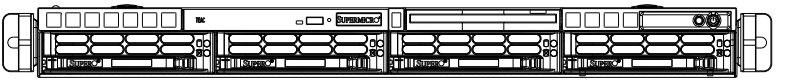
SC813M CHASSIS



SC813MFTQ-R606CB
SC813MFTQ-R400CB
SC813MFTQC-505CB
SC813MT-300C/CB
SC813MT-410C/CB
SC813MTQ-600CB
SC813MTQ-441CB
SC813MTQ-350CB
SC813MFTQ-520CB
SC813MFTQ-441CB
SC813MS-600C/CB
SC813MT-350CB
SC813MT-420C/CB
SC813MTQ-520C/CB
SC813MTQ-R400CB
SC813MTQ-280C/CB

USER'S MANUAL

1.0b

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.**

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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 1.0b
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Manual Organization

Chapter 1 Introduction

The introduction the main components included with this chassis and describes the primary features of the SC813M chassis. This chapter also includes contact information.

Chapter 2 Standardized Warning Statements for AC/DC 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 Chassis Components

Refer here for details on this chassis model, including the fans, bays, airflow shields, and other components.

Chapter 4 System Interface

This chapter provides 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 detailed information on this chassis. Follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

Chapter 6 Rack Installation

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

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Chapter 1

Introduction

1-1 Overview

Supermicro's SC813M 1U chassis featues four hot-swappable 3.5" SAS/SATA hard drive bays. Only enterprise level hard drives are recommended for use in Supermicro chassis. The SC813M chassis includes one high-efficiency power supply. See the chart below for power supply options. A slim DVD-ROM drive is optional.

1-2 Shipping List

Please visit the following link for the latest shipping lists and part numbers for your particular chassis model. www.supermicro.com

Model	HDD	I/O Slots	Power Supply
SC813MFTQ-R606CB	4x SAS/SATA	1x FH	600W (Redundant)
SC813MFTQ-520CB	4x SAS/SATA	1x FH	520W
SC813MFTQ-R400CB	4x SAS/SATA	1x FH	400W (Redundant)
SC813MFTQC-R441CB	4x SAS/SATA	1x FH	440W (Platinum Level)
SC813MFTQC-505CB	4x SAS/SATA	1x FH	500W
SC813MS-600C/CB	4x SAS/SATA	1x FH	600W
SC813MT-300C/CB	4x SAS/SATA	1x FH	300W,
SC813MT-350C	4x SAS/SATA	1x FH	350W (Gold Level)
SC813MT-410-C/CB	4x SAS/SATA	1x FH	400W
SC813MT-420C/Cb	4x SAS/SATA	1x FH	440W
SC813MTQ-600CB	4x SAS/SATA	1x FH	600W
SC813MTQ-520C/CB	4x SAS/SATA	1x FH	520W
SC813MTQ-441CB	4x SAS/SATA	1x FH	440W
SC813MTQ-R400CB	4x SAS/SATA	1x FH	400W (Redundant)
SC813MTQ-350CB	4x SAS/SATA	1x FH	300W (Gold Level)
SC813MTQ-280C/CB	4x SAS/SATA	1x FH	280W

Legend: FH: Full-height

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)
Website:	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)
Website:	www.supermicro.nl

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
Website:	www.supermicro.com.tw

Notes

Chapter 2

Standardized Warning Statements for AC/DC 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.

תקנון 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 במארזי סופרמיקרו.

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.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

주의!

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 60V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 60V, 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.

電源切断の警告

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、シャーシー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断され、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.

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 لتركيب واستبدال أو خدمة هذا الجهاز

경고!

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

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 لتركيبها 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
电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

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。

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
此裝置連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 trom 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 !
ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.

מתח בפנל האחורי

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

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

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생합니다. 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 instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

¡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

DC Power Supply

Warning!

When stranded wiring is required, use approved wiring terminations, such as closedloop or spade-type with upturned lugs. These terminations should be the appropriate size for the wires and should clamp both the insulation and conductor.

警告

より線が必要な場合、承認済みのケーブル終端（上向きの端子を備えたクローズループ型またはU字型の終端など）を使用してください。使用するワイヤーに適したサイズで、絶縁体および導体が両方ともクランプされている終端でなければなりません。

警告

需要多股佈線時，請使用經核准的佈線終端，例如閉環或鏟型接線片。 這些終端的大小應適合線路，並且可以同時夾住絕緣體和導體。

警告

需要使用绞线连接时，请使用经认可的连接端子，如闭环端子或具有接线柱的铲形端子。这些端子的大小应与线缆相吻合，并且可以将绝缘部分和导体夹紧固定。

Warnung

Wenn Litzenverdrahtung erforderlich ist, sind zugelassene Verdrahtungsabschlüsse, z.B. für einen geschlossenen Regelkreis oder gabelförmig, mit nach oben gerichteten Kabelschuhen zu verwenden. Diese Abschlüsse sollten die angemessene Größe für die Drähte haben und sowohl die Isolierung als auch den Leiter festklemmen.

¡Advertencia!

Cuando se necesite hilo trenzado, utilizar terminales para cables homologados, tales como las de tipo "bucle cerrado" o "espada", con las lengüetas de conexión vueltas hacia arriba. Estos terminales deberán ser del tamaño apropiado para los cables que se utilicen, y tendrán que sujetar tanto el aislante como el conductor.

