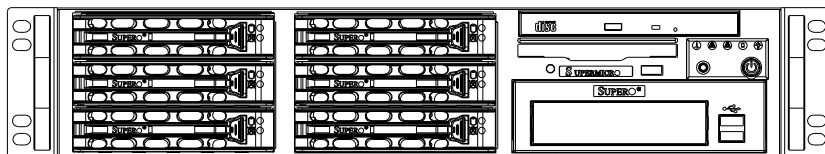


# SUPERO®

## SC823 Chassis



SC823TQ-653LPB

## USER'S MANUAL

2.0

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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](http://www.supermicro.com).**

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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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## 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**

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# 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>

Model	HDD	I/O Slots	Power Supply
SC823TQ-653LPB	6x SATA	7x LP	650W (Gold level cert.)

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](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](mailto:marketing@supermicro.com) (General Information)  
[support@supermicro.com](mailto:support@supermicro.com) (Technical Support)

Web Site: [www.supermicro.com](http://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](mailto:sales@supermicro.nl) (General Information)  
[support@supermicro.nl](mailto:support@supermicro.nl) (Technical Support)  
[rma@supermicro.nl](mailto:rma@supermicro.nl) (Customer Support)

Web Site: [www.supermicro.com](http://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](mailto:support@supermicro.com.tw)

Tel: +886-(2)-8226-3990

Web Site: [www.supermicro.com.tw](http://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](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。

此警告符号代表危險。

您正處於可能受到嚴重傷害的工作環境中。在您使用設備開始工作之前，必須充分意識到觸電的危險，並熟練掌握防止事故發生的標準工作程序。請根據每項警告結尾的聲明號碼找到此設備的安全性警告說明的翻譯文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

## Warnung

## WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

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.

**תקנת הצהרות אזהרה**

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארוזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .  
قبل أن تعمل على أي معدات، كن على علم بالمخاطر الناجمة عن الدوائر  
الكهربائية  
وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث  
استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور 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 letsel 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 waarschuwing 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.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前，请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.



## 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.

サーキット・ブレーカー

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(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

### Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

### ¡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.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250 V, 20 A

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في المبنى

تأكد من أن تقييم الجهاز الوقائي ليس أكثر من: 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw elektrische installatie. Controleer of het beveiligde apparaat niet groter gedimensioneerd is dan 220V, 20A.

## 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.

### 電源切斷の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ内部にアクセスするには、

システムの電源はすべてのソースから切斷され、電源コードは電源モジュールから取り外す必要があります。

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 châssis pour installer ou enlever des composants de système.

**אזהרה!**

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد الطاقة قبل الوصول إلى المناطق الداخلية للهيكल لتثبيت أو إزالة مكونات الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 새시 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.

### 機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

### 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

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

### Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

### ¡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.

### אזהרה!

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتثبيت واستبدال أو خدمة هذا الجهاز

### 경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

## Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

## Restricted Area



### 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).

## アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

## 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

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

## 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.

## אזור עם גישה מוגבלת

### אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת כלי אבטחה בלבד (מפתח, מנעול וכד').

تم تخصيص هذه الوحدة لت تركيبها في مناطق محظورة .  
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،  
قفل ومفتاح أو أي وسيلة أخرى للالأمان

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

## Battery Handling



### 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

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

電池更換不當會有爆炸危險。請只使用同類電池或製造商推薦的功能相當的電池更換原有電池。請按製造商的說明處理廢舊電池。

警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

### Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

### 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.

### **אזהרה!**

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك استبدال البطارية فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

### 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.

#### 冗長電源装置

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。

#### 警告

此装置连接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

#### 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.

**אם קיים יותר מספק אחד**

**אזהרה!**

ליחידה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.



قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.  
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

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 stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

### Backplane Voltage



**Warning!**

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

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際にはご注意ください。

警告

当系統正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡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.

## מתח בפנל האחורי

אזהרה!  
קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך  
העבודה.

هناك خطر من التيار الكهربائي أو الطاقة الموجودة على اللوحة  
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

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.

## Comply with Local and National Electrical Codes



### Warning!

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

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalación del equipo debe cumplir con las normas de electricidad locales y  
nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

**תיאום חוקי החשמל הארצי**

**אזהרה!**

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

**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**

本製品の废弃処理应根据所有国家的法律和规章进行。

**警告**

本產品的廢棄處理應根據所有國家的法律和規章進行。

**Warnung**

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡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.

## סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

## 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.

ファン・ホットスワップの警告

シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告

当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

**警告**

當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

**Warnung**

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

**¡Advertencia!**

Los ventiladores podran dar vuelta cuando usted quite el montaje del ventilador del chasis. Mantenga 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 retirez 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 חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

**경고!**

새시로부터 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マークがコードに表記)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.使用其它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

安装此產品時,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

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

### ¡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 cables certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

**חשמליים ומתאמי AC****אזהרה!**

כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או קצר חשמלי. על פי חוקי שימוש במכשירי חשמל וחוקי בטיחות, קיים איסור להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של UL/CSA) עבור כל מוצר חשמלי אחר שלא צויין על ידי סופרמיקרו בלבד.

عند تركيب الجهاز يجب استخدام كابلات التوصيل، والكابلات الكهربائية ومحولات التيار المتردد التي . أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق. تم توفيرها لك مع المنتج الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات CSA أو UL معتمدة من قبل لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro (التي تحمل علامة UL/CSA)

**경고!**

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC 어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL 또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을 금지합니다.

**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.

## Notes



## Chapter 3

# Chassis Components

### 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 shroud 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.

# Chapter 4

## System Interface

### 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.

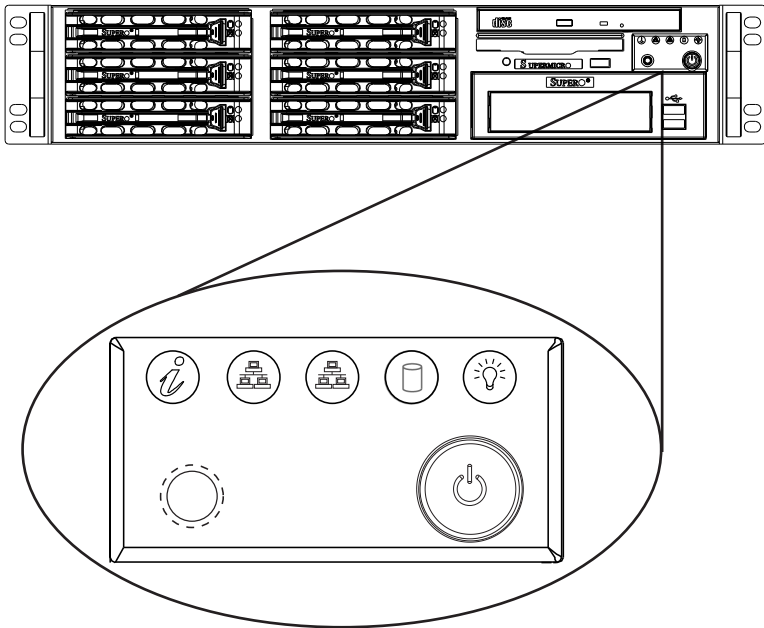
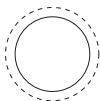


Figure 4-1: Chassis User Interface

## 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.



- **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.

Informational LED	
Status	Description
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.



