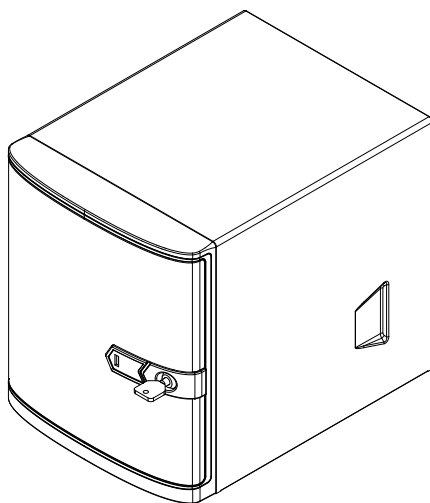# SUPERSERVER®

5028L-TN2

USER'S MANUAL

Revision 1.0

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

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

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

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

FCC Statement: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

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 1.0
Release Date: September 10, 2015

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

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

Preface

About this Manual

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

Please refer to the server specifications page on our Web site for updates on supported memory, processors and operating systems (www.supermicro.com).

This manual may be periodically updated without notice. Please check the Supermicro Web site for possible updates to the manual revision level.

Warnings

Special attention should be given to the following symbols used in this manual.

Warning! Indicates important information given to prevent equipment/property damage or personal injury.

Warning! Indicates high voltage may be encountered when performing a procedure.

Contents

Chapter 4 Advanced Motherboard Setup

Chapter 5 Advanced Chassis Setup and Maintenance *5-1*

Chapter 6 BIOS

Chapter 1

Introduction

1-1   Overview

The SuperServer 5028L-TN2 is a cloud-base edge server comprised of two main subsystems: the SC721TQ-250B mini-tower chassis and the X10SLV-Q single processor motherboard. It is designed for file back up and synchronizing solutions. It is also well-suited for space-efficient compact design, NAS Servers, SOHO Entry-Level Server and Embedded Applications. Refer to the Supermicro web site for information on operating systems that have been certified for use with the system (www.supermicro.com).

The 5028L-TN2 Super Server

In addition to the above components, the server includes:

* One SAS/SATA backplane (CSE-SAS-733TQ-O-P)

* Cooling: One 12-cm fan (FAN-0124L4)

* Rear I/O panel: (MCP-260-00070)

* Four hard drive carriers (MCP-220-00075-0B)

Note: For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

* Supermicro product manuals: http://www.supermicro.com/support/manuals/

* Product drivers and utilities: ftp://ftp.supermicro.com

* Product safety info:
  http://www.supermicro.com/about/policies/safety_information.cfm

For support, email support@supermicro.com.

1-2   Motherboard Features

The server is built around the X10SLV-Q, a single processor motherboard based on the Intel Q87 chipset. Below are the main features. Figure 1-1 is a block diagram of the chipset.

Processors

The X10SLV-Q supports a single 4th Generation Intel Core i7, i5, i3, Pentium/Celeron processor. Refer to the web site for a complete listing of supported processors (www. supermicro.com).

Memory

The board has two DIMM slots that can support up to 16GB of Non-ECC DDR3 SODIMM up to 1600MHz memory.

Serial ATA

A SATA controller is also integrated into the chipset to provide two SATA 3.0 (mSATA) and two SATA 2.0 ports.

PCI Expansion Slots

The system has one mini PCIe slot, full and half card with mSATA support.

Input/Output Ports

The I/O ports on the chassis include:

One DVI-I	One HDMI
One DP	Two GbE LAN
Two USB 3.0	Two USB 2.0
Two COM	One Audio

X10SLV-Q

BLOCK DIAGRAM
RoHS 6/6

PCIe x16 SLOT	PCIe3.0_x16 8.0GT/s		VRD12.5	SVID	VRM 12.5

PCIe x16 SLOT — PCIe3.0_x16 8.0GT/s

INTEL LGA1150 (Socket-H3) — VRD12.5 — SVID — VRM 12.5

DVI-I — Digital port B — DDI B
HDMI — Digital port C — DDI C
Display Port — Digital port D — DDI D

DDR3 (CHA) 1600/1333/1066MHz — DIMMA1
SODIMM
DDR3 (CHB) 1600/1333/1066MHz — DIMMB1

x4 DMI 5GT/s   x2 FDI 2.7 Gb/s

Mini PCI-E SLOT Shared with mSATA — PCIe2.0_x1 5GT/s — PCIE[2]
SATA-III 6Gb/s — USB[11]

Note: I-SATA0 Function disabled whe m-SATA inserted — SATA[0]

2 X SATA-III — SATA[0/1]

2 X SATA-III — SATA-III 6Gb/s — SATA[4/5]
2 X USB 3.0 Rear — USB3.0 5Gbps — USB[0/1]
2 X USB 2.0 REAR — USB2.0 480Mbps — USB[2/3]
2 X USB 2.0 Front — USB2.0 480Mbps — USB[4/5]
1 X USB A-type — USB2.0 480Mbps — USB[10]

Intel **Q87** Express PCH

RGB

PCIE[3] — PCIe2.0_x1 2.5GT/s — GLAN1 I217V — RJ45
PCIE[4] — PCIe2.0_x1 2.5GT/s — GLAN2 I210-AT — RJ45

LPC — TPM1.2 Header

NCT6106D LPC I/O HWM — COM1/2 Rear
COM 3/4/5 Header
Note: COM5 support RS485/

Realtek ALC888S-VD2 — AZALIA
SPI — FLASH SPI 128Mb
GPIO Expander

Figure 1-1. System Block Diagram

Note: This is a general block diagram. See Chapter 4 for details.

1-3   Chassis Features

The SuperServer 5028L-TN2 is built on the SC721TQ-250B, a compact mini-tower chassis. It has a hinged front cover that hides the storage drives and control panel. The following is a general outline of the main features.

System Power

The system has a single 250W Flex ATX Multi-output AC-DC power supply (part number PWS-251-1H). It has Bronze level certification from 80 Plus.

Drives

The chassis supports up to four 3.5" hot-swap SAS/SATA drives and two 2.5" fixed internal drives. The internal drives are not hot-swappable. The drives are supported by a SATA/SAS backplane with SES2.

It also supports one slim DVD drive.

PCI Slots

The chassis includes a slot for one low-profile PCI-E expansion card.

Control Panel

The control panel provides system monitoring and power control. LEDs indicate power on, network activity, hard disk drive activity and system overheat. The control panel also includes a main power button and a reset button.

Cooling System

The chassis has one 9cm rear fan with 25db whisper quiet operation, and an optional 8cm front fan.

1-4   Contacting Supermicro

Headquarters

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

Europe

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

Notes

Chapter 2

System Interface

2-1   Overview

The chassis includes a control panel on the front that includes power buttons and status monitoring lights.
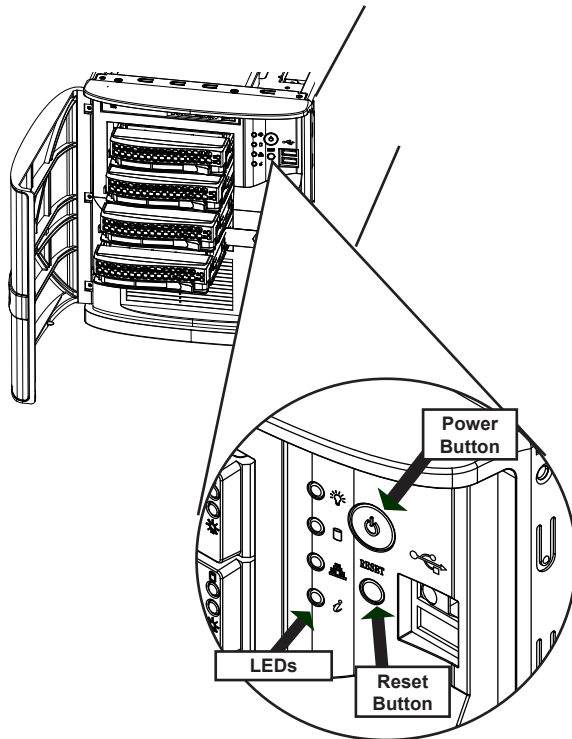
Figure 2-1. Control Panel

2-2   Control Panel Buttons

The chassis includes two push-buttons that control power to the system.

Power

The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power.

Reset

The reset button is used to reboot the system.

2-3   Control Panel LEDs

There are four LEDs that provide status information about the system.

Power

Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.

HDD

Indicates activity on the hard disk drive when flashing.

NIC

Indicates network activity when flashing.

Information LED

Alerts operator to several states, as noted in the table below.

Information LED	
Status	**Description**
Continuously on and 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	Remote UID is on. Use this function to identify the server from a remote location.

Overheating

There are several possible responses if the system overheats.

Overheat Temperature Setting

Some backplanes allow the overheat temperature to be set at 45, 50, or 55 degrees by changing a jumper setting. For more information, consult the backplane user manual on the Supermicro website.

Responses

1. Use the LEDs to determine the nature of the overheating condition.

2. Confirm that the chassis covers are installed properly.

3. Check the routing of the cables and make sure all fans are present and operating normally.

4. Verify that the heatsinks are installed properly.

Notes

Chapter 3

Standardized Warning Statements for AC Systems

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 chapter in its entirety before installing or configuring components in the Supermicro chassis. Some warnings may not apply for your system.

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.

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.

اقر 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

此產品的短路(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 electrische installatie. Controleer of het beveiligde aparaat 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.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

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

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 للهيكل لتثبيت أو إزالة مكونات الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 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 لتركيب 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 لتركيبها في مناطق محظورة .
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،
قفل ومفتاح أو أي وسيلة أخرى للأمان

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。

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 (if applicable to your system)

Note: Not applicable to this system.

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.

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 (if applicable to your system)

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。
修理する際には注意ください。

警告
当系统正在进行时，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 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 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 instalacion 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
本产品的废弃处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.

<div dir="rtl">

סילוק המוצר

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

</div>

<div dir="rtl">

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

</div>

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 (if applicable to your system)

Warning!   **Note:** Not applicable to this system.

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 ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

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

אזהרה !
כאשר מסירים את 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!

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

Warnung

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 câbles 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 צוין על ידי סופרקמיקרו 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, AC어댑터를 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 UL또는 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 4

Advanced Motherboard Setup

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1.

Please review the Safety Precautions in Chapter 4 before installing or removing components.

4-1   Handling the Motherboard

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to any printed circuit boards (PCBs), it is important to handle them very carefully (see previous chapter). To prevent the motherboard from bending, keep one hand under the center of the board to support it when handling. The following measures are generally sufficient to protect your equipment from electric static discharge.

Precautions

- Use a grounded wrist strap designed to prevent ESD.

- Touch a grounded metal object before removing boards from antistatic bags.

- Handle a board 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 motherboard, add-on cards and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

Unpacking

The motherboard is shipped in antistatic packaging to avoid electrical static discharge. When unpacking the board, make sure the person handling it is static protected.

4-2   Processor Installation

The X10SLV-Q supports a 4th generation Intel Core i7, i5, i3, Pentium or Celeron, processor. Refer to the Supermicro website for updates on CPU support.

Important:

- When handling the processor package, avoid placing direct pressure on the label area of the fan.

- Always connect the power cord last, and always remove it before adding, removing or changing any hardware components.

- Install the heatsink only after installing the CPU into the socket and after installing the motherboard into the chassis. Use only an Intel certified multi-directional heatsink.

- If you receive the motherboard without a processor installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent. Otherwise, contact your retailer immediately.

Installing the Processor

1. Gently press down the load plate handle and push it outward (to the right side) to unlock it.

2. Once the load plate handle is unlocked, gently lift the handle to open the load plate. When the load plate is open, use your thumb and your index finger to hold the CPU at the north center edge and the south center edge of the CPU.
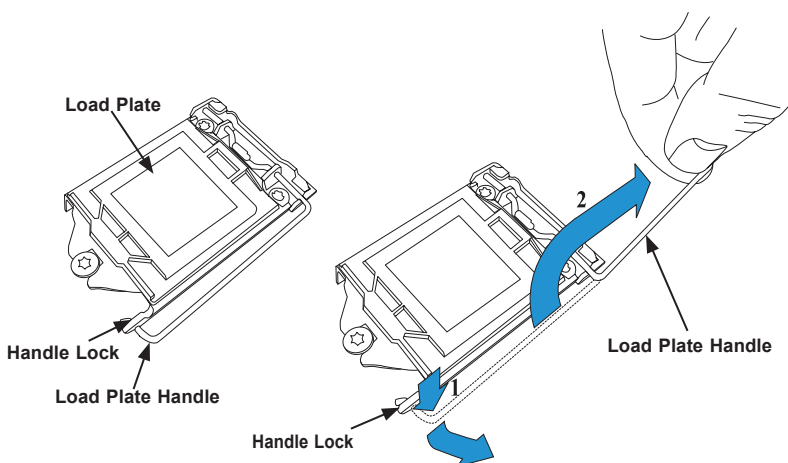
3. When the load plate is open, use your thumb and your index finger to hold the CPU at the north center edge and the south center edge of the CPU.
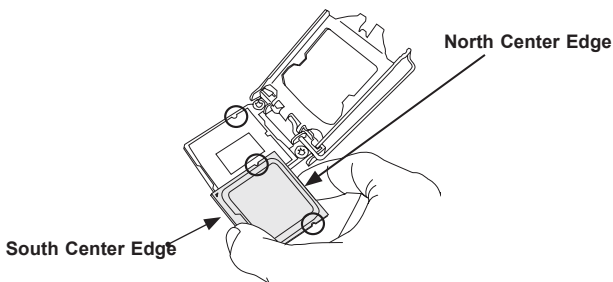
4. Align the CPU keys, which are the semicircular cutouts on the sides of the CPU (shown below), against the socket keys, the semicircular notches on the sides of the CPU socket. Align CPU Pin 1, the triangle at the bottom left of the CPU, against Pin 1 of the socket, the triangle marker at the bottom left of the CPU socket.
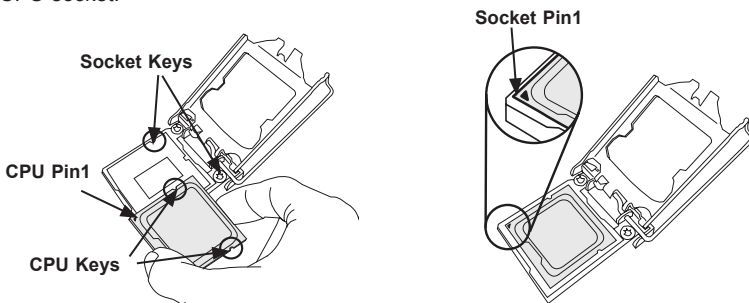
5. Once they are aligned, carefully lower the CPU straight down into the socket. (To avoid damaging the CPU or the socket, do not drop the CPU on the socket. Do not rub the CPU against the surface or against any pins of the socket.)

6. With the CPU seated inside the socket, inspect the four corners of the CPU to ensure that it is properly installed.
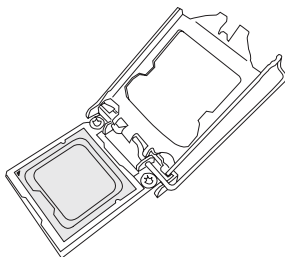
7. Once the CPU is properly installed, use your thumb to gently push the load plate handle down to the handle lock and lock it.