DC Power Disconnection

Warning!

Before performing any of the following procedures, ensure that power is removed from the DC circuit.

警告

次の手順を開始する前に、DC回路から電源が切断されていることを確認してください。

警告

進行以下任一操作程序前，請確保直流電路已斷電。

警告

请在进行以下任一操作程序前，确保直流电路的电源已经断开。

Warnung

Vor Ausführung der folgenden Vorgänge ist sicherzustellen, daß die Gleichstromschaltung keinen Strom erhält.

¡Advertencia!

Antes de proceder con los siguientes pasos, comprobar que la alimentación del circuito de corriente continua (CC) esté cortada (OFF).

Attention

Avant de pratiquer l'une quelconque des procédures ci-dessous, vérifier que le circuit en courant continu n'est plus sous tension.

אזהרה!

לפני ביצוע אחת הפעולות הבאות, ודא כי אספקת החשמל למעגל הזרם חישר DC הינה מנותקת.

تحذير

عندما يكون مطلوبا الأسلاك الذين تقطعت بهم السبل، واستخدام الأسلاك إنهاء الموافقة عليها، مثل حلقة مغلقة أو الأشياء بأسمائها الحقيقية النوع مع العروات مقلوبة. وينبغي لهذه الإنهاءات يكون الحجم المناسب للأسلاك ويجب كبح كل من العزل وموصل.

¡Advertencia!

Puede haber energía o voltaje peligrosos en los terminales eléctricos de CC. Reemplace siempre la cubierta cuando no estén utilizándose los terminales. Asegúrese de que no haya acceso a conductores descubiertos cuando la cubierta esté colocada.

Attention

Le voltage ou l'énergie électrique des terminaux à courant continu peuvent être dangereux. Veillez à toujours replacer le couvercle lors les terminaux ne sont pas en service. Assurez-vous que les conducteurs non isolés ne sont pas accessibles lorsque le couvercle est en place.

אזהרה!

בוקר בתח כיסוכן עלול להיות נוכח על הקשבים של זרם ה-DC. התחלף תמיד את הכיסה כאשר הקשבים לא בשימוש. ודא כי המוליכים הלא מבודדים אינם נגישים כאשר הכיסה נמצא במיקומו.

تحذير

قد الجهد الخطرة أو الطاقة تكون موجودة على محطات الطاقة العاصمة. استبدل الغطاء دائما عندما المحطات لي ست في الخدمة. امم ال شك في هو الموصلات غير معزول ال يمكن الوصول إليها عندما الغطاء في مكانه.

주의!

DC전원 단자들에 위험한 전압이나 에너지가 발생할 수 있습니다.

단말기들을 운영하지 않을 때에는 덮개로 다시 덮어 놓아 주십시오. 덮개가 제자리에 있어야만 절연되지 않은 도체들의 접근을 막을 수 있습니다.

Waarshuwing

Op DC-aansluitingspunten kunnen zich gevaarlijke voltages of energieën voordoen. Plaats altijd de afsluiting wanneer de aansluitingspunten niet worden gebruikt Zorg ervoor dat blootliggende contactpunten niet toegankelijk zijn wanneer de afsluiting is geplaatst.

Chapter 3

Chassis Components

3-1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual. This chassis accepts a 1U backplane, includes three or four fans (with two or three optional fans if necessary) and one or two power supplies. SC813M models come in black. For the latest shipping lists, visit our web site at: www.supermicro.com.

3-2 Components

Drives

The chassis includes four 3.5" hard drive bays. On most chassis models, the DVD-ROM is an optional item.

Backplane

Each SC813M chassis comes with a 1U SAS/SATA backplane. For more information regarding compatible backplanes, view the appendices found at the end of this manual. In addition, visit our web site for the latest information: http://www.supermicro.com.

Fans

the SC813M chassis includes three or four heavy-duty fans with open slots for two or three additional fans if required. System fans for the SC813M chassis are powered from the serverboard. These fans are 1U high and are powered by 4-pin connectors.

Mounting Rails

The SC813M can be placed in a rack for secure storage and use. To set up your rack, follow the step-by-step instructions included in this manual.

Power Supply

Each SC813M chassis model includes a high-efficiency power supply rated at 280, 300, 350, 400, 410, 440, 500, 520 or 600 Watts. In the unlikely event your power supply fails, replacement is simple and can be done without tools. "R" models include l redundant power supplies which may be replaced without powering-down the system.

Air Shroud

Air shrouds are shields, usually plastic, that channel air directly to where it is needed. Always use the air shroud included with your chassis.

3-3 Where to get Replacement Components

Although 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 control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. Most SC813M models have two push-buttons on the control panel: a reset button and an on/off switch. This chapter covers these buttons, and explains the meanings of all LED indicators and the appropriate responses you may need to take.

