175L  
**Alt. Name:** "Big Four"

**Description:** This cable has one SFF-8484 (32 pin) connector on one end and 4 SAS connectors (7 pins each) at the other. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

**Cable Name:** SAS Cable  
**Part #:** CBL-0116L  
**Alt. Name:** iPass or "Small Four"

**Description:** This cable has one iPass (SFF-8087/mini-sas) connector (36 pins) at one end and 4 SAS connectors on one end. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.
Extending Power Cables

Although Supermicro chassis are designed to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards you may have to extend the power cables to the motherboards. To do this, use the following chart as a guide.

<table>
<thead>
<tr>
<th>Number of Pins</th>
<th>Cable Part #</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 pin</td>
<td>CBL - 0042L</td>
<td>7.9&quot;(20 CM)</td>
</tr>
<tr>
<td>20 pin</td>
<td>CBL - 0059L</td>
<td>7.9&quot;(20 CM)</td>
</tr>
<tr>
<td>8 pin</td>
<td>CBL - 0062L</td>
<td>7.9&quot;(20 CM)</td>
</tr>
<tr>
<td>4 pin</td>
<td>CBL - 0060L</td>
<td>7.9&quot;(20 CM)</td>
</tr>
</tbody>
</table>
Notes
Appendix B

SC823 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

<table>
<thead>
<tr>
<th>SC823TQ-653LPB Model Chassis</th>
<th>650 Watts</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFR Part #</td>
<td>PWS-653-2H</td>
</tr>
</tbody>
</table>
| Rated AC Voltage | 100-140, 8-5.2A, 50-60Hz  
180-240, 4.2-3.1A, 50-60Hz |
| +5V standby | 4 Amp |
| +12V | 100-140Vac: 49Amp  
180-240Vac: 54Amp |
| +5V | 30 Amp |
| +3.3V | 25 Amp |
| -12V | 0.5 Amp |
C-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 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 backplane and peripherals back into their antistatic bags when not in use.

C-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the BPN-SAS-823T/TQ backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS-823T/TQ backplane.
- Make sure that the BPN-SAS-823T/TQ backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.
C-3  An Important Note to Users

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

C-4  Introduction to BPN-SAS-823T/BPN-SAS-823TQ Backplanes

The BPN-SAS-823T and BPN-SAS-823TQ backplanes have been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

The BPN-SAS-823T backplane is identical to the BPN-SAS-823TQ backplane except that the I²C connectors, sideband headers and the MG9072 chip are not populated on the SAS823T backplane.

This manual reflects BPN-SAS-823T and BPN-SAS-823TQ Revision 1.00A, 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.
C-5  Front Connectors

BPN-SAS-823TQ Front Connectors:
1. JP10: 4-Pin Power Connector
2. JP13: 4-Pin Power Connector
3. JP26: ACT_IN (Activity In LED Header)
4. JP44: $i^2$C Connector#1
5. JP45: $i^2$C Connector#2
6. JP51: SideBand #1
7. JP52: SideBand #2
8. MG 9072 Chip
9. SAS Port #0
10. SAS Port #1
11. SAS Port #2
12. SAS Port #3
13. SAS Port #4
14. SAS Port #5

BPN-SAS-823T Front Connectors:
1. P10: 4-Pin PWR Connector
2. JP13: 4-Pin PWR Connector
3. JP26: ACT_IN (Activity In LED Header)
9. SAS Port #0
10. SAS Port #1
11. SAS Port #2
12. SAS Port #3
13. SAS Port #4
14. SAS Port #5

Figure C-1. Front Connectors
1. - 2. Backplane Power Connectors

These 4-pin connectors, designated JP10 and JP13 supply power to the backplane.

3. Activity LED Header

The activity LED header, designated JP26, is used to indicate the activity status of each SATA drive. The Activity LED Header is located on the rear of the backplane. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT IN#0</td>
<td>1</td>
</tr>
<tr>
<td>ACT IN#1</td>
<td>2</td>
</tr>
<tr>
<td>ACT IN#2</td>
<td>3</td>
</tr>
<tr>
<td>ACT IN#3</td>
<td>4</td>
</tr>
<tr>
<td>ACT IN#4</td>
<td>5</td>
</tr>
<tr>
<td>ACT IN#5</td>
<td>6</td>
</tr>
<tr>
<td>ACT IN#6</td>
<td>7</td>
</tr>
<tr>
<td>ACT IN#7</td>
<td>8</td>
</tr>
<tr>
<td>Ground</td>
<td>9</td>
</tr>
<tr>
<td>Empty</td>
<td>10</td>
</tr>
</tbody>
</table>

4. - 5. I²C Connectors (BPN-SAS-823TQ Only)

The I²C Connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

<table>
<thead>
<tr>
<th>I²C Connector Pin Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin#</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

6. - 7. Sideband Headers (BPN-SAS-823TQ Only)

The sideband headers are designated JP51 and JP52.