CPU properly installed

Load Plate Handle is locked into place
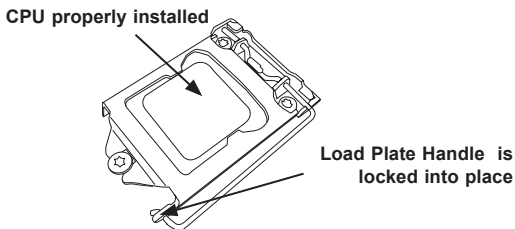
8. When the CPU is securely locked into the CPU socket, the plastic cap will be automatically loosened from the load plate. Use your thumb and index finger to remove the plastic cap from the socket.

The plastic cap will pop open when the CPU is properly installed in the socket. Remove the cap from the socket.
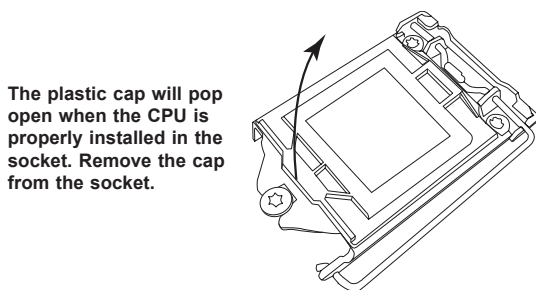
Caution: You can only install the CPU inside the socket only in one direction. Make sure that it is properly inserted into the CPU socket before closing the load plate. If it does not close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

4-3   CPU Heatsink Installation

Installing the CPU Heatsink with Fan

1. Locate the CPU fan power connector on the motherboard. (Figure 4-3)

2. Position the heatsink so that the heatsink fan wires are close to the CPU fan power connector and do not interfere with other components.

3. Inspect the CPU fan wires to make sure that the wires are routed through the bottom of the heatsink.

4. Remove the thin layer of the protective film from the heatsink.The CPU may overheat if this film is not removed.

5. Apply the proper amount of thermal grease on the CPU. **Note**: If your heatsink came with a thermal pad, ignore this step.
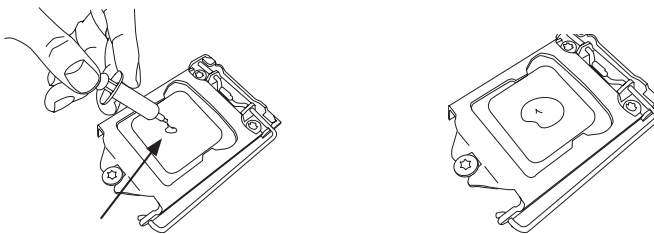
Thermal Grease

6. Make sure the wires are not pinched between the heatsink and the CPU. Also make sure to keep clearance between the fan wires and the fins of the heatsink.

7. Align the four heatsink fasteners with the mounting holes on the motherboard. Gently push the pairs of diagonal fasteners (#1 & #2, #3 and #4) into the mounting holes until you hear a click. Also, make sure to orient each fastener so that the narrow end of the groove is pointing outward.

Figure 4-1. Active CPU Heatsink

8. Once all four fasteners are securely inserted into the mounting holes, and the heatsink is properly installed on the motherboard, connect the heatsink fan wires to the CPU fan connector.

4-4   Installing Memory

Memory Support

The X10SLV-Q motherboard supports up to 16GB of DDR3 non-ECC SO-DIMM up to 1600MHz in two low-profile horizontal slots. Check the Supermicro website for a list of memory modules that have been validated.

Installing the Memory DIMMs

Insert one or two SO-DIMMs into the memory slots, starting with DIMMA1, then DIMMB1. See instructions on the next page.

Exercise extreme care when installing or removing DIMM modules to prevent damage.
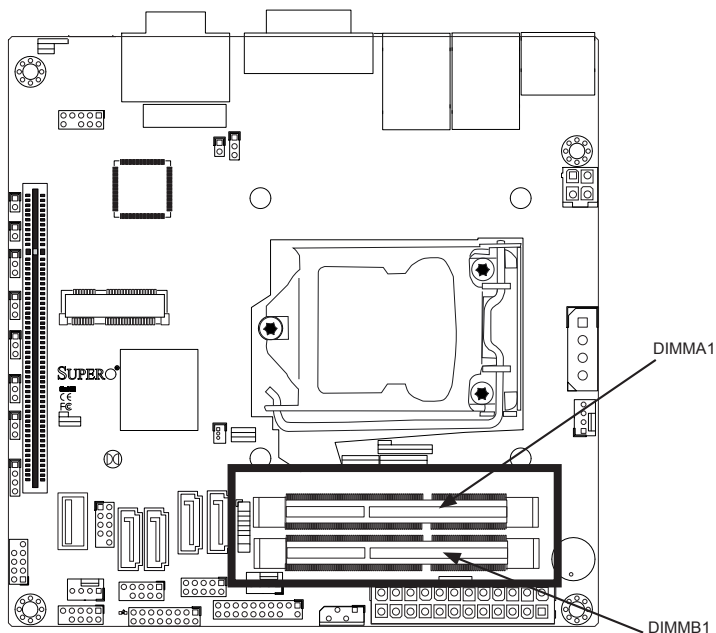
Figure 4-2. Memory Slots on the Motherboard

1. Position the SO-DIMM module's bottom key so it aligns with the receptive point on the slot. Take note of the module's side notches and the locking clips on the socket.

Align
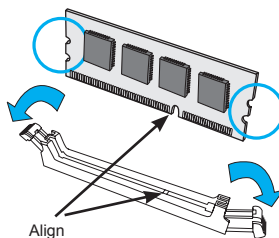
2. Insert the SO-DIMM module straight down.
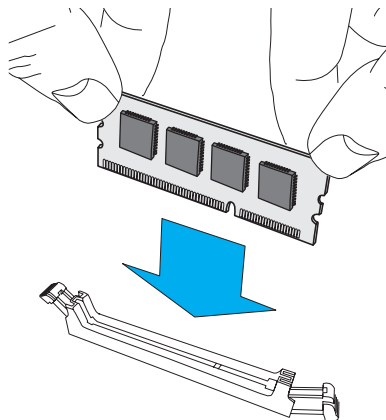
3. Press down until the module locks into place. The side clips will automatically secure the SO-DIMM module, locking it into place.
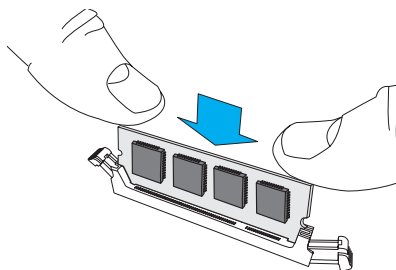
To Remove:

Use your thumbs to gently push the side clips near both ends away from the module. This should release it from the slot. Pull the SO-DIMM module upwards.
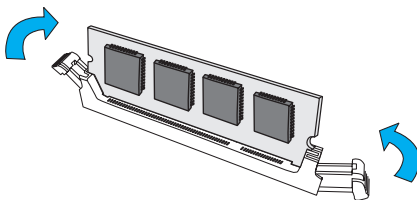
4-5   Connecting Cables

Once the motherboard is installed, connect the cables to the board. These include the data cables for the peripherals and power button/LED and the power cables.

Connecting Data Cables

The cables used to transfer data from the peripheral devices have been carefully routed to prevent them from blocking the flow of cooling air that moves through the system from front to back. The following data cables should be connected. See the layout for connector locations.

- SATA drive data cables

- Control Panel (power button) cable (JF1)

If you need to disconnect any of these cables, take care to keep them routed as they were originally when reconnecting them. Also, make sure the red wires connect to the pin 1 locations. **Important!** Make sure the the cables do not come into contact with the fans.

Connecting the Power Button

The JF1 connector contains header pins for the front control panel. All JF1 wires have been bundled into a single ribbon cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the board. The other end connects to the Control Panel PCB board, located just behind the system status LEDs on the chassis.

4-6   Rear I/O Ports

The I/O ports are color coded.
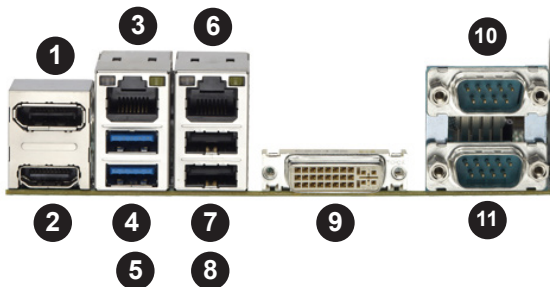
Figure 4-3. Rear I/O Ports

Rear I/O Port Locations			
1	Display Port	7	USB3 (2.0)
2	HDMI Port	8	USB2 (2.0)
3	Gb LAN1 Port	9	DVI-I Port
4	USB1 (3.0)	10	COM2
5	USB0 (3.0)	11	COM1
6	Gb LAN2 Port		

4-7 Motherboard Details
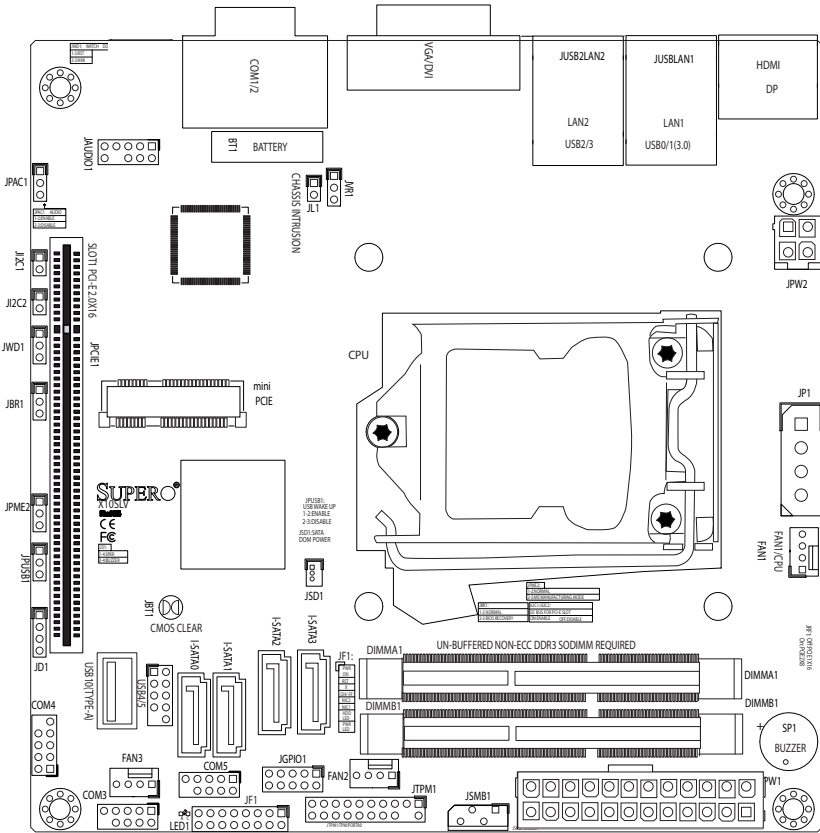
Figure 4-4. X10SLV Layout

Notes

- "■" indicates the location of "Pin 1".

- Jumpers not indicated are for test purposes only.

Ports, LEDs, and Connectors	
Connector	**Description**
Audio FP	Front Panel Audio Header
Battery	Onboard Battery
COM1/COM2	COM1 and COM2 Ports (on the I/O backpanel*)
COM3-COM5	COM3/COM4/COM5 Port Headers
Fan1-Fan3	System/CPU Fan Headers (Fan1: CPU Fan)
HDMI/DP	DisplayPort (on the I/O backpanel)
JD1	Speaker/buzzer (Pins 3-4: Buzzer, Pins 1-4: External Speaker)
JF1	Front Panel Control Header
JL1	Chassis Intrusion Header
JPW1	24-pin ATX Power Connector
JPW2	12V 4-pin CPU power Connector (Required and alternative single power source.)
JSD1	SATA DOM (Device_On_Module) Power Connector
JTPM1	Trusted Platform Module (TPM) Header
LAN1/LAN2	Gigabit (RJ45) Ports LAN1 and LAN2 (on the I/O backpanel)
SP1	Internal Speaker/Buzzer
I-SATA0-3	(Intel-)Serial ATA (SATA 3.0) Ports 0-1 (6Gb/sec), Ports 2-3 (3Gb/s)
mini PCIE	Mini PCIE Slot with mSATA support
Slot 1	PCI-Express 2.0 x16 Slot
JGPIO 1	General Purpose I/O Expander Header
USB 0/1, 2/3	Backpanel USB 3.0 Ports 0/1 and USB 2.0 Ports 2/3
USB 4/5	Front Panel USB Header for USB 2.0 Ports 4/5
USB 10	Internal Type A USB 2.0 Port 10
DVI-I	DVI (Combined Digital and Analog Video Interface) Port
JSMB1	System Management Bus (SMB) Header
LED1	Onboard Standby Power LED (Solid Green: Power On)

Jumper Descriptions		
Jumper	**Name**	**Setting**
JBR1	BIOS Recovery	Pins 1-2 (Normal)
JBT1	CMOS Clear	Short contact pads to reset CMOS
JI2C1/JI2C2	SMB to PCIe Slots	Off (Disabled)
JPAC1	Audio Enable	Pins 1-2 (Enabled)
JPME2	Intel ME Manufacturing Mode Select	Pins 1-2 (Normal)
JWD1	Watch Dog Enable	Pins 1-2 (Reset)
JPUSB1	USB Wake-Up Enable/Disable	Pins 2-3 (Disabled)

4-8   Connector Definitions

Universal Serial Bus (USB)

Four Universal Serial Bus ports are located on the I/O backpanel. These are USB 0/1 (3.0) and USB 2/3 (2.0). Additionally, one header (USB 4/5, 2.0), and one Type A port (USB 10, 2.0) are also located on the motherboard to provide front chassis access. (Cables are not included). See the tables on the right for pin definitions.

Back Panel USB Type A USB 10 Pin Definitions			
Pin#	Definition	Pin#	Definition
1	+5V	5	+5V
2	USB_PN	6	USB_PN
3	USB_PP	7	USB_PP
4	Ground	8	Ground

Front Panel USB 2.0 Pin Definitions			
Pin #	Definition	Pin #	Definition
1	+5V	6	+5V
2	USB_PN	7	USB_PN
3	USB_PP	8	USB_PP
4	Ground	9	Ground
5	NA	10	Key

Serial Ports (COM1~COM5)

Two COM ports (COM1, COM2) are located on the motherboard's I/O back panel. COM3, COM4 and COM5 are headers and are located near the I-SATA ports to provide additional onboard serial ports.

Serial Ports COM1~COM5 Pin Definitions			
Pin #	Definition	Pin #	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	N/A

VESA DisplayPort (DisplayPort)

DisplayPort, develped by the VESA consortium, delivers digital display, and fast refresh rate. It can connect to virtually any display device using a DisplayPort adapter for devices such as VGA, DVI or HDMI. The motherboard supports the DisplayPort standard version 1.2a.

HDMI Port

One HDMI (High-Definition Multimedia Interface) Port is located in the middle of the I/O backpanel. This connector is used to display both high definition video and digital sound through an HDMI-capable display, using the same (HDMI) cable. The motherboard supports HDMI Specification version 1.4a.