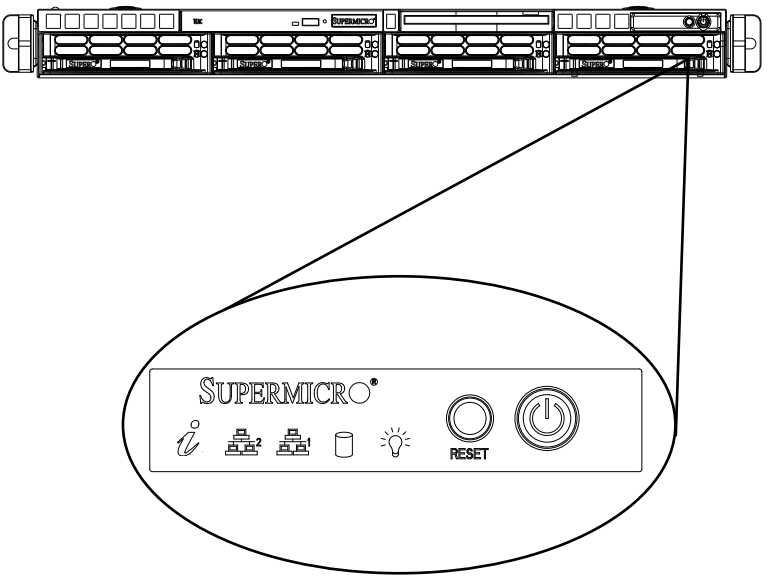


Figure 4-1: Chassis Control Panel

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 switch is used to apply or remove power from the power supply to the server system. Turning off 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 SC813M 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:

Informational LED	
Status	**Description**
Solid red	An overheat condition has occured. (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 (300 msec)	Remote UID is on. Use this function to identify the server from a remote location.

4-4 Drive Carrier LEDs

Your chassis uses SAS or SATA, but not both at the same time.

SAS/SATA Drives

Each SAS/SATA drive carrier 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.

Chapter 5

Chassis Setup and Maintenance

5-1 Overview

This chapter covers the steps required to install components and perform maintenance on the SC813M chassis. The only tool you will need to install components and perform maintenance is a Phillips screwdriver, and under certain circumstances, a hex wrench. Print this page to use as a reference while setting up your chassis.

5-2 Installation Procedures and General Maintenance

The following sections will provide you with information on installing components and performing general mainenance on the system.

Installation Procedures
Removing the Chassis Cover
Installing Hard Drives
Installing the DVD-ROM Drive
Installing the Motherboard
Installing the I/O Shield
Permanent and Optional Standoffs
Installing Expansion Cards
Installing the Air Shroud
Checking the Airflow

General Maintenance
System Fans
Power Supply
Removing the Backplane
Installing the Backplane

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2 Standardized Warning Statements for AC/DC Systems and the warning/precautions listed in the setup instructions.

5-3 Removing the Chassis Cover

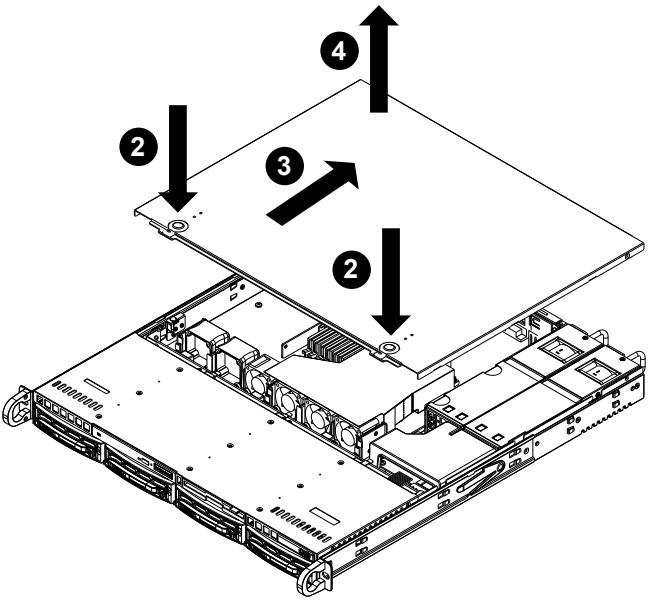


Figure 5-1: Removing the Chassis Cover

Removing the Chassis Cover the Chassis Cover

1. Power down the system and unplug the power cord from the rear of the power supply.
2. Simultaneously press both release tabs.
3. Slide the cover back toward the rear of the chassis.
4. Lift the cover upwards and off of the chassis.

Warning: 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.

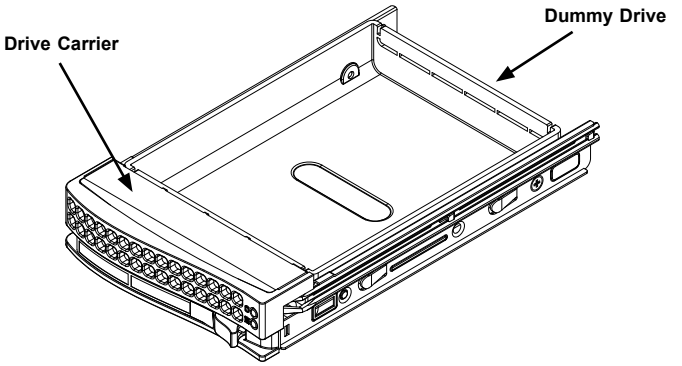


Figure 5-3: Chassis Drive Carrier

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow for the drive bays. The hard drives used in your chassis may vary slightly from those illustrated in this manual.