For SES-2 to work properly, you must connect an 8-pin sideband cable to JP51 and JP52. See the table to the right for pin definitions.

<table>
<thead>
<tr>
<th>Sideband Headers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin #</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>
8. MG9072 Chip (SC823TQ Only)

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

9. - 14. SAS Ports

The SAS/SATA ports are used to connect the SAS/SATA drive cables. The six ports are designated #0 - #5.
C-6 Front Jumpers and Pin Definitions

Figure C-2. Front Jumpers (BPN-SAS-823TQ)

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.
I\(^2\)C and SGPIO Modes and Jumper Settings

The BPN-SAS-823TQ backplane can utilize I\(^2\)C or SGPIO. I\(^2\)C is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I\(^2\)C mode.

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Jumper Setting</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP18</td>
<td>Open</td>
<td>Closed: Buzzer Reset (Default)</td>
</tr>
<tr>
<td>JP29</td>
<td>Open</td>
<td>Closed: Chip Reset (Default)</td>
</tr>
<tr>
<td>JP33</td>
<td>Pins 2-3</td>
<td>Controller ID #1</td>
</tr>
<tr>
<td>JP34</td>
<td>Pins 1-2</td>
<td>Backplane ID #1 1-2: ID#0 2-3: ID#1</td>
</tr>
<tr>
<td>JP36</td>
<td>Pins 2-3</td>
<td>Controller ID #2</td>
</tr>
<tr>
<td>JP37</td>
<td>Pins 2-3</td>
<td>Backplane ID #2 1-2: ID#0 2-3: ID#1</td>
</tr>
<tr>
<td>JP38</td>
<td>Closed</td>
<td>I(^2)C Reset #2</td>
</tr>
<tr>
<td>JP40</td>
<td>Open</td>
<td>I(^2)C Reset _SDOUT#1</td>
</tr>
<tr>
<td>JP41</td>
<td>Open</td>
<td>I(^2)C Reset _SDOUT#2</td>
</tr>
<tr>
<td>JP42</td>
<td>Pins 2-3</td>
<td>I(^2)C Backplane ID _SDIN#1</td>
</tr>
<tr>
<td>JP43</td>
<td>Pins 2-3</td>
<td>I(^2)C Backplane ID _SDIN#2</td>
</tr>
<tr>
<td>JP50</td>
<td>Closed</td>
<td>I(^2)C Reset #1</td>
</tr>
</tbody>
</table>
## Jumper Settings (SAS-823T Only)

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Jumper Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP18</td>
<td>Open/Closed</td>
<td>Closed: Buzzer reset (default)</td>
</tr>
<tr>
<td>JP29</td>
<td>Open/Closed</td>
<td>Closed: MG9072 Reset (Default)</td>
</tr>
<tr>
<td>JP33</td>
<td>Pins 1-2</td>
<td>Controller ID #1</td>
</tr>
<tr>
<td>JP34</td>
<td>Pins 1-2</td>
<td>Backplane ID #1 1-2: ID#0 2-3: ID#1</td>
</tr>
<tr>
<td>JP36</td>
<td>Pins 1-2</td>
<td>Controller ID #2</td>
</tr>
<tr>
<td>JP37</td>
<td>Pins 1-2</td>
<td>Backplane ID #2 1-2: ID#0 2-3: ID#1</td>
</tr>
<tr>
<td>JP38</td>
<td>Open/Closed</td>
<td>I²C Reset #2</td>
</tr>
<tr>
<td>JP40</td>
<td>Closed</td>
<td>I²C Reset _SDOUT#1</td>
</tr>
<tr>
<td>JP41</td>
<td>Closed</td>
<td>I²C Reset _SDOUT#2</td>
</tr>
<tr>
<td>JP42</td>
<td>Pins 1-2</td>
<td>I²C Backplane ID _SDIN#1</td>
</tr>
<tr>
<td>JP43</td>
<td>Pins 1-2</td>
<td>I²C Backplane ID _SDIN#2</td>
</tr>
<tr>
<td>JP50</td>
<td>Open/Closed</td>
<td>I²C Reset #1</td>
</tr>
</tbody>
</table>