DVI-I Port (DVI)

One DVI Port (Digital Visual Interface) is located next to the LAN ports on the I/O backpanel. DVI-I (digital and analog) provides the option of compatibility with a VGA interface.

Note: The motherboard supports any combination of up to two concurrent displays.

LAN Ports (LAN1/LAN2)

Two gigabit LAN ports are located on the I/O back panel. These ports accept RJ45 type cables and are used to connect the system to a network.

RJ45/LAN Pin Definitions			
Pin #	Definition	Pin #	Definition
1	TX_D1+	5	BI_D3-
2	TX_D1-	6	RX_D2-
3	RX_D2+	7	BI_D4+
4	BI_D3+	8	BI_D4-

Power Button (JF1)
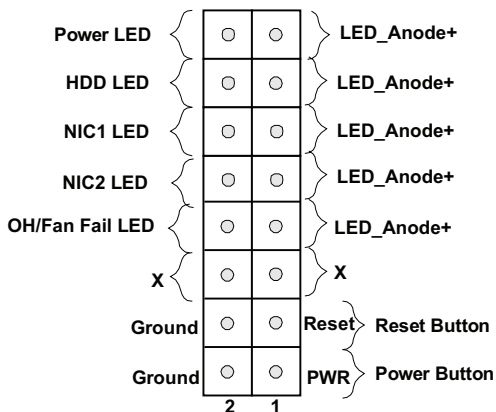
Figure 4-5. Control Panel Header Pins

Power Button

The power button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. To turn off the power when set to suspend mode, press the button for at least four seconds.

Power Button Pin Definitions (JF1)	
Pin#	Definition
1	Signal
2	Ground

Power LED

The power LED connection is located on pins 15 and 16 of JF1.

Power LED Pin Definitions (JF1)	
Pin#	Definition
15	+3.3V
16	Ground

HDD LED

The HDD LED connection is located on pins 13 and 14 of JF1. Attach a hard drive LED cable here to display disk activity (for any hard drive activities on the system, including Serial ATA and IDE).

HDD LED Pin Definitions (JF1)	
Pin#	Definition
13	+3.3V
14	HD Active

24-pin ATX Power Connector (JPW1)

The 24-pin power connector is used to provide power to the motherboard. This connector meets the SSI EPS 12V specification.

ATX Power 24-pin Connector Pin Definitions (JPW1)			
Pin#	Definition	Pin #	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	COM	3	COM
16	PS_ON	4	+5V
17	COM	5	COM
18	COM	6	+5V
19	COM	7	COM
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	COM	12	+3.3V

(Required)

4-pin ATX Power Connector (JPW2)

The 4-pin ATX power connector is used to provide additional power to the CPU.

Note: Either JPW1 or JPW2 may be used as the main power input

ATX 4-pin CPU Power Connector Pin Definitions	
Pins	Definition
1 and 2	Ground
3 and 4	+12V

Fan Headers

The motherboard has three fan headers (Fan1~Fan3). These fans are 4-pin fan headers. Although Pins 1~3 of the fan headers are backward compatible with the traditional 3-pin fans, please use 4-pin fans on the motherboard to enable the motherboard to control fan speed through the BIOS. .

Note: The speeds of 4-pin (PWM) fans are controlled by Thermal Management using BIOS Hardware Monitoring in the Advanced Settings. (The default setting is Disabled.)

Fan Header Pin Definitions	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	PWM_Control

TPM Header (JTPM1)

This header is used to connect a Trusted Platform Module (TPM), available from a third-party vendor. A TPM is a security device that allows encryption and authentication of hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

Trusted Platform Module Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	LCLK	2	GND
3	LFRAME	4	No Pin
5	LRESET	6	VCC5
7	LAD3	8	LAD2
9	VCC3	10	LAD1
11	LAD0	12	GND
13	RSV0	14	RSV1
15	SB3V	16	SERIRQ
17	GND	18	CLKRUN
19	LPCPD	20	RSV2

SATA DOM Power (JSD1)

The SATA DOM Power on JSD1 is used to supply power to SATA Disk-on-Module (DOM) solid-state storage devices.

SATA DOM Power Pin Definitions	
Pin#	Definition
1	+5V
2	Ground
3	Ground

System Management Bus (JSMB1)

A System Management Bus header is located at JSMB1. Connect the appropriate cable here to use the SMB features of the motherboard.

System Management Bus	
Pin#	Definition
1	Data
2	Ground
3	CLK
4	No Connection

GPIO Header (JGPIO 1)

The JGPIO1 header is located near the SATA connectors on the motherboard. The JGPIO header is a general-purpose I/O expander on a pin header via the SMBus. See the table on the right for pin definitions. .

GPIO Expander Pin Definitions			
Pin#	Definition	Pin	Definition
1	VCC5	2	GND
3	GP0	4	GP1
5	GP2	6	GP3
7	GP5	8	GP5
9	GP6	10	GP7

Mini PCI-E Slot (Mini PCIE)

The Mini PCI-E slot is used to install a compatible Mini PCI-E device. Refer to the table on right for pin definitions.

The mSATA feature leverages the speed and reliability of the SATA interface to provide a high performance, cost-effective storage solution for smaller devices like notebooks and netbooks.

The specification maps SATA signals onto an existing small form factor connector, enabling more compact integration in a wide variety of applications for both hard disk (HDD) and solid state drives (SSDs). The mSATA connector allows companies to increase the storage offerings of their products without compromising valuable space.

Mini PCI-E Pin Definitions			
Pin#	Definition	Pin#	Definition
51	NC	52	+3.3Vaux
49	NC	50	GND
47	NC	48	+1.5V
45	NC	46	NC
43	NC	44	NC
41	+3.3Vaux	42	NC
39	+3.3Vaux	40	GND
37	GND	38	USB_D+
35	GND	36	USB_D-
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3Vaux
21	DET_CARD_PLUG	22	PERST#
19	NC	20	W_DISABLE#
17	NC	18	GND
15	GND	16	NC
13	REFCLK+	14	NC
11	REFCLK-	12	NC
9	GND	10	NC
7	CLKREQ#	8	NC
5	NC	6	1.5V
3	NC	4	GND
1	WAKE#	2	3.3Vaux

Front Panel Audio Control Header

When front panel headphones are plugged in, the back panel audio output is disabled. This is done through the FP Audio header (AUDIO FP). If the front panel interface card is not connected to the front panel audio header, jumpers should be installed on the header pin pairs: 1-2, 5-6, and 9-10. If these jumpers are not installed, the back panel line out connector will be disabled and microphone input Pin 1 will be left floating, which can lead to excessive back panel microphone noise and cross talk..

High Definition Fron Panel Audio	
Pin#	Signal
1	MC_L
2	AUD_GND
3	MC_R
4	FP_Audio-Detect
5	Line_2_R
6	SENSE1_RETURN
7	AUD_GND
8	Key
9	Line_2_L
10	SENSE2_RETURN

Speaker (JD1)

On the JD1 header, Pins 3-4 are used for the internal speaker. Close Pins 3-4 with a cap to use the onboard speaker. If you wish to use an external speaker, attach the external speaker cable to Pins 1-4.

Speaker Connector Pin Definitions	
Pin Setting	Definition
Pins 3-4	Internal Speaker
Pins 1-4	External Speaker

Internal Speaker/Buzzer (SP1)

The internal speaker on SP1 can be used to provide audible indications for various beep codes.

Internal Buzzer Pin Definition		
Pin#	Definitions	
Pin 1	Pos. (+)	Beep In
Pin 2	Neg. (-)	Alarm Speaker
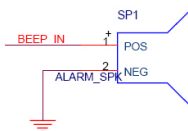
4-9   Jumper Settings

Explanation of Jumpers

To modify the operation of the motherboard, 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. See the motherboard layout pages for jumper locations.

Note: On a two-pin jumper, "Closed" means the jumper is on both pins and "Open" means the jumper is either on only one pin or completely removed.
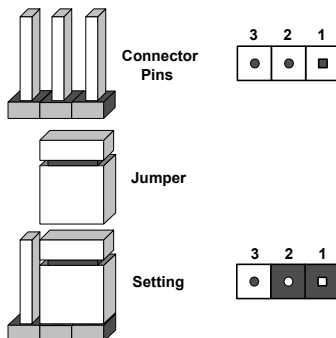
CMOS Clear

JBT1 is used to clear CMOS (which will also clear any passwords). Instead of pins, this jumper consists of contact pads to prevent accidentally clearing CMOS.

To clear CMOS

1. First power down the system and unplug the power cord(s).

2. With the power disconnected, short the CMOS pads with a metal object such as a small screwdriver.

3. Remove the screwdriver (or shorting device).

4. Reconnect the power cord(s) and power on the system.

Note: Do not use the PW_ON connector to clear CMOS.

Metal contact pads
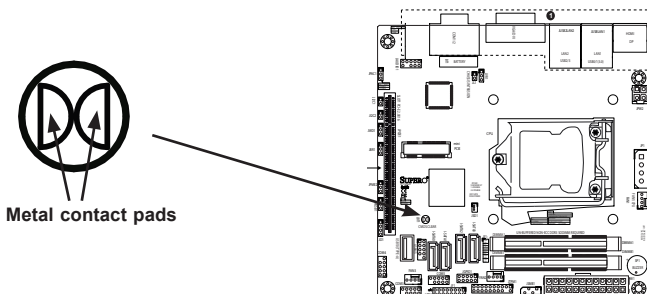
BIOS Recovery (JBR1)

Close pins 2 and 3 of Jumper JBR1 for BIOS recovery. The default setting is on pins 1 and 2 for normal operation. See the table on the right for jumper settings.

BIOS Recovery Jumper Settings	
Settings	**Definition**
Pins 1-2	Normal (Default)
Pins 2-3	Enabled

SMB (I^2C) Bus to PCIe Slots

Jumpers JI^{2}C1 and JI^{2}C2 allow you to connect the System Management Bus (SMB) to PCI-E and PCI slots. The default setting is set to **Disabled**. See the table on the right for jumper settings.

I^2C **to PCIe Slots** Jumper Settings	
Jumper	**Definition**
On	Enabled
Off	Disabled (Default)

Front Panel Audio Enable (JPAC1)

JPAC1 allows you to enable or disable front panel audio support. The default position is on pins 1 and 2 to enable on-board audio connections. See the table on the right for jumper settings

Front Panel Audio Jumper Settings	
Settings	**Definition**
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

USB Wake-Up (JPUSB1)

Use the JPUSB1 jumper to enable system "wake-up" via a USB device. This jumper allows you to "wake-up" the system by pressing a key on the USB keyboard or by clicking the USB mouse of your system. The JPUSB1 jumper is used together with the USB Wake-Up function in the BIOS. Enable both the jumper and the BIOS setting to activate this function. See the table on the right for jumper settings and jumper connections.

Note: The default jumper setting is "Disabled". When the "USB Wake-Up" function is enabled, it will be active on all USB ports.

USB Wake-Up Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Enabled
Pins 2-3	Disabled (Default)

Watch Dog Reset (JWD1)

Watch Dog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1~2 to reset the system if an application hangs. Close pins 2~3 to generate a non-maskable interrupt signal for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in the BIOS.

Watch Dog Jumper Settings	
Jumper	**Definition**
Pins 1-2	Reset (default)
Pins 2-3	NMI
Open	Disabled

ME Manufacturing Mode (JPME2)

Close Pin 2 and Pin 3 of Jumper JPME2 to bypass SPI flash security and force the system to operate in the Manufacturing mode, allowing the user to flash the system firmware from a host server for system setting modifications.

ME Manufacturing Mode Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Normal (Default)
Pins 2-3	Enabled

4-10 Onboard Indicators

LAN Port LEDs

Two LAN ports are located on the I/O backpanel. Each Ethernet LAN port has two LEDs. The yellow Activity LED (right, see below) indicates activity, while the Link/Speed LED (left) may be green, amber or off to indicate the speed of the connection. See the tables at right for more information.
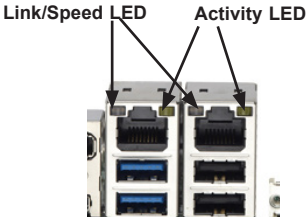
GLAN Link/Speed LED Indicator	
LED Color	Definition
Off	No Connection or 10 Mbps
Green (On)	100 Mbps
Amber (On)	1 Gbps

GLAN Activity LED Indicator	
Color	Definition
Yellow (Flashing)	ConnectionActive

Link/Speed LED   **Activity LED**

Standby Power LED (LED1)

An Onboard Power LED is located at LED1 on the motherboard. When LED1 is on, the AC power cable is connected and the power supply hard switch is on. The system may be on standby or running.

Onboard PWR LED (LED1) LED Status	
Status	Definition
Off	System Off (Soft Switch)
On	Power is Detected

Standby Power LED
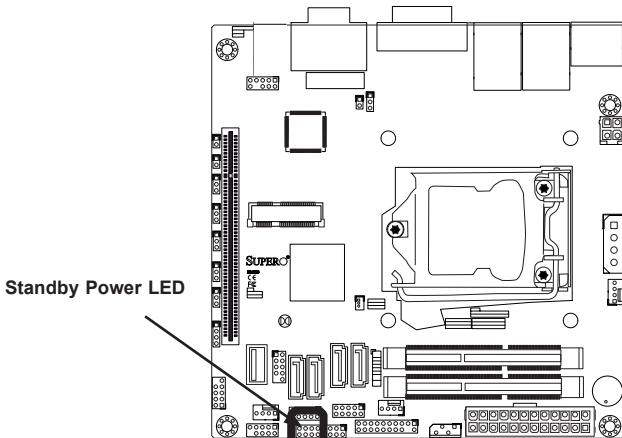
4-11 Serial ATA and HDD Connections

Note the following conditions when connecting the Serial ATA and hard disk drive cables: Be sure to use the correct cable for each connector.

SATA Connections (I-SATA0~I-SATA3)

Four total Serial ATA (SATA) connectors are located on the motherboard. The X10SLV-Q motherboard supports two SATA 3.0 (0/1) and two SATA 2.0 (2/3). These Serial Link connections provide faster data transmission than legacy Parallel ATA.

SATA Connector Types		
Port#	Connection Type	Connector Color
I-SATA 0/1,	SATA 3.0	White
I-SATA 2/3	SATA 2.0/SATA 3.0*	Black

SATA 2.0/3.0 Connectors Pin Definitions	
Pin#	Signal
1	Ground
2	SATA_TXP
3	SATA_TXN
4	Ground
5	SATA_RXN
6	SATA_RXP
7	Ground
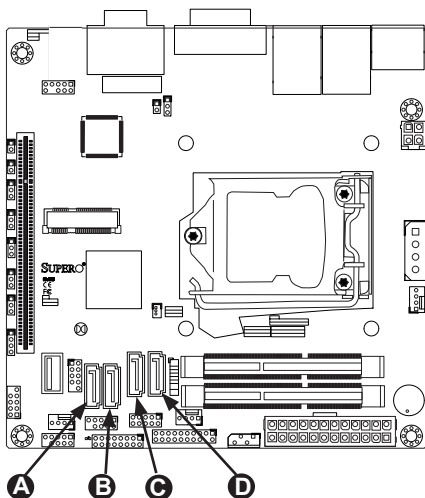
A I-SATA0 (3.0)
B I-SATA1 (3.0)
C I-SATA2 (2.0)
D I-SATA3 (2.0)

4-12 Installing Software

The Supermicro ftp site contains drivers and utilities for your system at ftp://ftp. supermicro.com. Some of these must be installed, such as the chipset driver.