Warning: Except for short periods of time while swapping hard drives, do not operate the chassis without the drive carriers.

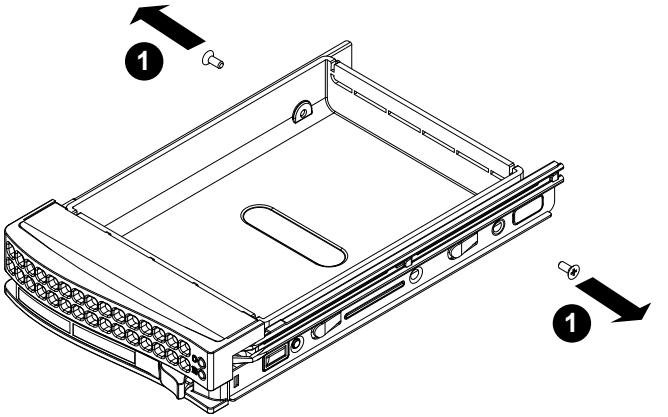


Figure 5-4: Removing a Dummy Drive from the Carrier

Installing a Hard Drive to the Hard Drive Carrier

1. Remove the two screws securing the dummy drive to the carrier.

2. Remove the dummy drive from the carrier.

5-5 Installing the DVD Drive

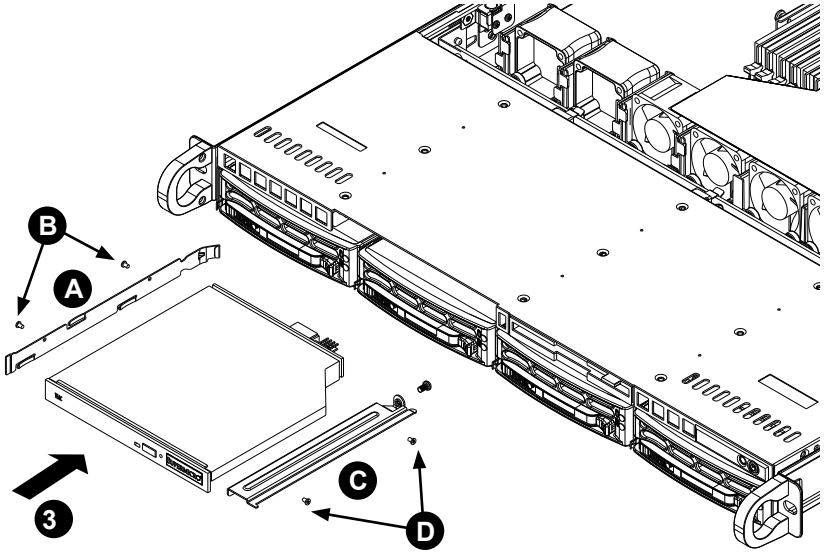


Figure 5-6: Installing the DVD Drive

SC813M chassis models include space for one optional DVD drive.

Installing the DVD Drive

1. Power down the system and unplug the power cord from the rear of the power supply. Open the chassis cover as described in Section 5-3.
2. Secure the left rail (A) to the left side of the DVD drive using two screws (B).
3. Attach the right rail (C) to the right side of the DVD drive using two screws (D).
4. Carefully slide the DVD drive and into the chassis.
5. Plug the power cord into the power supply and power up the system.

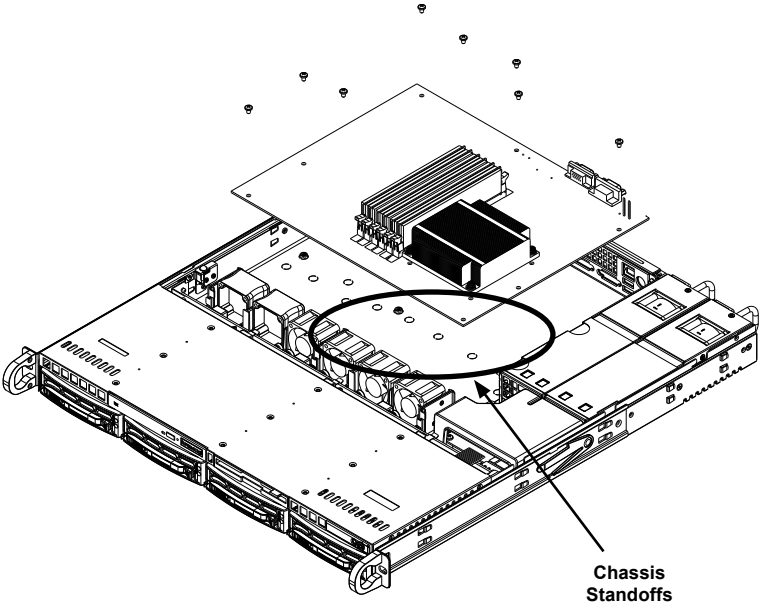


Figure 5-8: Chassis Standoffs

Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC813M chassis includes permanent standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC813M accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or non-standard methods to secure them. Optional standoffs are included for these motherboards. To use an optional standoff, you must place the hexagonal screw through the bottom the chassis and secure the screw with the hexagon nut (rounded side up). Compare the mounting holes in the motherboard to those in the chassis and add or remove standoffs as needed.