- **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

## Chapter 5

# Chassis Setup and Maintenance

### 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

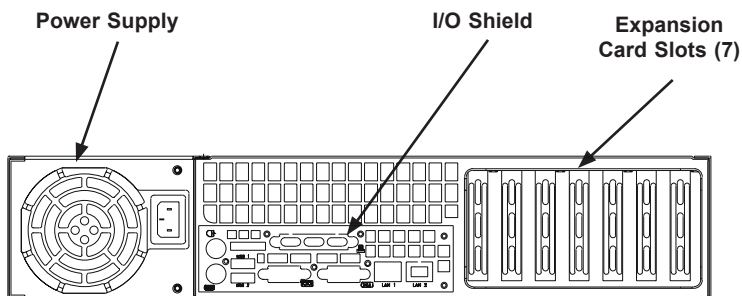


Figure 5-1. Chassis Rear View

### 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

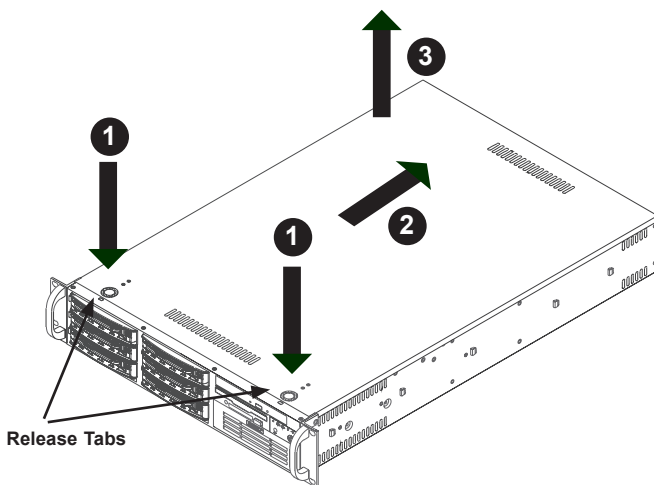


Figure 5-2. Removing the Chassis Cover

### ***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.

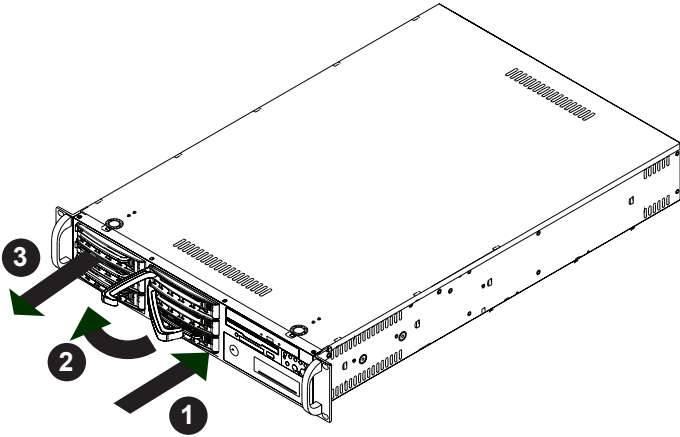


Figure 5-3. Removing a Hard Drive Tray

### *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.

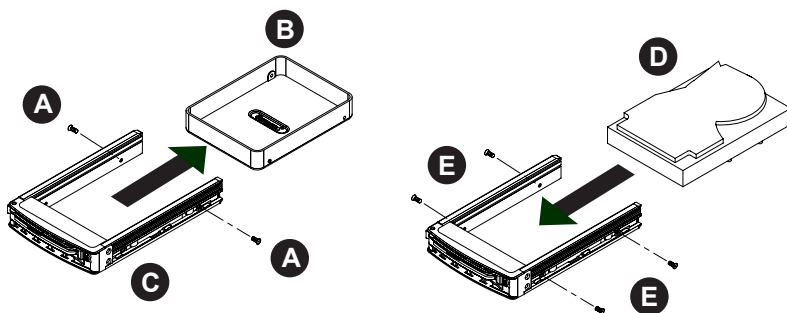


Figure 5-4. Installing a Hard Drive into the Drive Tray

### *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 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 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.

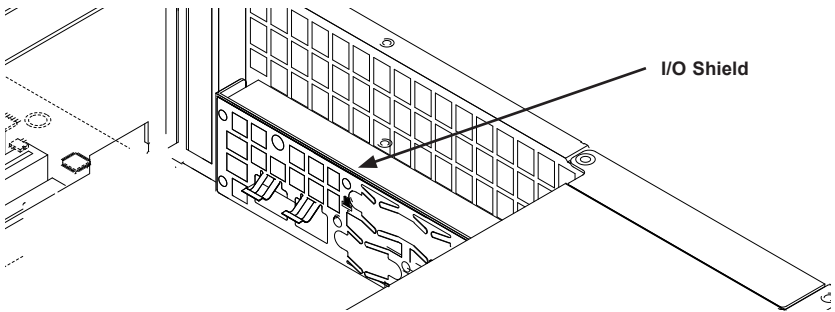


Figure 5-5. I/O Shield Placement

#### *Installing the I/O Shield*

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.