After accessing the ftp site, go into the CDR_Images directory and locate the ISO file for your serverboard. Download this file to create a CD/DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro Website at http://www.supermicro. com/products/. Find the product page for your serverboard here, where you may download individual drivers and utilities.

After creating a CD/DVD with the ISO files, insert the disk into the CD/DVD drive on your system and the display shown below should appear.
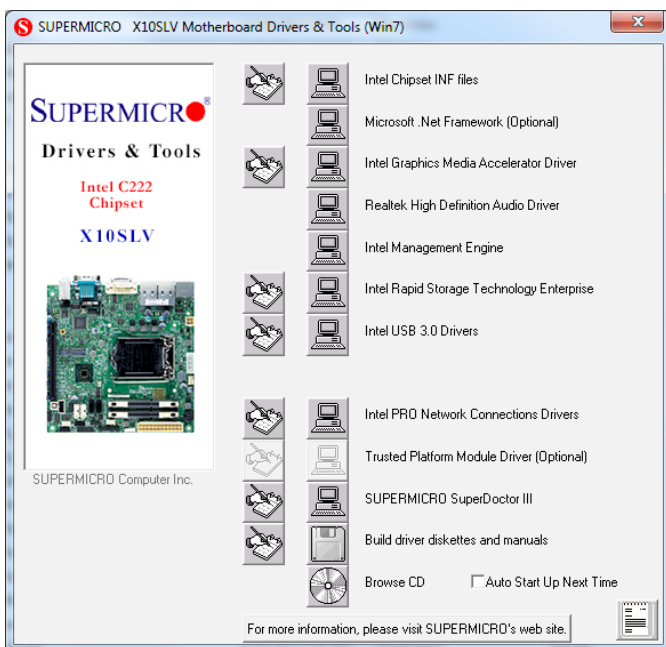
Figure 4-5. Driver/Tool Installation Display Screen

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

SuperDoctor III

The SuperDoctor® III program is a web-based management tool that supports remote management capability. It includes Remote and Local Management tools. The local management is called SD III Client. The SuperDoctor III program allows you to monitor the environment and operations of your system. SuperDoctor III displays crucial system information such as CPU temperature, system voltages and fan status. See the figures below for examples of the SuperDoctor III interface.

Note: The default User Name and Password for SuperDoctor III is ADMIN / ADMIN.

Note: When SuperDoctor III is first installed, it adopts the temperature threshold settings that have been set in BIOS. Any subsequent changes to these thresholds must be made within SuperDoctor III, as the SuperDoctor III settings override the BIOS settings. To set the BIOS temperature threshold settings again, you would first need to uninstall SuperDoctor III.
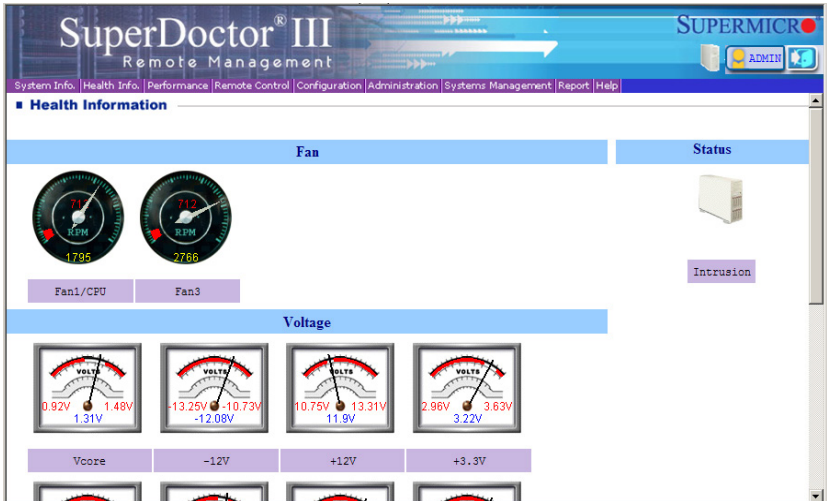
Figure 4-6. SuperDoctor III Interface Display Screen (Health Information)
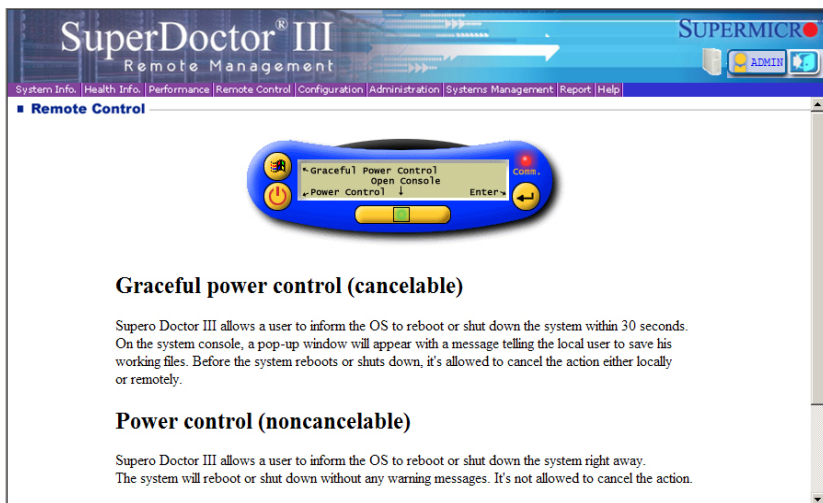
Figure 4-7. SuperDoctor III Interface Display Screen (Remote Control)

Note: The SuperDoctor III program and User's Manual can be downloaded from the Supermicro web site at http://www.supermicro.com/products/accessories/software/SuperDoctorIII.cfm. For Linux, we recommend that you use the SuperDoctor II application instead.

4-13 Onboard Battery

Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

LITHIUM BATTERY

BATTERY HOLDER
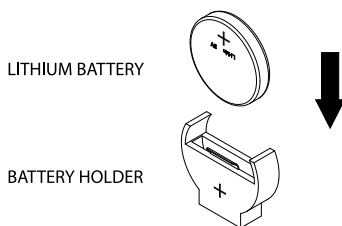
Figure 4-7. Installing the Onboard Battery

Caution: There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarites (see Figure 4-7). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032). Dispose of used batteries according to the manufacturer's instructions.

Notes

Chapter 5

Advanced Chassis Setup and Maintenance

This chapter covers the steps required to install components and perform maintenance on the chassis. 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 4 and the warnings and precautions listed in the setup instructions.
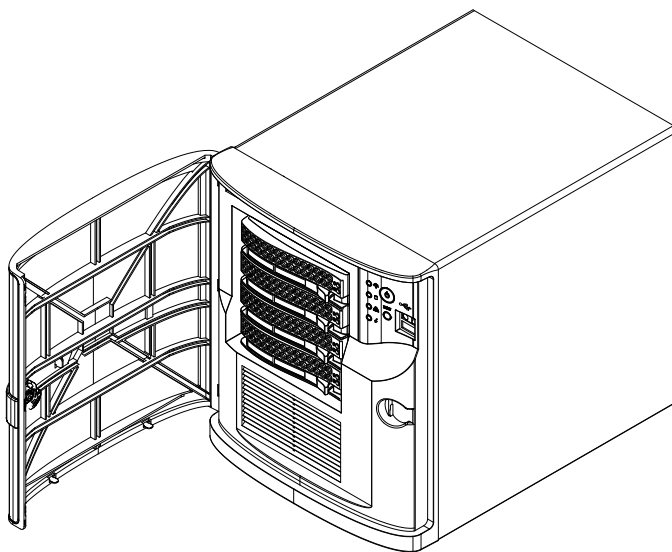
Figure 5-1. SC721 Chassis

5-1   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.

5-2   Hardware Security

The chassis features multiple locking devices to help deter hardware theft and protect user data. While no lock is infallible, it is recommended that users keep their systems locked when not in use.

Front Bezel Lock

The locking front bezel protects against unauthorized removal of the hard drives. The key to locks or unlocks the bezel. Always remove the key from the lock and store the key in a secure place.

Rear Chassis Hasp
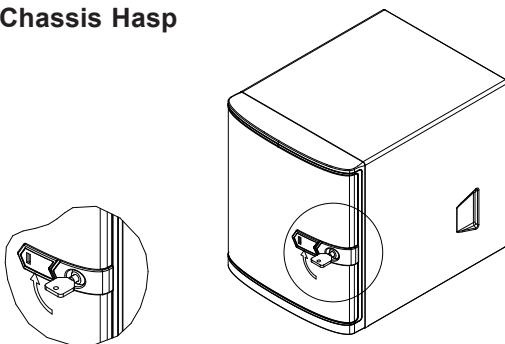
Figure 5-2. Front Bezel Lock

Unauthorized entry through the rear of the chassis may be discouraged by placing a lock on the rear of the chassis. The chassis is equipped with a rear chassis hasp that can accomodate a variety of commonly available locks (not included).

Kensington Cable Slot (K-Slot)
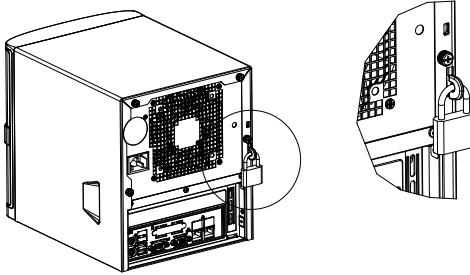
Figure 5-3. Rear Bezel Lock

The chassis features a Kensington cable slot or K-slot. This slot accepts a standard Kensington cable locking device (not included), Attach the loop end of the cable to a secure object, then insert the device into the K-slot as illustrated below.
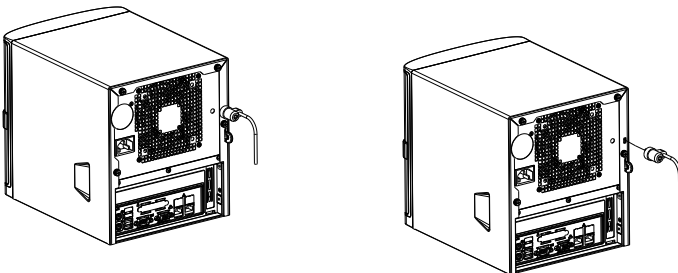
Figure 5-4. Inserting a Kensington Cable Device (Not Included)

5-3   Removing the Chassis Cover
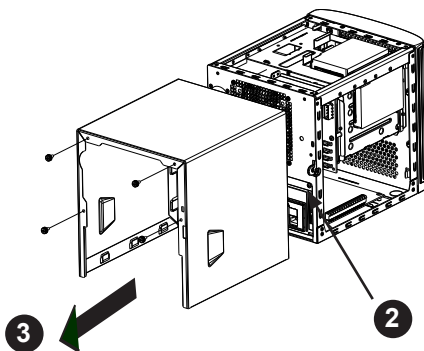
Figure 5-5. Removing the Chassis Cover

Removing the Chassis Side Cover

1. Power down the system and unplug the power cord from the power supply as described in Section 5-1.

2. On the right side rear of the chasses, lift up on the release lever.

3. Slide the cover toward the rear of the chassis then lift off.

Caution: Except for short periods of time, do *not* operate the server without the cover in place. The chassis cover helps facilitate proper airflow and prevent overheating.

5-4   Removing and Installing Drives

Front Mounted Hot-Swap Drives
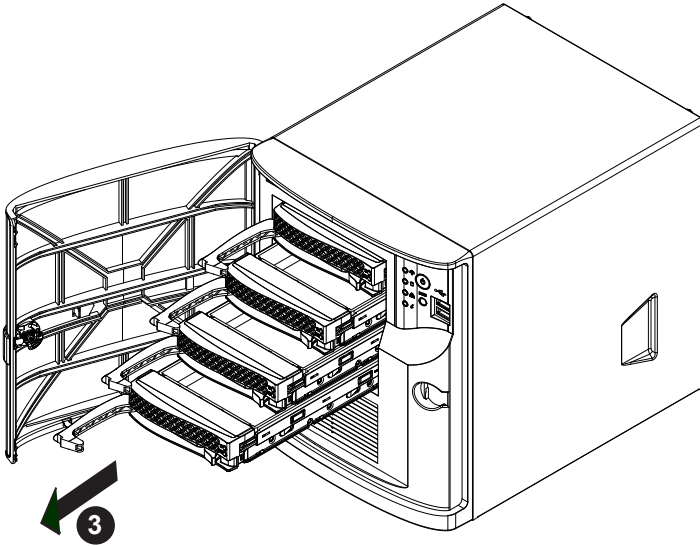
Figure 5-6. Removing the Hard Drive Carrier from the Drive Cage

The chassis supports four 3.5" hot-swappable hard drives in hard drive carriers. These hard drives can be removed from the chassis without powering down the system.

Removing 3.5" Hot-Swap Hard Drives

1.   Unlock the front bezel and swing it open.

2.   Press the release tab on the hard drive carrier, this will extend the hard drive carrier handle.

3.   Use the hard drive carrier handle to pull the hard drive out of the chassis.
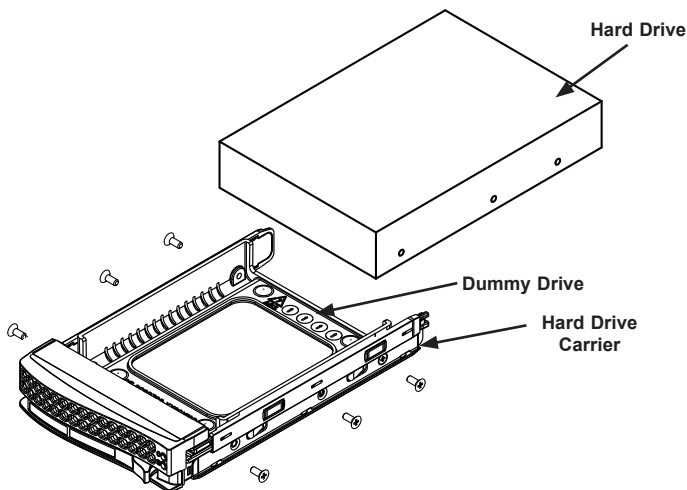
Figure 5-7. Installing a Hard Drive into Hard Drive Carrier

Installing a Hard Drive into the Hard Drive Carrier

1. Remove the six screws which secure the dummy drive into the hard drive carrier.

2. Remove the dummy drive from the hard drive carrier.

3. Install a new hard drive into the hard drive carrier with the printed circuit board side facing down so that the mounting holes in the drive align with those in the carrier.