Installing Expansion Cards

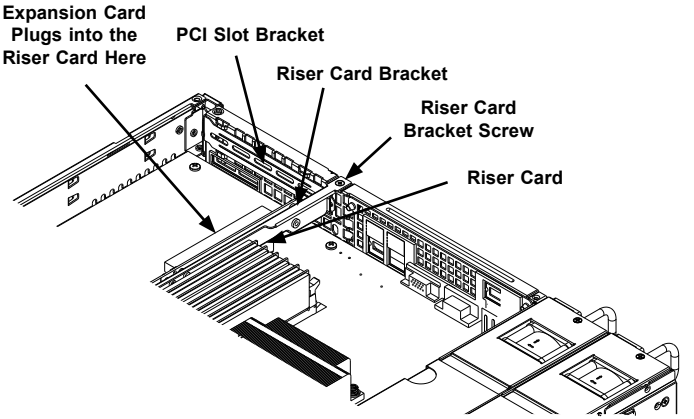


Figure 5-10: Expansion Card, Riser Card, Bracket and PCI Slot Cover

Installing an Expansion Card

1. Confirm that you have the correct riser card for your chassis model and the add-on card includes a standard bracket.

2. Power down the system and unplug the power cord from the rear of the power supply. Open the chassis cover as described in Section 5-3.

3. Install the riser card by sliding card into the appropriate slot in the motherboard. For more information, see the installation instructions that came with your motherboard and riser card.

4. Choose the PCI slot in which to place the expansion card.

5. Slide the PCI slot cover sideways.

6. From inside the chassis, remove the PCI slot cover.

7. Plug the expansion card into the riser card and fit the expansion card bracket into the PCI slot.

8. Secure the expansion card by closing the PCI slot lever.

9. Connect cables to the expansion card as necessary.

10. Replace the chassis cover, plug the power cord into the rear of the power supply and power up the system.

5-8 Checking the Airflow

Checking the Server's Airflow

1. Make sure there are no objects to obstruct airflow in and out of the server.

2. Do not operate the server without drives or drive carriers in the drive bays. Use only recommended server parts.

3. Make sure no wires or foreign objects obstruct airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

The control panel LEDs inform you of system status. See “Chapter 4: System Interface” for details on the LEDs and the control panel buttons.

Installation Complete

In most cases, the chassis power supply and fans are pre-installed. If you need to install fans or a power supply, continue to the following sections of this chapter. If the chassis will be installed into a rack, skip to the next chapter for rack installation instructions.

5-10 Power Supply

The SC813M chassis has one 280, 300, 350, 410, 420, 500, 520 or 600 Watt power supply, or comes with two 400 Watt redundant power supplies. The power supplies are auto-switching capable. This enables it to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Changing a 280, 300, 350, 410, 420, 500, 520 or 600 Watt Power Supply

1. Power down the system and unplug the power cord from the rear of the power supply. Open the chassis cover as described in Section 5-3. Lay the chassis on a flat, stable surface and remove the chassis cover.

2. Remove the two screws, located on the end of the power supply bay, as illustrated below. Set the screws aside for later use.

3. Gently slide the power supply out of the back of the chassis.

4. Replace the failed power module with another of the same model.

5. Slide the new power supply module into the power supply bay.

6. Align the holes in the power supply with the holes in the power supply bay and secure the power supply using the two screws which were set aside in step 2.

7. Replace the chassis cover, plug the power cord into the rear of the power supply and power up the system.

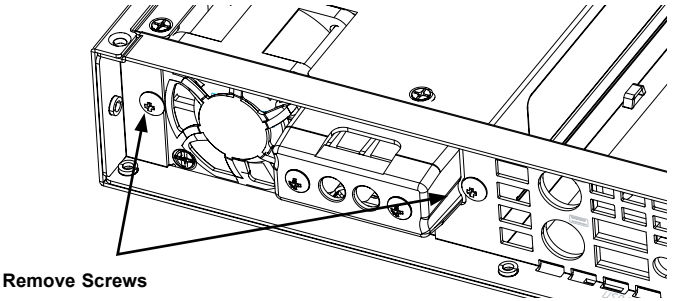


Figure 5-13: Removing the Fixed Power Supply

5-11 Removing the Backplane

The SC813M chassis backplane is located behind the hard drives and in front of the front system fans. In order to change jumper settings on the backplane, it may be necessary to remove the backplane from the chassis.

Removing the Backplane from the Chassis

1. Power down the system and unplug the power cord from the rear of the power supply. Open the chassis cover as described in Section 5-3. Lay the chassis on a flat, stable surface and remove the chassis cover.