## 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.

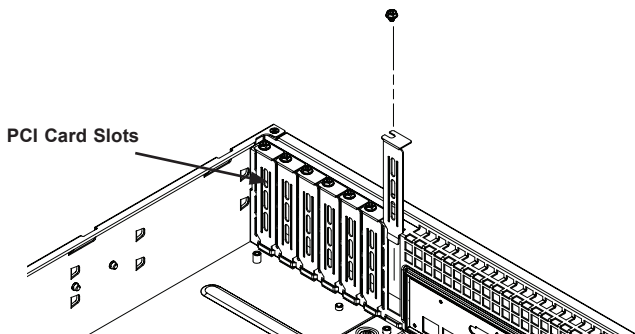


Figure 5-6. Removing the Expansion Card Slot Cover

### *Installing 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

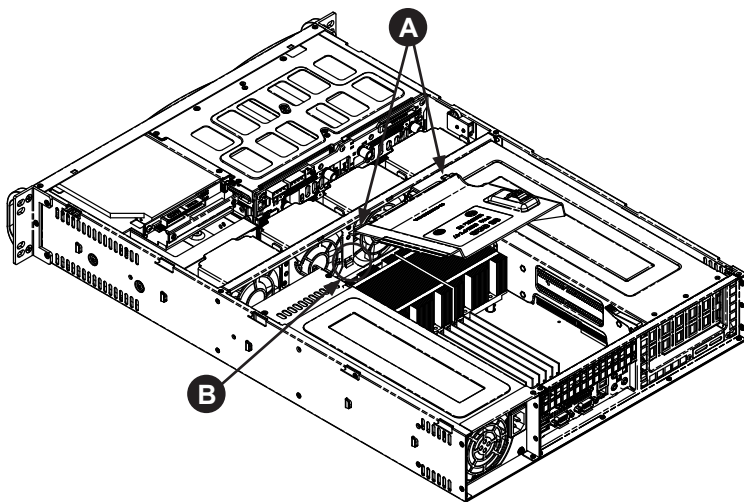


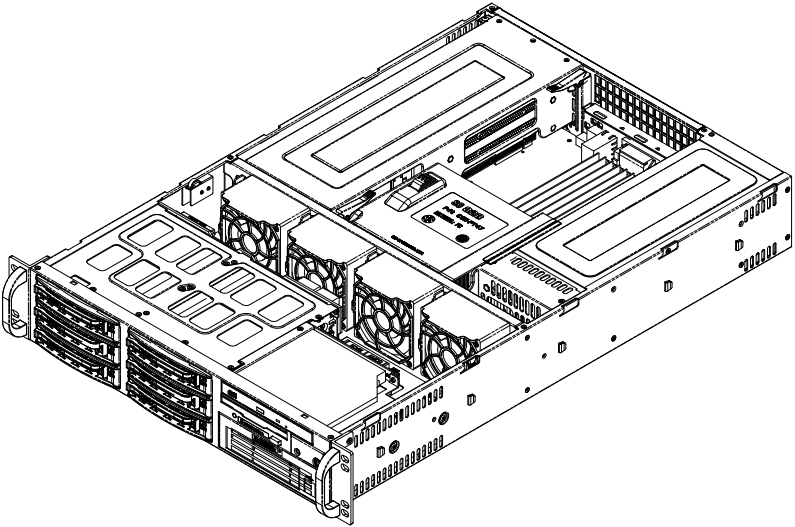
Figure 5-7. Installing the Air Shroud

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.

## 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.

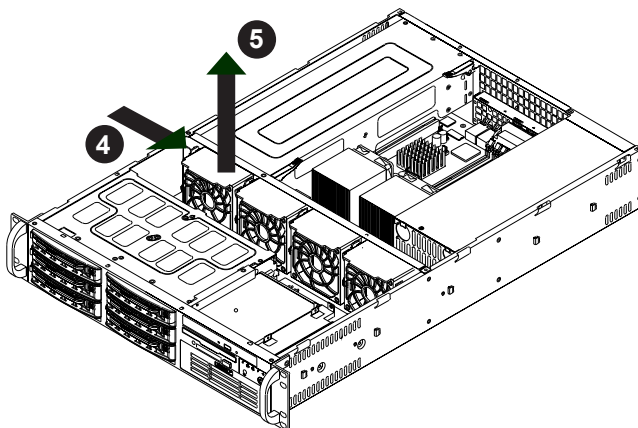
The control panel LEDs inform you of the system status. See Chapter 4: *System Interface* for details.