4. Secure the hard drive by tightening all six screws.
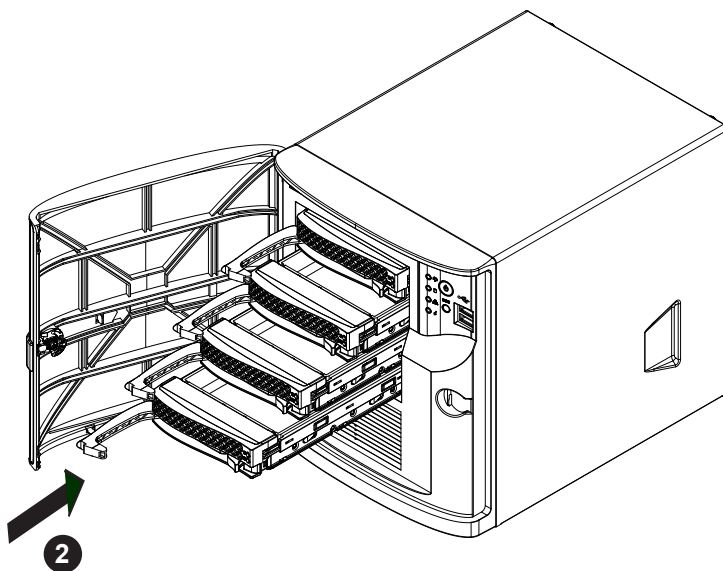
Figure 5-8. Installing the Hard Drive Carrier into the Hard Drive Cage

Installing 3.5″ Hot-Swap Hard Drives

1. Insert the new hard drive into the hard drive carrier.

2. Insert the hard drive carrier into the drive bay, using the drive carrier handle to push it to the back of the hard drive cage.

3. Close the handle until the drive carrier clicks into the locked position.

4. Close and lock the front bezel.

Installing the Internal Fixed Hard Drives

The chassis supports two internal 2.5" SATA fixed hard drives, one top mounted drive and one side mounted drive.
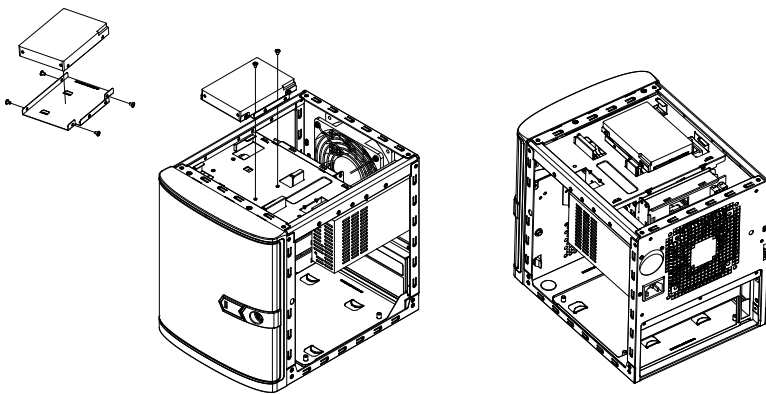
Figure 5-9. Installing the Top Mounted Fixed Hard Drive

Installing the Top Mounted Fixed Hard Drive

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Place the 2.5" hard drive into the hard drive bracket and secure the hard drive to the bracket with the four screws provided.

3. Place the hard drive and bracket into the top mounting position of the chassis as illustrated above and secure it to the chassis with two screws.

4. Replace the chassis cover and power up the system.

Installing the Side Mounted Fixed Hard Drive
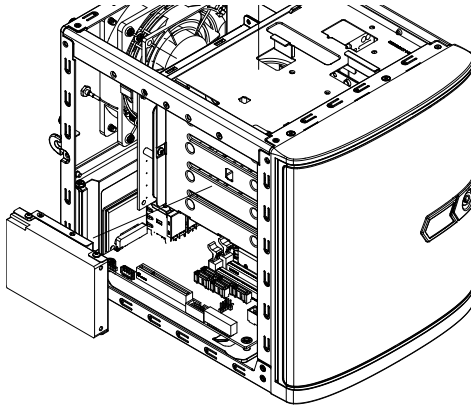
Figure 5-10. Installing the Side Mounted Fixed Hard Drive

Installing the Side Mounted Fixed Hard Drive

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Place the 2.5" hard drive into the hard drive bracket and secure the hard drive to the bracket with the four screws provided.

3. Place the hard drive and bracket into the side mounting position of the chassis by inserting the pin on the bracket into the mounting hole on the chassis as illustrated above.

4. Replace the chassis cover and power up the system.

5-5   Installing the DVD Drive

The chassis supports one DVD drive. It can be installed only if the top mounted fixed HDD is not used. It requires a mounting bracket rail, pn MCP-220-81502-0N.
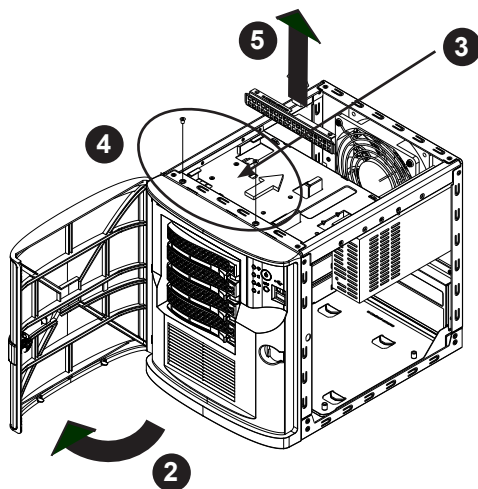
Figure 5-11. Configuring the Chassis for the DVD Drive

Installing the DVD Drive

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Unlock the front bezel and swing it open.

3. Remove the bracket for the top mounted fixed hard drive, by removing the two screws.

4. Remove the two screws securing the EMI grid to the front of the chassis.

5. Remove the EMI grid from inside the chassis, just behind the chassis front. If you will later remove the DVD drive, save the EMI grid.

6. Remove the plastic DVD bay cover from the chassis front by carefully breaking it out.

7. Install the bracket rail (part number MCP-220-81502-0N) onto the left hand side of the DVD drive, using the two screws provided.
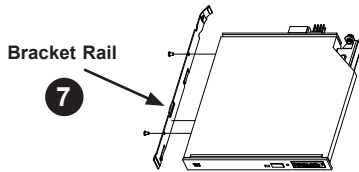
Figure 5-12. Securing the Bracket Rail to the DVD Drive
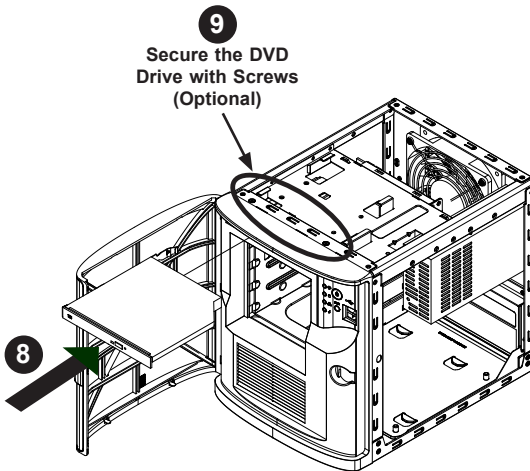
Figure 5-13. Installing the DVD Drive

8. Slide the DVD drive into the chassis until it snaps into place. SC721_ DVDinChassis

9. Some DVD drives allow you to secure the drive with two screws.

10. Connect the SATA cable and the power cable to the DVD drive.

11. Close the front bezel, replace the chassis cover and power up the system.

5-6   Installing Expansion Cards

The SC721 chassis includes one PCI slot for a low profile expansion card. It is installed by removing the chassis tray that holds the motherboard and rear I/O shield.
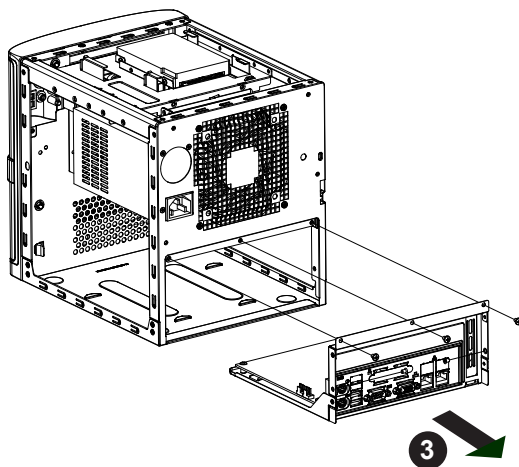
Figure 5-14. Removing the Rear Tray from the Chassis

Installing the Expansion Card

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Remove the three screws securing the rear tray to the rear of the chassis and set them aside for later use.

3. Pull the rear tray out from the chassis.
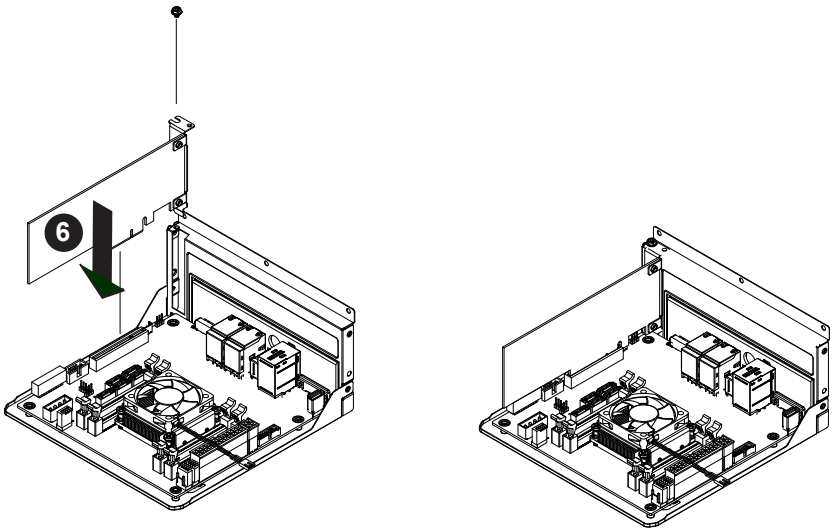
Figure 5-15. Installing the Expansion Card

4. Remove the screw securing the PCI slot cover over the PCI slot in the rear of the tray and set it aside for later use.

5. Slide the PCI slot cover up and out of the PCI slot.

6. Insert the card into its slot on the motherboard while aligning its bracket into the slot on the chassis drawer.

7. Secure the bracket of the expansion card with the screw previously set aside.

8. Slide the rear tray into the chassis and secure it with the screws.

9. Replace the chassis cover and power up the system.

5-7   Installing the Rear Exhaust Fan

The chassis includes a 12 cm rear exhaust fan that provides cooling. The chassis also features a set of mounting holes which will support a standard 9 cm exhaust fan (fan not included).
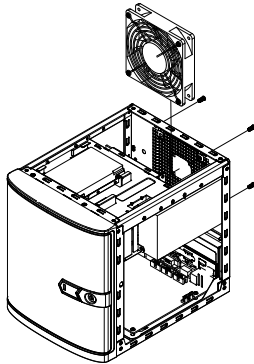
Figure 5-16. Installing the Exhaust Fan

Installing the Exhaust Fan

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Place the fan on top of the fan grill, aligning the mounting holes of the fan grill with the mounting holes of the system fan.

3. Secure the fan to the chassis with four screws.

4. Connect the fan cable to the motherboard.

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

5-8   Replacing the Power Supply

The chassis includes a fixed power supply. If it is necessary to replace the power supply, follow the instructions below.
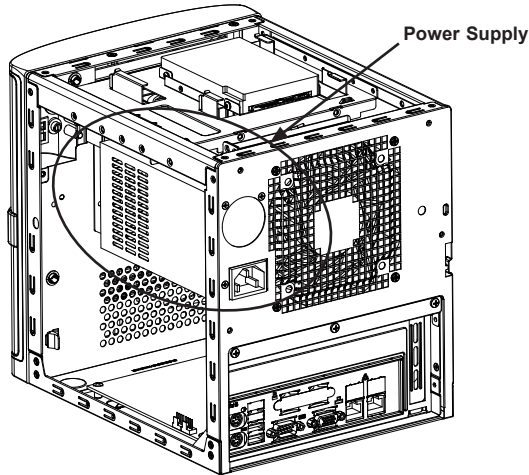
Figure 5-17. Removing the Power Supply

Changing the Power Supply

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Remove power cables from the motherboard, hard drives, and backplane.

3. Remove the screws securing the power supply to the chassis, which are located on the rear of the chassis. Set these screws aside for later use.

4. Remove the power supply from the the chassis.

5. Replace the failed power supply with an identical model power supply.

6. Secure the new power supply using the screws previously set aside.

7. Reattach the power cables to the motherboard, hard drives, and backplane.

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

5-9 Replacing the Backplane

The chassis includes a backplane, CSE-SAS-733TQ. In the unlikely event that it becomes necessary to replace the backplane, follow the instructions below. Information on backplane settings can be found on the Supermicro web site under Accessories > Storage Backplanes > SAS > CSE-SAS-733TQ.
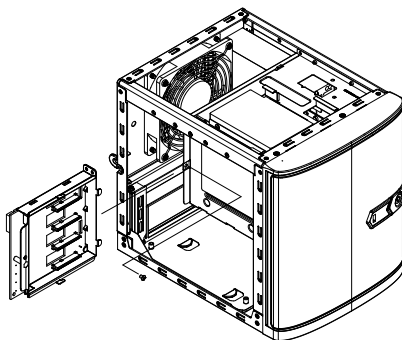
Figure 5-18. Removing the Backplane and Mounting Bracket

Replacing the Backplane

1. Power down the system as described in Section 5-1 and remove the chassis cover.

2. Remove the screw securing the backplane mounting bracket to the chassis. Set the screw aside for later use.

3. Remove the backplane mounting bracket with the backplane from the chassis.

4. Remove the screws securing the backplane to the backplane mounting bracket and set these aside for later use.

5. Slide the backplane off of the backplane mounting bracket.

6. Place a new backplane into the backplane mounting bracket and secure it with the screws previously set aside.

7. Insert the backplane and backplane mounting bracket into the chassis and secure it with the screw previously set aside.

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

Chapter 6

BIOS

6-1   Introduction

This chapter describes the AMI BIOS Setup Utility for the X10SLV-Q. The ROM BIOS is stored in a Flash EEPROM and can be easily updated. This chapter describes the basic navigation of the AMI BIOS Setup Utility setup screens.

Note: For AMI BIOS Recovery, please refer to the UEFI BIOS Recovery Instructions in Appendix C.

Starting BIOS Setup Utility

To enter the AMI BIOS Setup Utility screens, press the <Delete> key while the system is booting up.

Note: In most cases, the <Delete> key is used to invoke the AMI BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.

Each main BIOS menu option is described in this manual. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. Options in blue can be configured by the user. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (**Note**: the AMI BIOS has default text messages built in. Supermicro retains the option to include, omit, or change any of these text messages.)

The AMI BIOS Setup Utility uses a key-based navigation system called "hot keys". Most of the AMI BIOS setup utility "hot keys" can be used at any time during the setup navigation process. These keys include <F1>, <F4>, <Enter>, <ESC>, and arrow keys, etc.

Note: Options printed in **Bold** are default settings.

How To Change the Configuration Data

The configuration data that determines the system parameters may be changed by entering the AMI BIOS Setup utility. This Setup utility can be accessed by pressing <Del> at the appropriate time during system boot.

How to Start the Setup Utility

Normally, the only visible Power-On Self-Test (POST) routine is the memory test. As the memory is being tested, press the <Delete> key to enter the main menu of the AMI BIOS Setup Utility. From the main menu, you can access the other setup screens. An AMI BIOS identification string is displayed at the left bottom corner of the screen, below the copyright message.

Caution: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you have to update the BIOS, do not shut down or reset the system while the BIOS is updating. This is to avoid possible boot failure.