2. Disconnect the cabling to the backplane.

3. Remove the two upper screws at the top of the backplane, indicated by the arrows below.

4. Lift the backplane up and out of the chassis.

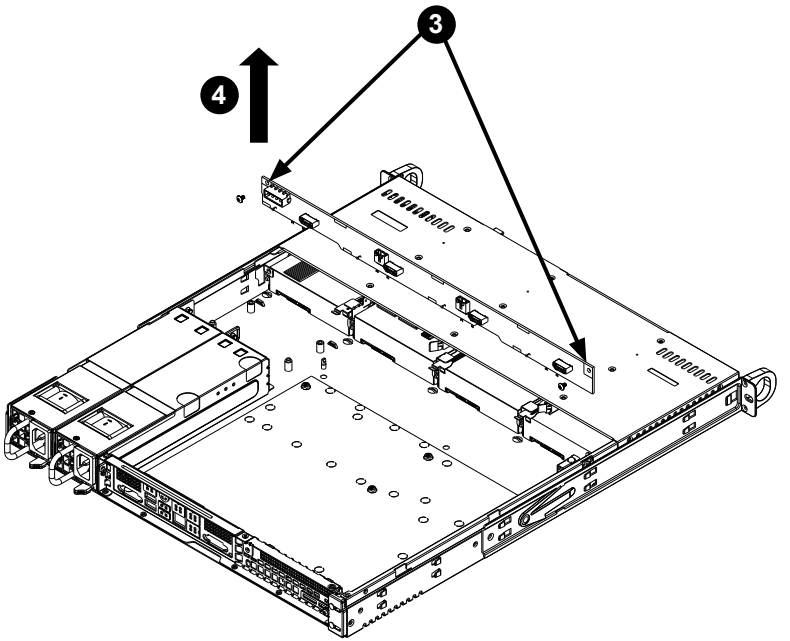


Figure 5-15: Removing the Screws at the Top of the Backplane

Notes

Chapter 6

Rack Installation

6-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following these steps in the order given should enable you to have the system operational within a minimum amount of time.

6-2 Unpacking the System

You should inspect the box 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.

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. You will also need it placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

6-3 Preparing for Setup

The box your chassis was shipped in should include two sets of rail assemblies, two rail mounting brackets and the mounting screws you will need to install the system into the rack. 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 product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and the like).

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 installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure 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 up.
- 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

6-4 Rack Mounting Instructions

This section provides information on installing the SC813M chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. 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 26" and 33.5" deep.

Identifying the Sections of the Rack Rails

The chassis package includes two rack rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.

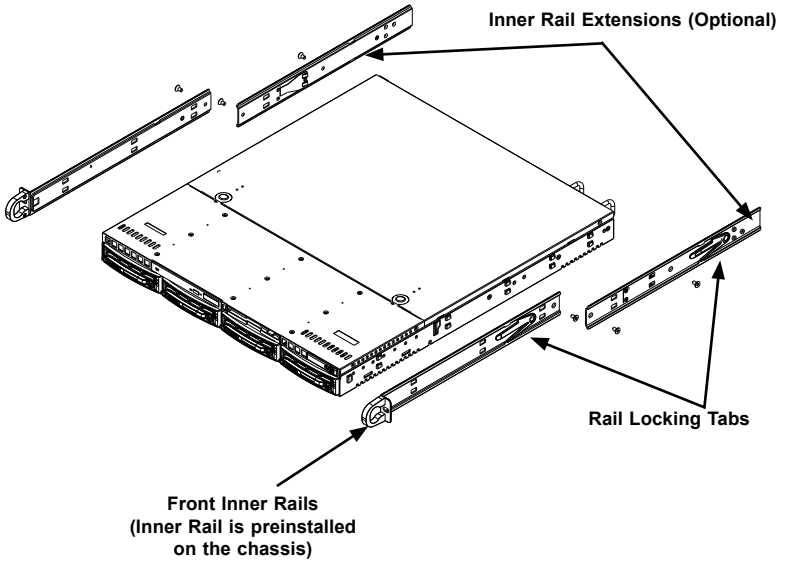


Figure 6-1: Identifying the Sections of the Rack Rails

Locking Tabs

Both chassis rails have a locking tab. The tabs lock the server into place when installed and pushed fully into the rack. These tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing.

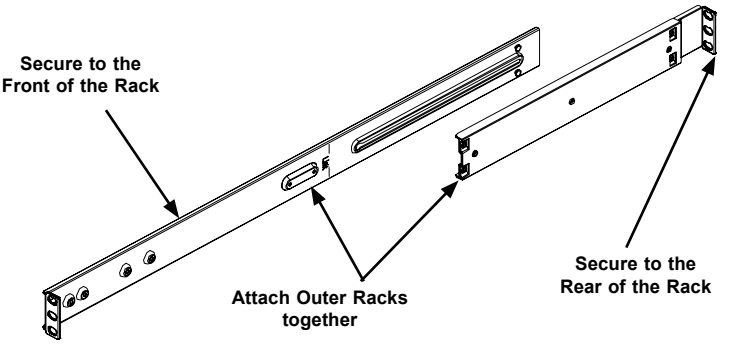


Figure 6-3: Assembling the Outer Rails

Outer Rack Rails

Outer rails attach to the server rack and hold the server in place. The outer rails for the SC813M chassis extend between 30 inches and 33 inches.

Installing the Outer Rails to the Rack

1. Attach the short bracket to the outside of the long bracket. You must align the pins with the slides. Also, both bracket ends must face the same direction.

2. Adjust both the short and long brackets to the proper distance so that the rail fits snugly into the rack.

3. Secure the long bracket to the front side of the outer rail with two M5 screws and the short bracket to the rear side of the outer rail with three M5 screws.