## SAS Port Connections in I²C and SGPIO Modes

Remember the following when connecting this backplane:

- In I²C mode, I²C #1 (JP44) corresponds with SAS ports #0, #1, #2, and #3. I²C #2 (JP45) corresponds with SAS ports 4 and 5. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

- In SGPIO mode, Sideband #1 (JP51) corresponds with SAS ports 0, 1, 2, and 3. Sideband #2 (JP52) corresponds with SAS ports #4 and #5. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

## Jumper Settings (SAS-823T Only)

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Settings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP18</td>
<td>Open/Closed</td>
<td>Closed: Buzzer reset (default)</td>
</tr>
<tr>
<td>JP25</td>
<td>Open</td>
<td>Overheat temperature settings: Buzzer activates at 45° C</td>
</tr>
<tr>
<td></td>
<td>Pins 1-2</td>
<td>Buzzer activates at 50° C</td>
</tr>
<tr>
<td></td>
<td>Pins 2-3</td>
<td>Buzzer activates at 55° C</td>
</tr>
</tbody>
</table>
C-7 Rear Connectors and LED Indicators

![Diagram of Rear Connectors and LEDs]

**BPN-SAS-823T and BPN-SAS-823TQ Rear SAS Connectors**

<table>
<thead>
<tr>
<th>Connector</th>
<th>SAS Drive Number (Connected to HDD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1</td>
<td>SAS#0 HDD</td>
</tr>
<tr>
<td>J2</td>
<td>SAS#1 HDD</td>
</tr>
<tr>
<td>J3</td>
<td>SAS#2 HDD</td>
</tr>
<tr>
<td>J4</td>
<td>SAS#3 HDD</td>
</tr>
<tr>
<td>J9</td>
<td>SAS#4 HDD</td>
</tr>
<tr>
<td>J11</td>
<td>SAS#5 HDD</td>
</tr>
</tbody>
</table>

**BPN-SAS-823TQ Rear LED Indicators (Connected to HDD)**

<table>
<thead>
<tr>
<th>LED</th>
<th>Hard Drive Activity and Failure LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>D12</td>
<td>SAS#0 Activity LED</td>
</tr>
<tr>
<td>D13</td>
<td>SAS#1 Activity LED</td>
</tr>
<tr>
<td>D14</td>
<td>SAS#2 Activity LED</td>
</tr>
<tr>
<td>D15</td>
<td>SAS#3 Activity LED</td>
</tr>
<tr>
<td>D18</td>
<td>SAS#4 Activity LED</td>
</tr>
<tr>
<td>D21</td>
<td>SAS#5 Activity LED</td>
</tr>
<tr>
<td>D5</td>
<td>SAS#0 Failure LED</td>
</tr>
<tr>
<td>D6</td>
<td>SAS#1 Failure LED</td>
</tr>
<tr>
<td>D7</td>
<td>SAS#2 Failure LED</td>
</tr>
<tr>
<td>D8</td>
<td>SAS#3 Failure LED</td>
</tr>
<tr>
<td>D19</td>
<td>SAS#4 Failure LED</td>
</tr>
<tr>
<td>D20</td>
<td>SAS#5 Failure LED</td>
</tr>
</tbody>
</table>

**BPN-SAS-823T Rear LED Indicators (Connected to HDD)**

<table>
<thead>
<tr>
<th>LED</th>
<th>Hard Drive Activity and Failure LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>D12</td>
<td>SAS#0 Activity LED</td>
</tr>
<tr>
<td>D13</td>
<td>SAS#1 Activity LED</td>
</tr>
<tr>
<td>D14</td>
<td>SAS#2 Activity LED</td>
</tr>
<tr>
<td>D15</td>
<td>SAS#3 Activity LED</td>
</tr>
<tr>
<td>D18</td>
<td>SAS#4 Activity LED</td>
</tr>
<tr>
<td>D21</td>
<td>SAS#5 Activity LED</td>
</tr>
</tbody>
</table>
Disclaimer (cont.)
The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.