6-2   Main Setup

When you first enter the AMI BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS Setup screen is shown below.
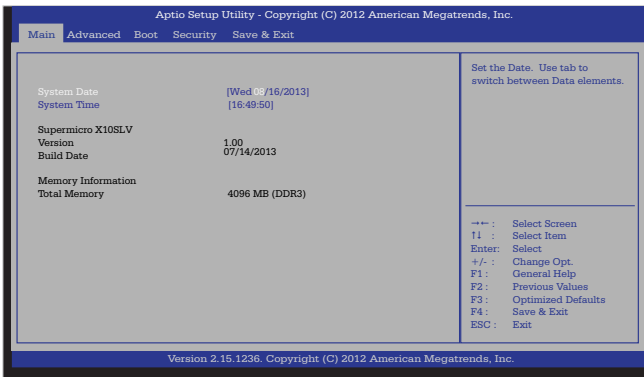
System Date/System Time

Use this option to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in Day MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.

Supermicro X10SLV/-Q

Version

Build Date

Memory Information

Total Memory

This displays the total size of memory available in the system.

6-3   Advanced Setup Configurations

Use the arrow keys to select Advanced Setup and press <Enter> to access the submenu items:
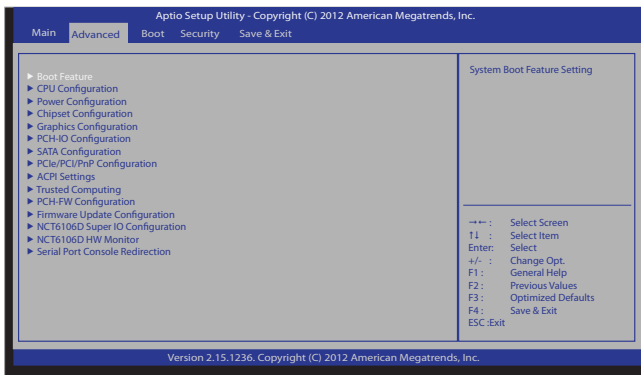
Caution: Take Caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency or an incorrect DRAM timing setting may cause the system to become unstable. When this occurs, restore the setting to the manufacture default setting.

▶Boot Feature

Quiet Boot

Use this feature to select the screen display between POST messages or the OEM logo at bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are **Enabled** and Disabled.

AddOn ROM Display Mode

Use this feature to set the display mode for the Option ROM. Select Keep Current to use the current AddOn ROM display setting. Select Force BIOS to use the Option ROM display mode set by the system BIOS. The options are **Force BIOS** and Keep Current.

Bootup Num-Lock

Use this feature to select the Power-on state for the Numlock key. The options are Off and **On**.

Wait For 'F1' If Error

Select Enabled to force the system to wait until the 'F1' key is pressed if an error occurs. The options are Disabled and **Enabled**.

Interrupt 19 Capture

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Enabled, the BIOS ROM of the host adaptors will "capture" Interrupt 19 at bootup and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Disabled, the BIOS ROM of the host adaptors will not capture Interrupt 19, and the drives attached to these adaptors will not function as bootable devices. The options are **Enabled** and Disabled.

Re-try Boot

If this item is enabled, the BIOS will automatically reboot the system from a specified boot device after its initial boot failure. The options are **Disabled**, Legacy Boot, and EFI Boot.

▶ Power Configuration

Watch Dog Function

If enabled, the Watch Dog timer will allow the system to reboot when it is inactive for more than 5 minutes. The options are Enabled and **Disabled.**

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override for the user to power off the system after pressing and holding the power button for 4 seconds or longer. Select Instant Off to instantly power off the system as soon as the user presses the power button. The options are **Instant Off** and 4 Seconds Override.

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Power-Off for the system power to remain off after a power loss. Select Power-On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Stay-Off**,** Power-On, and **Last State**.

▶CPU Configuration

The following CPU information will be displayed:

- Type of CPU
- CPU Signature
- CPU Stepping
- Microcode Patch
- FSB Speed
- Max (Maximum) CPU Speed
- Min (Minimum) CPU Speed
- CPU Speed
- Processor Cores
- Intel HT(Hyper-Threading) Technology
- Intel VT-x (Virtualization) Technology
- Intel SMX (Trusted Execution) Technology
- 64-bit
- EIST Technology
- CPU C3 State
- CPU C6 State
- CPU C7 State
- L1 Data Cache
- L1 Code Cache
- L2 Cache
- L3 Cache

Clock Spread Spectrum

If this feature is set to Enabled, the BIOS will monitor the level of electromagnetic interference caused by the components and will attempt to reduce the interference whenever needed. The options are Enabled and **Disabled**.

Hyper-threading

Select Enabled to support Intel Hyper-threading Technology to enhance CPU performance. The options are **Enabled** and Disabled.

Active Processor Cores

This feature determines how many CPU cores will be activated for each CPU. When all is selected, all cores in the CPU will be activated. (Please refer to Intel's web site for more information.) The options are **All,** 1, 2, and 3.

Limit CPUID Maximum

Select Enabled to set the maximum CPU ID value and to boot a legacy OS that cannot support processors with extended CPUID functions. The options are Enabled and **Disabled** (for the Windows OS).

Execute Disable Bit (Available if supported by the OS & the CPU)

Set to Enabled to enable the Execute Disable Bit to allow the processor to designate areas in the system memory where an application code can execute and where it cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor or damage the system during an attack. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

Intel® Virtualization Technology (Available when supported by the CPU)

Select Enabled to use the Intel Virtualization Technology to allow one platform to run multiple operating systems and applications in independent partitions, creating multiple "virtual" systems in one physical computer. The options are **Enabled** and Disabled.

Hardware Prefetcher (Available when supported by the CPU)

If set to Enabled, the hardware prefetcher will prefetch streams of data and instructions from the main memory to the L2 cache to improve CPU performance. The options are Disabled and **Enabled**.

Adjacent Cache Line Prefetch (Available when supported by the CPU)

Select Enabled for the CPU to prefetch both cache lines for 128 bytes as comprised. Select Disabled for the CPU to prefetch both cache lines for 64 bytes. The options are Disabled and **Enabled**.

> **Note**: If there is any change to this setting, you will need to power off and reboot the system for the change to take effect. Please refer to Intel's web site for detailed information.

CPU AES

Select Enable for Intel CPU Advanced Encryption Standard (AES) Instructions support to enhance data integrity. The options are **Enabled** and Disabled.

Boot Performance Mode

This feature selects the performance state the BIOS will set before the OS hand-off. The options are **Max Non-Turbo Performance** and Turbo Performance:

EIST

EIST (Enhanced Intel SpeedStep Technology) allows the system to automatically adjust processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. **Please refer to Intel's web site for detailed information.** The options are Disabled and **Enabled**. The following options will appear if EIST is enabled:

Turbo Mode

This feature allows processor cores to run faster than the frequency recommended by the manufacturer. The options are Disabled and **Enabled.** If this feature is set to Enabled, the following items will display:

CPU Power Limit1

Use this feature to set the power limit for CPU1. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

CPU Power Limit1 Time

This item allows the user to determine how long CPU1 should operate at the power limit set by the user for the item above. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

CPU Power Limit2

Use this feature to set the power limit for CPU2. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

Platform Power Limit Lock

Use this feature to lock the power limit of the motherboard. The options are **Enabled** and Disabled.

CPU Power Limit3

Use this feature to set the power limit for CPU3. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

CPU Power Limit3 Time

This item allows the user to determine how long CPU3 should operate at the power limit set by the user for the item above. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

CPU Power Limit3 Duty Cycle

This item allows the user to determine the percentage of time CPU3 should operate at the power set by the user for the item above (i.e., If Power Limit3 Time is set at 100 secs, a 60% duty cycle means CPU3 will run 60 seconds at the power limit set in Power Limit3 every 100 seconds.). Use the number keys on your keyboard to enter the value between 1~100. Enter 0 to use the manufacturer's default setting.

DDR Power Limit1

Use this feature to set the power limit for DDR Memory Module 1. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacture's default setting.

DDR Power Limit1 Time

This item allows the user to determine how long Memory Module 1 should operate at the power limit set by the item above. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

DDR Power Limit2

Use this feature to set the power limit for Memory Module 2. Use the number keys on your keyboard to enter the value. Enter 0 to use the manufacturer's default setting.

1-Core Ratio Limit

This increases (multiplies) 1 clock speed in the CPU core in relation to the bus speed when one CPU core is active. Press "+" or "-" on your keyboard to change the value. Enter 0 to use the manufacturer's default setting.

2-Core Ratio Limit

This increases (multiplies) 2 clock speeds in the CPU core in relation to the bus speed when two CPU cores are active. Press "+" or "-" on your keyboard to change the value. Enter 0 to use the manufacturer's default setting.

3 Core Ratio Limit

This increases (multiplies) 3 clock speeds in the CPU core in relation to the bus speed when three CPU cores are active. Use the number keys on your keyboard to enter the value. The default setting is **dependent on the CPU installed.**

4 Core Ratio Limit

This increases (multiplies) 4 clock speeds in the CPU core in relation to the bus speed when four CPU cores are active. Use the number keys on your keyboard to enter the value. The default setting is **dependent on the CPU installed.**

Energy Performance

Use this feature to select an appropriate fan setting to achieve the maximum system performance (with maximum cooling) or maximum energy efficiency (with maximum power saving). The fan speeds are controlled by the firmware management. The options are **Performance**, Balanced Performance, Balanced Energy, and Energy Efficient.

VR Current Value

Use this feature to set the limit on the current voltage regulator (VR). Press "+" or "-" on your keyboard to change this value. Enter 0 to use the manufacture default setting.

CPU C States

C-States architecture, a processor power management platform developed by Intel, can further reduce power consumption from the basic C1 (Halt State) state that blocks clock cycles to the CPU. Select Enabled for CPU C Sates support. The options are **Enabled** and Disabled. If this feature is set to Enabled, the following items will display:

Enhanced C1 State (Available when "CPU C States" is set to Enabled)

Select Enabled to enable Enhanced C1 Power State to boost system performance. The options are **Enabled** and Disabled.

CPU C3 Report (Available when "CPU C States" is set to Enabled)

Select Enabled to allow the BIOS to report the CPU C3 State (ACPI C2) to the operating system. During the CPU C3 State, the CPU clock generator is turned off. The options are **Enabled** and Disabled.

CPU C6 Report (Available when "CPU C States" is set to Enabled)

Select Enabled to allow the BIOS to report the CPU C6 State (ACPI C3) to the operating system. During the CPU C6 State, the power to all caches is turned off. The options are **Enabled** and Disabled.

C6 Latency (Available when "CPU C States" is set to Enabled)

Select Short to set a short delay time(period) during which the BIOS reports CPU C6 State (ACPI C3) to the operating system. Select Long to set a long delay time(period) during which the BIOS reports CPU C6 State (ACPI C3) to the operating system. The options are **Short** and Long.

CPU C7 Report (Available when "CPU C States" is set to Enabled)

Select Enabled to allow the BIOS to report the CPU C7 State (ACPI C3) to the operating system. CPU C7 State is a processor-specific low C-State. The options are Disabled, CPU C7, and **CPU C7s**.

C7 Latency (Available when "CPU C States" is set to Enabled)

Select Short to set a short delay time(period) during which the BIOS reports CPU C7 State (ACPI C3) to the operating system. Select Long to set a long delay time(period) during which the BIOS reports CPU C7 State (ACPI C3) to the operating system. The options are Short and **Long**.

C1 State Auto Demotion

When this item is enabled, the CPU will conditionally demote C3, C6 or C7 requests to C1 State based on un-cored auto-demote information. The options are Disabled and **Enabled.**

C3 State Auto Demotion

When this item is enabled, the CPU will conditionally demote C6 or C7 requests to C3 State based on un-cored auto-demote information. The options are Disabled and **Enabled.**

C State Pre-Wake

Select Enabled to support C State Pre-Wake State features. The options are **Enabled** and Disabled

Package C-State limit

Select Auto for the AMI BIOS to automatically set the limit on the C-State package register. The options are C0/C1, C2, C3, C6, C7, C7s and **Auto**.

ACPI T State

Select Enabled to support Advanced Configuration and Power Interface (ACPI) Throttling States (T State), which will lower the power consumption level for the system as to the power consumption level set for CPU Performance State 1 to achieve power efficiency. The options are **Enabled** and Disabled.

▶Chipset Configuration

Caution: Setting the wrong values in the following sections may cause the system to malfunction.

▶System Agent (SA) Configuration

The following System Agent (SA) information is displayed.

- System Agent Bridge Name
- VT-d Capability

VT-d

Select Enabled to enable Intel Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to the Virtual Machine Manager (VMM) through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The settings are **Enabled** and Disabled.

▶Graphics Configuration

This item displays the following graphics information:

Graphics Configuration

- IGFX VBIOS Version
- IGfx Frequency

Graphics Turbo IMON Current

Use this feature to set the limit on the current voltage regulator. Press "+" or "-" on your keyboard to change this value.

Primary Display

Use this feature to select the graphics device to be used as the primary display. You can select from a device installed on the CPU IGFX, CPU SLOT, or PCH SLOT. The options are **Auto**, CPU IGFX, CPU SLOT, and PCH SLOT.

CPU Slot (Available when Primary Display is set to Auto)

Use this item to select the graphics device installed in an expansion slot supported by the CPU to be used as the primary display. The options are **Auto,** SLOT1 PCI-E 2.0 X16 or SLOT1 PCI-E 3.0 X16.

PCH Slot (Available when Primary Display is set to Auto)

Use this item to select the graphics device installed in an expansion slot supported by the PCH to be used as the primary display. The options are **Auto,** PCIE3 and PCIE4.

CPU IGFX

Select Auto to keep an internal graphics device installed on an expansion slot supported by the CPU to be automatically enabled. The options are **Auto**, Disabled, and Enabled.

GTT Size

Use this feature to set the memory size to be used by the graphics translation table (GTT). The options are 1MB and **2MB**.

Aperture Size

Use this feature to set the Aperture size, which is the size of system memory reserved by the BIOS for graphics device use. The options are 128MB, **256MB** and 512 MB.

DVMT Pre-Allocated

Dynamic Video Memory Technology (DVMT) allows dynamic allocation of system memory to be used for video devices to ensure best use of available system memory based on the DVMT 5.0 platform. The options are **32M**, 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M, 416M, 448M, 480M, 512M, and 1024M.

DVMT (Dynamic Video Memory Technology) Total Gfx Mem

Use this feature to set the total memory size to be used by internal graphics devices based on the DVMT 5.0 platform. The options are 128MB, **256MB** and MAX.

Gfx (Graphics) Low Power Mode

Select Enabled to use the low power mode for internal graphics devices installed in a small form factor (SFF) computer. The options are **Enabled** and Disabled.

▶PCI-E Configuration

This item displays the information of the (graphics) device installed on a PCI-E slot.

SLOT1 PCI-E 3.0 X16

SLOT1 PCI-E 3.0 X16- Gen X, option support up to Gen3

This feature allows the user to select PCI-E support for the device installed on Slot1. The options are **Auto**, Gen1 (Generation 1), Gen 2 and Gen3.

Detect Non-Compliant Device

Select Enabled for the AMI BIOS to automatically detect a PCI-E device that is not compliant with the PCI-E standards. The options are Enabled and **Disabled**.

Program PCI-E ASPM After OpROM

PCI-E ASPM, the Active State Power Management for PCI-Express slots, is a power management protocol used to manage power consumption of serial-link devices installed on PCI-Exp slots during a prolonged off-peak time. If this item is set to Enabled, PCI-E ASMP will be programmed after OpROM. If this item is set to Disabled, the PCI-E ASPM will be programmed before OpROM. The options are **Enabled** and Disabled.