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

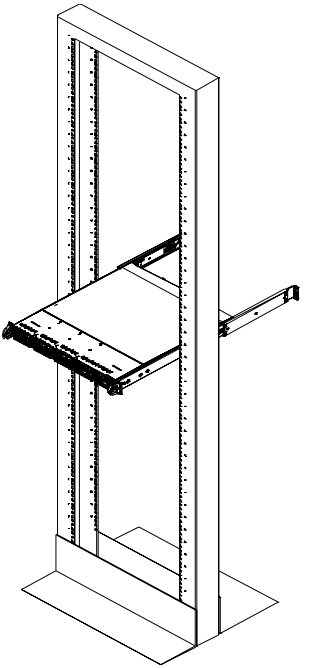


Figure 6-5: Installing into an Open Rack

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

Installing the Chassis into a Mid-Mount Position (Telco) Rack

1. Use the two L-shaped brackets on either side of the chassis (four total).

2. Determine how far the chassis will extend out the front of the rack. Larger chassis should be positioned to balance the weight between front and back. If a bezel is included on your server, remove it.

3. Attach the two front brackets to each side of the chassis, then the two rear brackets positioned with just enough space to accommodate the width of the telco rack.

4. Finish by sliding the chassis into the rack and tightening the brackets to the rack.

Appendix A

SC813M Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC813MTQ-280CB	
	280W
MFR Part #	PWS-281-1H
AC Voltage	100 - 240V, 60-50Hz, 5 Amp
DC Output	5V + 3.3V ≤ 100W
+5V standby	2 Amp
+12V	23Amp @ 100-140V 27Amp @ 180-240V
-12V	1 Amp
+5V	18 Amp
+3.3V	15 Amp

SC813MT-300CB	
	300W
MFR Part #	PWS-0054
AC Voltage	100 - 240V, 60-50Hz, 5 Amp
DC Output	5V + 3.3V ≤ 100W
+5V standby	2 Amp
+12V	24 Amp Max
-12V	1 Amp
+5V	25 Amp
+3.3V	15 Amp
-12V	1 Amp

SC813MT-350CB, SC813MTQ-350CB	
	350W
MFR Part #	PWS-351-1H
Rated AC Voltage	100-240 V 50-60 Hz 4.2-1.8 Amp
+5V standby	3 Amp
+12V	29 Amp
+5V	18 Amp
+3.3V	15 Amp

SC813MTQ-R400CB	
	400W
MFR Part #	PWS-406P-1R
AC Input	400W: 100-240 V, 50-60 Hz, 6-3 Amp
DC Output +5V standby	3 Amp
DC Output +12V	33 Amp
With Power Distributor	+5V: 25 Amp +3.3V: 25 Amp -12V: 0.6 Amp

SC813MT-410CB	
	410W
MFR Part #	PWS-0061
DC Voltage	Voltage Range = -36V to -72V Nominal Voltage = -48V Max Input Current = 18A @ -48V
DC Output	5V + 3.3V ≤ 160W
+5V standby	3 Amp
+12V	29 Amp (at 100 - 140 VAC), 32.5 (at 180 - 240 VAC)
-12V	32 Amp
+5V	35 Amp
+3.3V	20 Amp

SC813MFTQ-520CB, SC813MTQ-520CB	
	520W
MFR Part #	PWS-521-1H
AC Voltage	100 - 240V 50 - 60Hz 7 - 3 Amp
+5V standby	3 Amp
+12V	39 Amp
-12V	0.5 Amp
+5V	20 Amp
+3.3V	16 Amp

SC813MTQ-600CB	
	600W
MFR Part #	PWS-601-1H
AC Voltage	100-240 V, 50-60 Hz, 7.5-3.1 Amp
+5V standby	3 Amp
+12V	49 Amp
+5V	20 Amp
+3.3V	16 Amp

Appendix B

BPN-SAS-815TQ Backplane Specifications

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

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

B-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the BPN-SAS-815TQ Backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS-815TQ Backplane.
- Make sure that the BPN-SAS-815TQ Backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

B-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.

B-4 Front Connectors

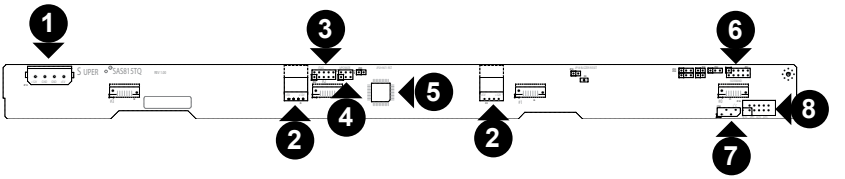


Figure B-1: Front Connectors

Front Connectors

1. Power connectors (4-pin) JP10
2. CD-ROM/ peripheral drive power J9 and J10
3. JTAG JP47
4. Upgrade pin JP46
5. MG9071 chip
6. Sideband JP51
7. I²C connector JP44

SAS/SATA Ports

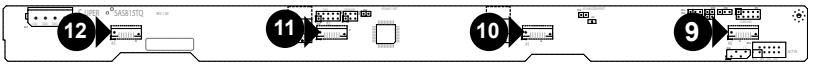


Figure B-2: SAS Ports

6. Sideband Headers

The sideband headers are designated JP51. For SES-2 to work properly, you must connect an 8-pin sideband cable. 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

7. I²C Connectors

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

I²C Connector Pin Definitions

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

8. Activity LED Header

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

SAS 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

9. - 12. SAS Ports

The SAS ports are used to connect the SAS drive cables. The four ports are designated #0 - #4. Each port is also compatible with SATA drives.