### **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.



**Figure 5-9. Removing a System Fan**

### ***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.

# Notes

## 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:

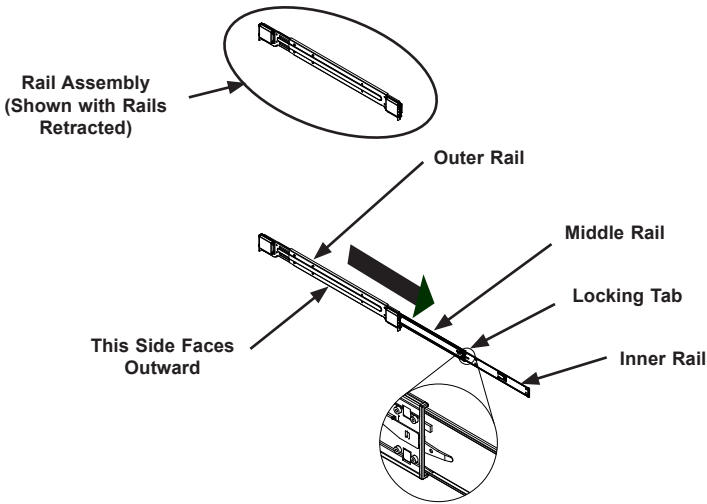
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install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



**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.

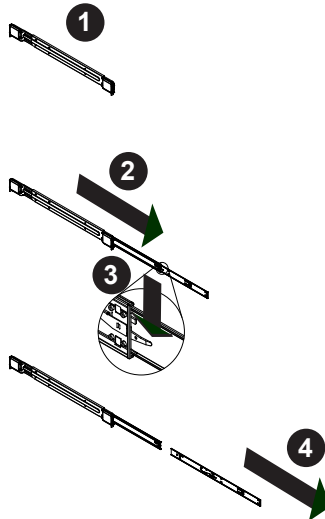


Figure 6-2. Extending and Releasing the Inner Rail

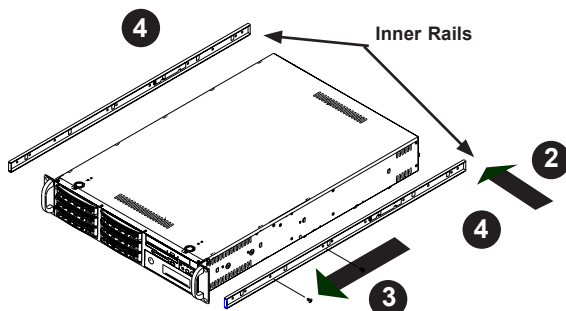


Figure 5-3. Installing the Inner Rails

## Installing The Inner Rails on the Chassis

### *Installing the Inner Rails*

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.



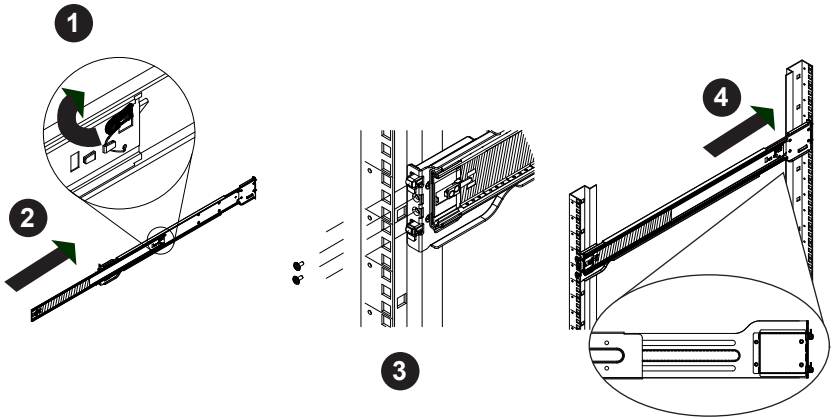


Figure 6-4. Extending and Releasing the Outer Rails

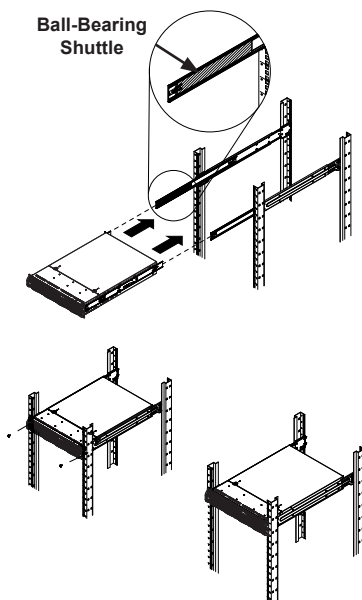
## Installing the Outer Rails on the Rack