SLOT1 PCI-E 3.0 X16 ASPM

Use this feature to set the ASPM (Active State Power Management) level for the graphics device installed on a PCI-E or PCI slot specified by the user. The options are Disabled, ASPM L0s, ASPM L1, ASPM L0sL1, and **Auto**.

DMI Link ASPM Control

Use this feature to set the ASPM (Active State Power Management) state on the SA (System Agent) side of the DMI Link. The options are Disabled, L0s, L1 and **L0sL1**.

PCH DMI Link ASPM Control

Use this feature to set the ASPM (Active State Power Management) state on the device installed on the DMI Link supported by the PCH chip. The options are Disabled and **Enabled**.

▶Memory Configuration

This item displays the following information on the memory modules installed on the motherboard.

- Memory RC Version
- Memory Frequency
- Total Memory
- Memory Voltage
- DIMM A1
- DIMM B1
- CAS Latency (tCL)
- Minimum Delay Time
  - CAS to RAS (tRCDmin)
  - Row Precharge (tRPmin)
  - Active to Precharege (tRASmin)

Memory Frequency Limiter

This feature limits the frequency on which the system memory operates. The settings are **Auto**, 1067, 1333, and 1600.

Max TOLUD (Top of Low Usable DRAM)

This feature sets the maximum TOLUD value, which specifies the "Top of Low Usable DRAM" memory space to be used by internal graphics devices, GTT Stolen Memory, and TSEG, respectively, if these devices are enabled. The

options are **Dynamic**, 1 GB, 1.25 GB, 1.5 GB, 1.75 GB, 2 GB, 2.25 GB, 2.5 GB, 2.75 GB, 3 GB and 3.25 GB.

> **Note:** TSEG is a block of memory that is only accessible by the processor while operating in System Management Mode (SMM).

Memory Scrambler

This feature enables or disables memory scrambler support for memory error correction. The settings are **Enabled** and Disabled.

▶PCH-IO Configuration

This item displays the information for the PCH-IO Chip.

- Intel PCH Rev ID
- USB Configuration
- USB Devices: 1 Keyboard, 1 Mouse, 2 Hubs

EHCI1

Select Enabled to enable EHCI (Enhanced Host Controller Interface) Controller 1 for USB 2.0 support. One EHCI controller must always be enabled. The settings are **Enabled** and Disabled.

EHCI2

Select Enabled to enable EHCI (Enhanced Host Controller Interface) Controller 2 for USB 2.0 support. One EHCI controller must always be enabled. The settings are **Enabled** and Disabled.

Legacy USB Support

Select Enabled to support legacy USB devices. Select Auto to disable legacy support when legacy USB devices are not present. If Disable is selected, legacy USB devices will not be supported. The options are **Enabled,** Disabled and Auto.

Port 60/64 Emulation

This feature enables or disables I/O port 60h/64h emulation support. This should be enabled for complete USB keyboard legacy support for non-USB-aware operating systems. The options are Disabled and **Enabled**.

XHCI Hand-Off

This item is a work-around solution for operating systems that do not support XHCI (Extensible Host Controller Interface) hand-off. The XHCI ownership

change should be claimed by the XHCI driver. The settings are **Enabled** and Disabled.

EHCI Hand-Off

This item is for Operating Systems that do not support Enhanced Host Controller Interface (EHCI) hand-off. When this item is enabled, EHCI ownership change will be claimed by the EHCI driver. The settings are Enabled and **Disabled**.

XHCI Mode

This feature handles the operation mode for the XHCI (Extensible Host Controller Interface) controller. The settings are **Smart Auto**, Auto, Enabled, Disabled and Manual.

Frontside Audio Mode

This feature selects the type of audio output for the front_side audio header or connection. Select **HD Audio** for High Definition; otherwise, select AC '97 for legacy audio. The options are **HD Audio** and AC' 97.

Deep Sx Power Policies

Select Enabled to enable Deep Sleep State support. The settings are **Disabled,** Enabled in S5 and Enabled in S4-S5**.**

▶SATA Configuration

When this submenu is selected, the AMI BIOS automatically detects the presence of the SATA Devices and displays the following items:

SATA Controllers

This item Enables or Disables the built-in SATA controllers on the motherboard. The options are **Enabled** and Disabled.

SATA Mode Selection

This item selects the mode for the installed SATA drives. The options are IDE, **AHCI**, and RAID.

If the item above -SATA Mode Selection is set to AHCI, the following items are displayed:

Serial ATA Port 0~ Port 3

This item displays the information detected on the installed SATA drives on the particular SATA port.

- Model number of drive and capacity

- Software Preserve Support

Port 0 ~ Port 3 Hot Plug

This feature designates the port specified for hot plugging. Set this item to Enabled for hot-plugging support, which will allow the user to replace a SATA disk drive without shutting down the system. The options are **Enabled** and Disabled.

Port 0 ~ Port 1 SATA Device Type

This feature configures the selected SATA port to support either a solid state drive or hard disk drive. The options are **Hard Disk Drive** and Solid Sate Drive.

Port 0 ~ Port 3 Spin Up Device

On an edge detect from 0 to 1, set this item to allow the PCH to start a COMRESET initialization sequence to the device. The options are Enabled and **Disabled**.

If the item above - SATA Mode Selectiion is set to IDE, the following items are displayed:

Serial ATA Port 0~ Port 3

This item displays the information detected on the installed SATA drives on the particular SATA port.

- Model number of drive and capacity

- Software Preserve Support

If the item above - SATA Mode Select is set to RAID, the following items are displayed:

Serial ATA Port 0~ Port 3

This item displays the information detected on the installed SATA drives on the particular SATA port.

- Model number of drive and capacity

- Software Preserve Support

Port 0 ~ Port 3 Hot Plug

This feature designates this port for hot plugging. Set this item to Enabled for hot-plugging support, which will allow the user to replace a SATA drive without shutting down the system. The options are **Enabled** and Disabled.

Port 0 ~ Port 1 SATA Device Type

This feature configures the selected SATA port to support either a solid state drive or hard disk drive. Set this item to Enabled to enable hot-plugging. The options are **Hard Disk Drive** and Solid Sate Drive.

Port 0 ~ Port 3 Spin Up Device

On an edge detect from 0 to 1, set this item to allow the PCH to start a COMRESET initialization sequence to the device. The options are Enabled and **Disabled**.

▶PCIe/PCI/PnP Configuration

This feature allows the user to set the PCI/PnP configurations for the following items:

Above 4G Decoding

Select Enabled for 64-bit devices to be decoded above the 4GB address space If 64bit PCI decoding is supported by the system. The options are **Disabled** and Enabled.

VGA Palette Snoop

Select Enabled to support VGA palette register snooping which will allow the PCI cards that do not contain their own VGA color palette to examine the video cards palette and mimic it for proper color display. The options are **Disabled** and Enabled.

SLOT1 PCI-E 3.0 X16 OPROM

Select Disabled to deactivate the selected slot, Legacy to activate the slot in legacy mode and EFI to activate the slot in EFI mode. The options are Disabled, **Legacy** and EFI.

Launch Storage OPROM Policy

This feature controls how the system executes UEFI (Unified Extensible Firmware Interface), and legacy storage OPROM. Select Legacy Only to boot the system using a legacy device installed in a PCI slot. The options are UEFI Only and **Legacy Only**.

Other PCI Device ROM Priority

This feature selects a PCI device Option ROM for system boot if this device is not a network, mass storage, or video device. The options are UEFI Only and **Legacy Only**.

Onboard LAN1/Onboard LAN2

This setting enables or disables the designated onboard LAN port. The options are Disabled and **Enabled**.

Onboard LAN1 Option ROM/Onboard LAN2 Option ROM

Select PXE (Preboot Execution Environment) to boot the computer using a PXE device installed in a LAN port specified. Select Disabled to prevent system boot using a device installed in a LAN port. The options for Onboard LAN1 Option ROM are Disabled, and **PXE**.The options for Onboard LAN2 Option ROM are **Disabled** and PXE.

Network Stack

Select Enabled to enable PXE (Preboot Execution Environment) or UEFI (Unified Extensible Firmware Interface) for network stack support. The options are Enabled and **Disabled**.

Ipv4 PXE Support (Available when Network Stack is set to Enabled)

Select Enabled to enable Ipv4 PXE (Preboot Execution Environment) for boot support. If this feature is set to Disabled, Ipv4 PXE boot option will not be supported. The options are **Enabled** and Disabled.

Ipv6 PXE Support (Available when Network Stack is set to Enabled)

Select Enabled to enable Ipv6 PXE (Preboot Execution Environment) for boot support. If this feature is set to Disabled, Ipv6 PXE boot option will not be supported. The options are Enabled and **Disabled.**

▶**ACPI Settings**

High Precision Timer

Select Enabled to activate the High Performance Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are **Enabled** and Disabled.

ACPI Sleep State

This feature selects the ACPI Sleep State that the system will enter into when the suspend button is activated. The options are Suspend Disabled, and **S3 only (Suspend to RAM)**

▶Trusted Computing

(Available when a TPM Device is Detected)

Configuration

Security Device Support

Select Enable for the AMI BIOS to automatically download the drivers needed to provide Trusted Computing platform support for this machine to ensure date integrity and network security. The options are **Disable** and Enable.

TPM State

Select Enabled to use TPM (Trusted Platform Module) settings for system data security. The options are Disabled and **Enabled**.

Note: The system will reboot for the change on TPM State to take effect.

Pending Operation

Use this item to schedule a TPM-related operation to be performed by a security device for TPM support. The options are **None**, Enable Take Ownership, Disable Take Ownership, and TPM Clear.

Note: The computer will reboot to carry out a pending TPM operation and change TPM state for a TPM device.

Current Status Information

This feature indicates the status of the following TPM items:

TPM Enabled Status

TPM Active Status

TPM Owner Status

Intel TXT (LT) Support

Intel TXT (Trusted Execution Technology) helps protect against software-based attacks to ensure the security, confidentiality, and integrity of all data stored in the system. The options are Enabled and **Disabled**.

▶PCH-FW Configuration

The following information are displayed:

- ME FW Version

- ME Firmware Mode

- ME Firmware Type

- ME Firmware SKU

- PTT Capability/State

▶Firmware Update Configuration

ME FW Image Re-Flash

Select Enabled to re-flash the ME (Management Engine) Firmware. The options are **Disabled** and Enabled.

▶NCT6106D Super IO Configuration

NCT6106D Super IO Chip

▶Serial Port 1~5 Configuration

Select Enabled to enable onboard serial ports. The options are **Enabled** and Disabled.

Device Settings

This feature displays the base I/O port address and the Interrupt Request address of Serial Port 1~5.

Change Port Settings

This option specifies the base I/O port address and the Interrupt Request address of the Serial Port. Select Auto to let the BIOS automatically assign the base I/O and IRQ address.

The options for Serial Port 1 are **Auto**, (IO=3F8h; IRQ=4), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12) and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 2 are **Auto**, (IO=2F8h; IRQ=3), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12) and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 3 are **Auto**, (IO=3E8h; IRQ=5), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12) and (IO=2F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 4 are **Auto**, (IO=2E8h; IRQ=6), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12) and (IO=2F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

The options for Serial Port 5 are **Auto**, (IO=2F0h; IRQ=7), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12), (IO=2E0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12) and (IO=2F0h; IRQ=3, 4, 5, 6, 7, 10, 11, 12).

Transmit Mode (Serial Port 5)

This option changes the transmit mode of Serial Port 5. The options are **RS232 Mode**, RS485 Mode and RS422 Mode.

▶NCT6106D H/W (Hardware) Monitor

PC Health Status

Fan Speed Control Mode

This feature allows the user to decide how the system controls the speeds of the onboard fans. The CPU temperature and the fan speed are correlative. When the CPU on-die temperature increases, the fan speed will also increase for effective system cooling. Select "Full Speed" to allow the onboard fans to run at full speed (of 100% Pulse Width Modulation Duty Cycle) for maximum cooling. This setting is recommended for special system configuration or debugging. Select "Standard" for the onboard fans to run at 50% of the Initial PWM Cycle in order to balance the needs between system cooling and power saving. This setting is recommended for regular systems with normal hardware configurations. The options are Full Speed (@100% of PWM Cycle), and **Standard** (@50% of PWM Cycle).

The following items will be displayed:

- Peripheral Temperature
- System Temperature
- CPU Temperature (PECI)
- PCH Temperature
- Fan 1 Speed ~ Fan 3 Speed
- VCORE

- 12V
- V_DIMM
- 1.05V PCH
- 3.3AVCC
- 3.3VCC
- 3.3VSB

- VBAT

▶Serial Port Console Redirection

COM1~COM5

Use this feature to enable console redirection for COM1~COM5. The options are Enabled and **Disabled**.

▶Console Redirection Settings

Configure the following options for the Console Redirection Settings. The most common settings are set as default:

Terminal Type : Select ANSI, VT100, **VT100+**, or VT-UTF8

Bits per Second (BPS): 9600, 19200, 38400, 57600, or **115200**

Data Bits: **8** or 7

Parity: **None**, Even, Odd, Mark, or Space

Stop Bits: **1** or 2

Flow Control: **None** or Hardware RTS/CTS

VT-UTF8 Combo Key Support: **Enabled** or Disabled

Recorder Mode: **Disabled** or Enabled

Resolution 100x31: Disabled or **Enabled**

Legacy OS Redirection Resolution: **80x24** or 80x25

PuTTY Keypad: **VT100**, Linux, XTermR6, SCO, ESCN, VT400

Redirection After BIOS POST: **Always Enable**, Bootloader

Serial Port for Out-of-Band Management / Windows Emergency Management Services (EMS)

Use this feature to enable console redirection.

EMS Console Redirection

Use this feature to enable console redirection for Serial Port Out-of-Band Management / Windows Emergency Management Services (EMS) ports. The options are Enabled and **Disabled**.

▶**Console Redirection Settings**

Configure the following options for the Console Redirection Settings. The most common settings are set as default:

Out-of-Band Management Port: **COM1**, COM2, COM3, COM4 and COM5.