B-7 Rear Connectors and LED Indicators

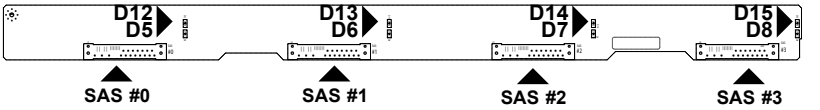


Figure B-4: Rear Connectors and LEDs

Rear SAS/SATA Connectors		
Rear Connector	**Connector Number**	**SAS Drive Number**
SAS #0	J1	SAS/SATA HDD #0
SAS #1	J2	SAS/SATA HDD #1
SAS #2	J3	SAS/SATA HDD #2
SAS #3	J4	SAS/SATA HDD #3

Rear LED Indicators		
Rear Connector	**Hard Drive Activity**	**Failure LED**
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8

Notes

Appendix C

BPN-SAS3-815TQ Backplane Specifications

This chapter offers guidelines for personal and equipment safety, and notes about the BPN-SAS3-815TQ version documented in this manual.

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 card 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 backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

C-3 Version Information

The BPN-SAS3-815TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS3-815TQ, Revision 1.00, the most current release available at the time of publication. Refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

C-5 Rear Connector Definitions

1. Backplane Main Power Connectors

The 4-pin connectors, designated JP10 provide power to the backplane.

Main Power (JP10)	
Pin#	**Definition**
1	+12V
2 and 3	Ground
4	+5V

2. Peripheral Drive 4-Pin Connectors

The 4-pin connectors, designated J9 and J10, provide power to DVD or other peripheral drives.

Peripheral Drive Power (J9 and J10)	
Pin#	**Definition**
1	+5V
2 and 3	Ground
4	+12V

3, 4. JTAG Connector and Upgrade Connector

The JTAG connector, designated JP47, and the upgrade connector, designated JP46, are for diagnostic purposes. These connectors should be used by a certified and experienced technician.

5. MG9071 Chip

The MG9071 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

6. Sideband Headers

The sideband header is designated JP51. For SES-2 to work properly, you must connect an 8-pin sideband cable.

Sideband Header (JP51)			
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

C-6 Rear Jumpers and Pin Definitions

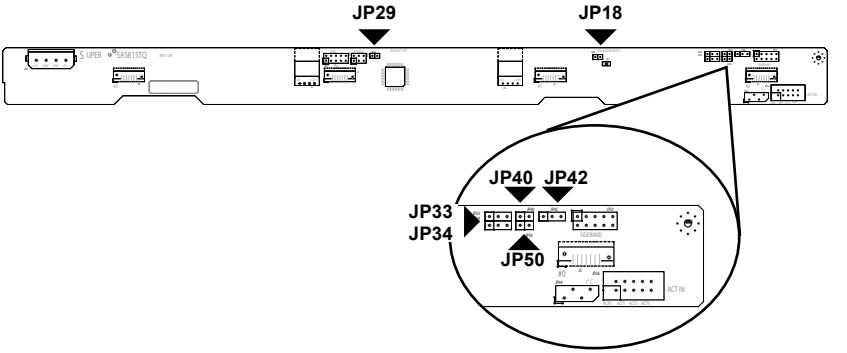
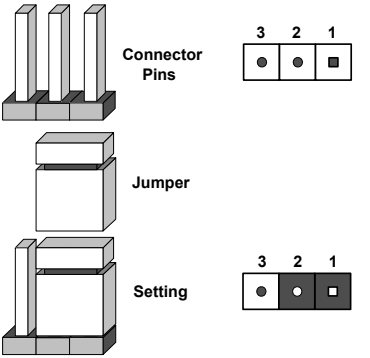


Figure C-2. Rear Jumpers

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



General Jumpers		
Jumper	**Settings**	**Description**
JP18	Open: Enabled Closed: Disabled	Buzzer Reset
JP29	Open: Default Closed: Reset	MG 9071 Chip Reset

C-7 Rear LED Indicators

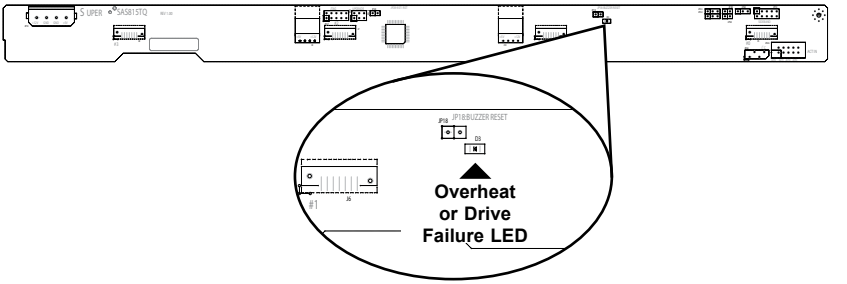


Figure C-3. Rear LEDs

Rear LEDs		
LED	**State**	**Specification**
D3	On	Overheat or Drive Failure

Disclaimer (cont.)

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