### *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](http://www.supermicro.com).

#### A-2 Cables Included (SAS/SATA)

SC823TQ-650LP,			
Part #	Type	Length	Description
CBL-0044L	Cable	61cm'	SATA flat cable
CBL-0049L	Cable	54cm	Front panel ribbon cable-- 16 pin to 16 pin
CBL-0179L	Cable	70cm	Flat straight SATA cable

## 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

**Quantity:** 1

**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

**Quantity:** 1

**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.

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## 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 mother boards. To do this, use the following chart as a guide.

<b>Power Cable Extenders</b>		
<b>Number of Pins</b>	<b>Cable Part #</b>	<b>Length</b>
24 pin	CBL - 0042L	7.9"(20 CM)
20 pin	CBL - 0059L	7.9"(20 CM)
8 pin	CBL - 0062L	7.9"(20 CM)
4 pin	CBL - 0060L	7.9"(20 CM)

# Notes

## Appendix B

### SC823 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

<b>SC823TQ-653LPB Model Chassis</b>	
	<b>650 Watts</b>
<b>MFR Part #</b>	PWS-653-2H
<b>Rated AC Voltage</b>	100-140, 8-5.2A, 50-60Hz 180-240, 4.2-3.1A, 50-60Hz
<b>+5V standby</b>	4 Amp
<b>+12V</b>	100-140Vac: 49Amp 180-240Vac: 54Amp
<b>+5V</b>	30 Amp
<b>+3.3V</b>	25 Amp
<b>-12V</b>	0.5 Amp



## Notes



## Appendix C

### BPN-SAS-823T and BPN-SAS-823TQ Backplanes

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

#### 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 I<sup>2</sup>C 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](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

## C-5 Front Connectors

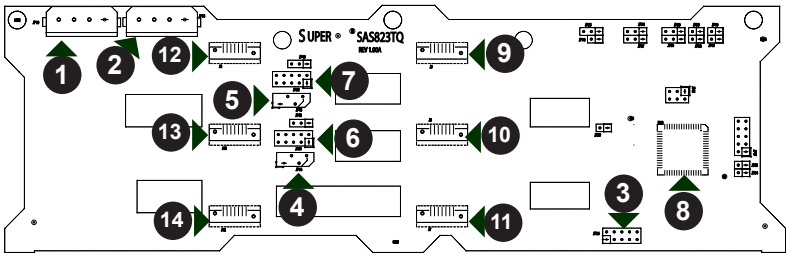


Figure C-1. Front Connectors

### 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<sup>2</sup>C Connector#1
5. JP45: I<sup>2</sup>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

## 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.

SATA Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

## 4. - 5. I<sup>2</sup>C Connectors (BPN-SAS-823TQ Only)

The I<sup>2</sup>C Connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I <sup>2</sup> C Connector Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

## 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.

Sideband Headers			
Pin #	Definition	Pin #	Definition
2	Backplane Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Backplane ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

### **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

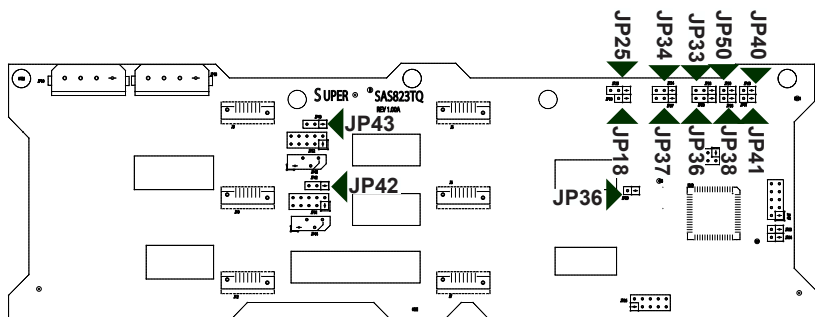
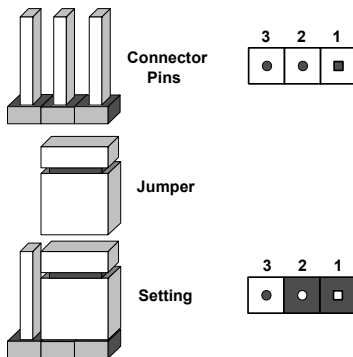


Figure C-2. Front Jumpers (BPN-SAS-823TQ)

### 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<sup>2</sup>C and SGPIO Modes and Jumper Settings

The BPN-SAS-823TQ backplane can utilize I<sup>2</sup>C or SGPIO. I<sup>2</sup>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<sup>2</sup>C mode.