Terminal Type: Select ANSI, VT100, VT100+, or **VT-UTF8**

Bits per Second (BPS): 9600, 19200, 57600, or **115200**

Flow Control: **None**, Hardware RTS/CTS, Software Xon/Xoff

Data Bits: **8** or 7

Parity: **None**, Even, Odd, Mark, or Space

Stop Bits: **1** or 2

6-4   Event Logs

Smbios Event Log

```
                     Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
       Main    Advanced    Boot   Security    Save & Exit

                                                                      Sets the system boot order

       Set Boot Priority
       1st Boot Device                    [CD/DVD]
       2nd Boot Device                    [Hard Disk]
       3rd Boot Device                    [USB Hard Disk]
       4th Boot Device                    [Removal]
       5th Boot Device                    [Network: IBA GE Slot 00C8 v1410]
       6th Boot Device                    [UEFI: Built-in EFI ]

       ▶ Hard Disk Drive BBS Priorities
       ▶ Netwrok Device BBS Priorities
       ▶ UEFI Boot Drive BBS Priorities                               ←→ :     Select Screen
                                                                      ↑↓  :    Select Item
       ▶ Add New Boot Option                                          Enter:   Select
       ▶ Delete Boot Option                                           +/- :    Change Opt.
                                                                      F1 :     General Help
       ▶ Add New Driver Option                                        F2 :     Previous Values
       ▶ Delete Driver Option                                         F3 :     Optimized Defaults
                                                                      F4 :     Save & Exit
                                                                      ESC :    Exit

                     Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

Change this item to enable or disable all features of the Smbios Event Logging during boot. The options are **Enabled** and Disabled.

Erase Event Log

This option erases all logged events. The options are **No**, Yes, Next reset and Yes, Every reset.

When Log is Full

This option automatically clears the Event Log memory of all messages when it is full. The options are **Do Nothing** and Erase Immediately.

MECI

The Multiple Event Count Increment (MECI) counter counts the number of occurences a duplicate event must happen before the MECI counter is incremented. This is a numeric value.

METW

The Multiple Event Time Window (METW) defines number of minutes must pass between duplicate log events before MECI is incremented. This is in minutes, from 0 to 99.

6-5   Boot Settings

Use this feature to configure Boot Settings:

Set Boot Priority

This option prioritizes the order of bootable devices that the system to boot from. Press [ENTER] on each entry from top to bottom to select devices.

- 1st Boot Device

- 2nd Boot Device

- 3rd Boot Device

- 4th Boot Device

- 5th Boot Device

- 6th Boot Device

▶**Hard Disk Drive BBS Priorities**

- 1st Device

- 2nd Device

▶**UEFI Boot Drive BBS Priorities**

- 1st Boot Device

▶**Add New Boot Option**

This feature allows the user to add a boot device from which the systems will boot after power-on.

Add Boot Option

Enter the name of the new boot option here.

Path for Boot Option

Enter the path of the new boot option here.

Create

Press Enter here to create the new boot option.

▶**Delete Boot Option**

Use this feature to remove a pre-defined boot device from which the system will boot during startup. The settings are [any pre-defined boot device]

▶**Delete Driver Option**

Use this feature to remove a pre-defined driver from which the system will boot during startup. The settings are [any pre-defined boot device]

▶**Add New Driver Option**

This feature allows the user to add a boot device from which the systems boots during startup.

Add Driver Option

Enter the name of the new boot option here.

Path for Driver Option

Enter the path of the new boot option here.

Create

Press Enter here to create the new boot option.

6-6   Security Settings

This menu allows the user to configure the following security settings for the system.

```
              Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
    Main   Advanced   Boot   Security   Save & Exit

  Password Description                                       Set Administrator Password.

  If ONLY the administrator's password is set,
  then this only limits access to Setup and is
  only asked for when entering Setup.
  If ONLY the User's password is set, then this
  is a power on password and must be entered to
  boot or enter Setup.  In Setup the User will
  have Administrator rights.
  The password length must be
  in the following range:
  Minimum length                     3
  Maximum length                     20                      ←→ :    Select Screen
                                                             ↑↓  :    Select Item
    Administrator Password                                   Enter:   Select
                                                             +/- :    Change Opt.
                                                             F1 :     General Help
                                                             F2 :     Previous Values
                                                             F3 :     Optimized Defaults
                                                             F4 :     Save & Exit
                                                             ESC :    Exit

               Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

- If the Administrator password is defined ONLY - this controls access to the BIOS setup ONLY.

- If the User's password is defined ONLY - this password will need to be entered upon each system boot, and will also have Administrator rights in the setup.

- Passwords must be at least 3 and up to 20 characters long.

Administrator Password

Use this feature to set the Administrator Password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

HDD Security Configuration

Use this feature to set the Hard Disk Drive Password which will be required to access the selected hard disk drive. The length of the password should be from 3 characters to 20 characters long. To begin, use the cursor to highlight a detected hard disk and press <Enter>. Press <Enter> again on "Set User Password" to define the hard disk drive password. Save when finished.

6-7   Save & Exit

Select the Exit tab from the BIOS Setup Utility screen to enter the Exit BIOS Setup screen.

```
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
  Main   Advanced   Boot   Security   Save & Exit

  Discard Changes and Exit                           Exit system setup after saving
  Save Changes and Reset                             the changes.

  Save Options
  Save Changes
  Discard Changes

  Restore Optimized Defaults
  Save as User Defaults
  Restore User Defaults
                                                     ←→ :   Select Screen
  Boot Override                                      ↑↓  :   Select Item
  WDC WD2500SY-01SHB1                                Enter:  Select
  UEFI: Built-in EFI Shell                           +/- :   Change Opt.
                                                     F1 :    General Help
                                                     F2 :    Previous Values
                                                     F3 :    Optimized Defaults
                                                     F4 :    Save & Exit
                                                     ESC :   Exit

        Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.
```

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS Setup Utility and reboot the computer for the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

Save Options

Save Changes

When you have completed the system configuration changes, select this option to save all changes made. This will not reset (reboot) the system.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS Utility Program.

Restore Optimized Defaults

To set this feature, select Restore Defaults from the Exit menu and press <Enter>. These are factory settings designed for maximum system performance but not for maximum stability.

Save As User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables the user to save any changes to the BIOS setup for future use.

Restore User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

Boot Override

Listed on this section are other boot options for the system (i.e., Built-in EFI shell). Select an option and press <Enter>. Your system will boot to the selected boot option.

Appendix A

BIOS Error Beep Codes

During the POST (Power-On Self-Test) routines, which are performed at each system boot, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue to boot. The error messages normally appear on the screen.

Fatal errors will not allow the system to continue with the bootup procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list correspond to the number of beeps for the corresponding error.

X10 Serverboard BIOS Error Beep Codes		
Beep Code/LED	**Error Message**	**Description**
1 beep	Refresh	Ready to boot
5 short beeps + 1 long beep	Memory error	No memory detected in the system
5 beeps	No Con-In or No Con-Out devices	Con-In includes USB or PS/2 keyboard, PCI or Serial Console Redirection, IPMI KVM or SOL. Con-Out includes Video Controller, PCI or Serial Console Redirection, IPMI SOL.
1 beep per device	Refresh	1 beep or each USB device detected
X10 IPMI Error Codes		
1 Continuous Beep	System OH	System Overheat

Notes

Appendix B

UEFI BIOS Recovery Instructions

Warning: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you need to update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

B-1   An Overview to the UEFI BIOS

The Unified Extensible Firmware Interface (UEFI) provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism for add-on card initialization to allow the UEFI OS loader, which is stored in the add-on card, to boot the system. The UEFI offers a clean, hands-off control to a computer system at bootup.

B-2   How to Recover the UEFI BIOS Image (-the Main BIOS Block)

A UEFI BIOS flash chip consists of a recovery BIOS block and a main BIOS block (a main BIOS image). The boot block contains critical BIOS codes, including memory detection and recovery codes for the user to flash a new BIOS image if the original main BIOS image is corrupted. When the system power is on, the boot block codes execute first. Once it is completed, the main BIOS code will continue with system initialization and bootup.

Note: Follow the BIOS recovery instructions below for BIOS recovery when the main BIOS boot crashes. However, when the BIOS boot block crashes, you will need to follow the procedures below for BIOS recovery.

B-3   To Recover the Main BIOS Block Using a USB-Attached Device

This feature allows the user to recover a BIOS image using a USB-attached device without additional utilities used. A USB flash device such as a USB Flash Drive, or a USB CD/DVD ROM/RW device can be used for this purpose. However, a USB Hard Disk drive cannot be used for BIOS recovery at this time.

The file system supported by UEFI is FAT (including FAT12, FAT16, and FAT32) installed on a bootable or non-bootable USB-attached device. However, the BIOS might need several minutes to locate the SUPER.ROM file if the media size becomes too large because it contains too many folders and files.

To perform UEFI BIOS recovery using a USB-attached device, follow the instructions below.

1. Using a different machine, copy the "Super.ROM" binary image file into the disc Root "\" Directory of a USB device or a writeable CD/DVD.

    Note: If you cannot locate the "Super.ROM" file in your driver disk, visit our website at www.supermicro.com to download the BIOS image into a USB flash device and rename it "Super.ROM" for BIOS recovery use.

2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and power on the system

3. While powering on the system, please keep pressing <Ctrl> and <Home> simultaneously on your keyboard *until the following screen (or a screen similar to the one below) displays*.

Caution: Please **stop** pressing the <Ctrl> and <Home> keys immediately when you see the screen (or a similar screen) below; otherwise, it will trigger a system reboot.
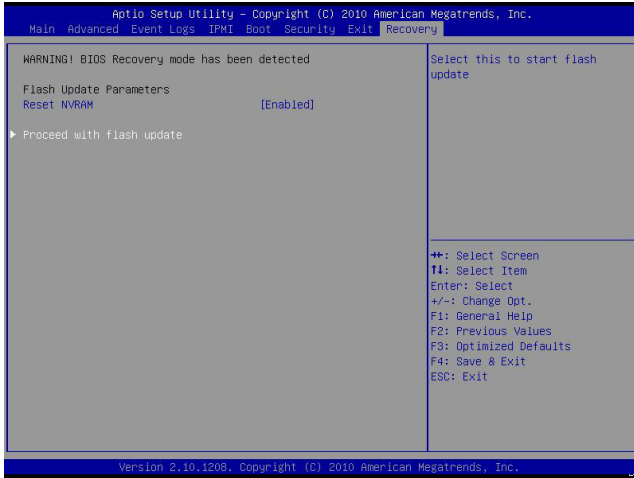

Note: On the other hand, if the following screen displays, please load the "Super.ROM" file to the root folder and connect this folder to the system. (You can do so by inserting a USB device that contains the new "Super.ROM" image to your machine for BIOS recovery.)
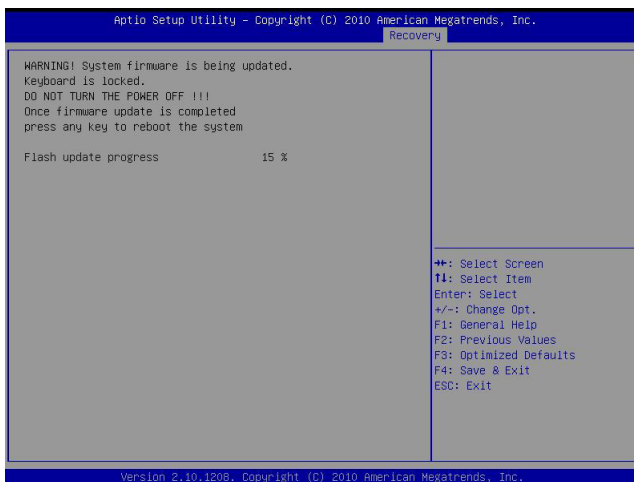
4. After locating the new BIOS binary image, the system will enter the BIOS Recovery menu as shown below.

   Note: At this point, you may decide if you want to start with BIOS recovery. If you decide to proceed with BIOS recovery, follow the procedures below.

```
Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
  Main  Advanced  Event Logs  IPMI  Boot  Security  Exit  Recovery

  WARNING! BIOS Recovery mode has been detected      Select this to start flash
                                                     update
  Flash Update Parameters
  Reset NVRAM                       [Enabled]

▶ Proceed with flash update








                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit


          Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.
```

5. When the screen as shown above displays, using the arrow key, select the item "Proceed with flash update" and press the <Enter> key. You will see the progress of BIOS recovery as shown in the screen below.

   Note: *Do not interrupt* the process of BIOS flashing until it is completed.

```
Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
                                                   Recovery

  WARNING! System firmware is being updated.
  Keyboard is locked.
  DO NOT TURN THE POWER OFF !!!
  Once firmware update is completed
  press any key to reboot the system

  Flash update progress              15 %







                                                     →←: Select Screen
                                                     ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit


          Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.
```

6. After the process of BIOS recovery is completed, press any key to reboot the system.
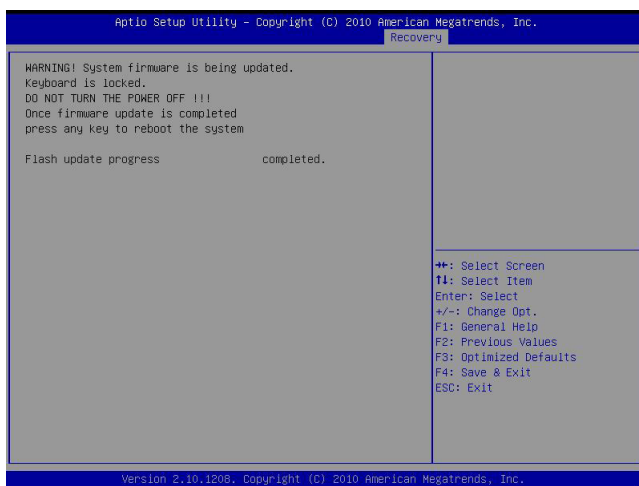
7. Using a different system, extract the BIOS package into a bootable USB flash drive.

8. When a DOS prompt appears, enter FLASH.BAT BIOSname.### at the prompt.

    Note: *Do not interrupt this process* until BIOS flashing is completed.

9. After seeing the message that BIOS update is completed, unplug the AC power cable from the power supply to clear the CMOS, and then plug the AC power cable in the power supply again to power on the system.

10. Press <Del> continuously to enter the BIOS Setup utility.

11. Press <F3> to load default settings.

12. After loading default settings, press <F4> to save the settings and exit the BIOS Setup utility.

Appendix C

System Specifications

Processors

Single Intel Core i7, i5, i3, Pentium/Celeron Series processor in LGA1150 socket

Note: Please refer to our web site for a complete listing of supported processors.

Chipset

Intel Q87 chipset

BIOS

16 MB SPI AMI BIOS SM Flash BIOS

Memory Capacity

Two DIMM slots that can support up to 16GB of Non-ECC DDR3 SODIMM up to 1600MHz

SATA Controller

Two SATA 3.0 (mSATA) and two SATA 2.0 ports supported by the chipset

Drive Bays

Four hot-swap drive bays to house 3.5" hard drives

Expansion Slots

One mini PCIe slot, full and half card with mSATA support

Serverboard

X10SLV-Q (Proprietary form factor)
Dimensions: 17 x 16.8 in (431.8 x 426.7 mm)

Chassis

SC721TQ-250B mini-tower
Dimensions: height 9.45" (240 mm), width 8.27" (210 mm), depth 11" (279.4mm)

System Cooling

One 12-cm fan

System Input Requirements

AC Input: 100-240 VAC, 50-60 Hz
Rated Input Current: 5 Amp

Power Supply

Part# PWS-251-1H, Flex ATX Multi-output, 80 Plus Bronze level

Rated Output Power: 250 W

Rated Output Voltages:

+12V	Max:18 Amp; Min:1 Amp @100V-240V
-12V	Max: 3 Amp; Min: 0 Amp
+5V	Max:14 Amp; Min:0.5 Amp
+3.3V	Max: 12 Amp Min: 0.3Amp
5VSB	Max: 2.5 Amp Min: 0 Amp

Operating Environment

Operating Temperature: 5°C ~ 35°C (41°F ~ 95°F)
Non-Operating Temperature: -40°C ~ 60°C (-40°F ~ 140°F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-Operating Relative Humidity: 5% to 95% (non-condensing)

Regulatory Compliance

Electromagnetic Emissions: FCC Class B, EN 55022 Class B, EN 61000-3-2/-3-3, CISPR 22 Class B

Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)

Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

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"

Notes

(continued from front)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.