I <sup>2</sup> C Mode (Default)		
Jumper	Jumper Setting	Note
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: Chip Reset (Default)
JP33	Pins 2-3	Controller ID #1
JP34	Pins 1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	Pins 2-3	Controller ID #2
JP37	Pins 2-3	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Closed	I <sup>2</sup> C Reset #2
JP40	Open	I <sup>2</sup> C Reset _SDOUT#1
JP41	Open	I <sup>2</sup> C Reset _SDOUT#2
JP42	Pins 2-3	I <sup>2</sup> C Backplane ID _SDIN#1
JP43	Pins 2-3	I <sup>2</sup> C Backplane ID _SDIN#2
JP50	Closed	I <sup>2</sup> C Reset #1

SGPIO Mode (Only)		
Jumper	Jumper Setting	Note
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: MG9072 Reset (Default)
JP33	Pins 1-2	Controller ID #1
JP34	Pins 1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	Pins 1-2	Controller ID #2
JP37	Pins 1-2	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Open	I <sup>2</sup> C Reset #2
JP40	Closed	I <sup>2</sup> C Reset _SDOUT#1
JP41	Closed	I <sup>2</sup> C Reset _SDOUT#2
JP42	Pins 1-2	I <sup>2</sup> C Backplane ID _SDIN#1
JP43	Pins 1-2	I <sup>2</sup> C Backplane ID _SDIN#2
JP50	Open	I <sup>2</sup> C Reset #1

## SAS Port Connections in I<sup>2</sup>C and SGPIO Modes

Remember the following when connecting this backplane:

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

## Jumper Settings (SAS-823T Only)

Jumper Settings for SAS-823T		
Jumper	Settings	Description
JP18	Open/Closed	Closed: Buzzer reset (default)
JP25	Open Pins 1-2 Pins 2-3	Overheat temperature settings: Buzzer activates at 45° C Buzzer activates at 50° C Buzzer activates at 55° C



## C-7 Rear Connectors and LED Indicators

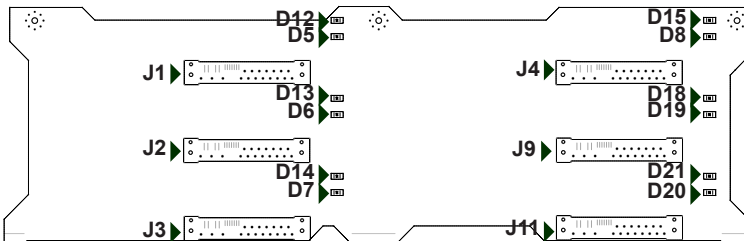


Figure C-3. Rear Connectors and LEDs

BPN-SAS-823T and BPN-SAS-823TQ Rear SAS Connectors	
Connector	SAS Drive Number (Connected to HDD)
J1	SAS#0 HDD
J2	SAS#1 HDD
J3	SAS#2 HDD
J4	SAS#3 HDD
J9	SAS#4 HDD
J11	SAS#5 HDD

BPN-SAS-823TQ Rear LED Indicators (Connected to HDD)	
LED	Hard Drive Activity and Failure LEDs
D12	SAS#0 Activity LED
D13	SAS#1 Activity LED
D14	SAS#2 Activity LED
D15	SAS#3 Activity LED
D18	SAS#4 Activity LED
D21	SAS#5 Activity LED
D5	SAS#0 Failure LED
D6	SAS#1 Failure LED
D7	SAS#2 Failure LED
D8	SAS#3 Failure LED
D19	SAS#4 Failure LED
D20	SAS#5 Failure LED

BPN-SAS-823T Rear LED Indicators (Connected to HDD)	
LED	Hard Drive Activity and Failure LEDs
D12	SAS#0 Activity LED
D13	SAS#1 Activity LED
D14	SAS#2 Activity LED
D15	SAS#3 Activity LED
D18	SAS#4 Activity LED
D21	SAS#5 Activity LED

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