Transport VX50

B4985 Series

Service Engineer's Manual

Document ID: D1851-101

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Preface

Copyright

Version 1.01

Disclaimer

Information contained in this document is furnished by TYAN Computer Corporation and has been reviewed for accuracy and reliability prior to printing. TYAN assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TYAN products including liability or warranties relating to fitness for a particular purpose or merchantability. TYAN retains the right to make changes to product descriptions and/or specifications at any time, without notice. In no event will TYAN be held liable for any direct or indirect, incidental or consequential damage, loss of use, loss of data or other malady resulting from errors or inaccuracies of information contained in this document.

Trademark Recognition

All registered and unregistered trademarks and company names contained in this manual are property of their respective owners including, but not limited to the following.

TYAN and Transport VX50-B4985, and Thunder n4250QE are trademarks of TYAN Computer Corporation.

AMD, Opteron, and combinations thereof are trademarks of Advanced Micro Devices Corporation.

Phoenix, PhoenixBIOS are trademarks of Phoenix Technologies.

Microsoft Windows is a trademark of Microsoft Corporation.

IBM, PC, AT, PS/2 are trademarks of IBM Corporation.

Winbond is a trademark of Winbond Electronics Corporation.

Portable Document Format (PDF) is a trademark of Adobe Corporation.

Federal Communications Commission

Notice for the USA Compliance Information Statement (Declaration of Conformity Procedure) DoC FCC Part 15: This device complies with part 15 of the FCC Rules

Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'ineteference radio.)

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Transport VX50-B4985. This manual consists of the following sections:

Chapter 1: Provides an Introduction to the VX50-B4985 barebone, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter 2: Covers procedures on installing the CPU, memory modules, PCI cards and hard drives.

Chapter 3: Covers removal and replacement procedures for pre-installed components.

Appendix: Describes the differences between mainboard BIOS and system BIOS. The cable connection tables are also provided for reference of system setup.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the motherboard manual.

Safety Information

Before installing and using the Transport VX50-B4985, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots or openings on the unit which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the power company.
- The unit uses a three-wire grounded cable, which is supplied with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this type of plug, contact an electrician to replace the obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be stepped on.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been carried out, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

Table of Contents

Chapter 1: Overview

1.1 About the TYAN Transport VX50-B4985 1
1.2 Product Models 1
1.3 Features 3
1.4 Unpacking 5
1.4.1 Box Contents 5
1.4.2 Accessories 7
1.5 About the Product 9
1.5.1 System Front View 9
1.5.2 System Rear View 10
1.5.3 LED Definitions 11
1.5.4 Rear I/O LED 11
1.5.5 Motherboard (S4985) Layout 12
1.5.6 S4985 Jumpers & Connectors 13
1.5.7 S4985 Block Diagram 14
1.5.8 CPU Board (M4985) Layout 15
1.5.9 M4985 Jumpers & Connectors 15
1.5.10 M4985 Block Diagram 16
1.5.11 System Internal View 17

Chapter 2: Setting Up

2.1 Before You Begin 19
2.1.1 Work Area 19
2.1.2 Tools 19
2.1.3 Precautions 20
2.2 Installing Motherboard Components 21
2.2.1 Removing the Chassis Cover 21
2.2.2 Installing the CPU and Heatsink 22
2.2.3 Installing the Memory 26
2.2.4 Installing the M4985 CPU Expansion Board 28
2.2.5 Installing PCI-E/PCI Cards 32
2.3 Installing Hard Drives 34
2.3.1 Installing a Storage Backplane 34
2.3.2 Installing SAS/SATA Hot Swap Drives 36
2.3.3 Installing Internal Hard Drives 38
2.4 Rack Mounting 40
2.4.1 Installing the Server in a Rack 40
2.5 Standalone 45
2.6 Fitting the Front Bezel Door 46
2.6.1 Opening the Front Bezel Door 47

Chapter 3: Replacing Pre-installed Components

3.1 Introduction 49
3.1.1 Work Area 49
3.1.2 Tools 49
3.1.3 Precautions 50
3.2 Removing the Chassis Cover 51
3.3 Replacing Motherboard Components 52
3.3.1 Disconnecting All Motherboard Cables 52
3.3.2 Replacing the Motherboard 53
3.4 Replacing the DVD-ROM 54
3.5 Replacing the Floppy Disk Drive 56
3.6 Replacing the SAS/SATA Backplane 58
3.6.1 SAS/SATA Backplane (M1209-P) Features 60
3.6.2 SAS/SATA Backplane (M1209-P) Header Pin Definition 61
3.7 Replacing the Redundant Power Supply 62
3.8 Replacing the System Fans 63

1.1 About the TYAN Transport VX50-B4985

Congratulations on your purchase of the TYAN Transport™ VX50-B4985, standalone or rack-mountable barebone system. This product supports up to eight AMD® Opteron™ 8000 series 1207-pin processors and 128 GB of registered DRAM, offering exceptional computing power and simultaneous support of 32-bit and 64-bit applications.

Hot swap SATA or SAS hard disk drives provide convenient and resilient data storage capacity, and on-board Gigabit Ethernet ports ensure high-speed data communication.

1.2 Product Models

Model	Supported HDD type & quantity	Hot swappable	Power Supply
B4985V50V4H-4P	SAS/SATAII (4)	Yes	1140W (2+1 redundant with 1 dummy module)
B4985V50V8H-8P	SAS/SATAII (8)	Yes	1620W (3+1 redundant)

B4985V50V4H-4P

B4985V50V8H-8P

WARNING:	This product is very heavy and should not be lifted by a single person. When installing this product in a rack, we recommend that at least two people lift the server while a third person guides it into place and tightens the fixings. Always use a suitable trolley or cart to transport the device.

1.3 Features

Enclosure
- 5U Convertible Pedestal/rack-mountable chassis
- Storage:
  -(3) 5.25” device bays (Pre-installed one standard DVD-ROM)
  -(1) Slim optical drive bay
  -(1) Standard FDD (Pre-installed)
  -(4) Hot swap SAS/SATA HDD bays
  -(4) Internal HDD bays (upgradable to hot swap bays)
- Dimensions:
  -D 26.8 x W 16.7 x H 8.7 inch
  -D 680 x W 425 x H 220 mm

Processors
- Supports four AMD® Opteron™ (2.0~2.8GHz) Socket F (1207) 8000 series processors

Chipset
- NVIDIA nForce Professional 2200 (CK804pro)
- NVIDIA nForce Professional 2050 (IO4)
- Winbond W83627HF Super I/O
- ADT7476 Hardware Monitoring IC

Memory
- Sixteen (16) DDR2 DIMM sockets on S4985
- Sixteen (16) DDR2 DIMM sockets on M4985
- Supports up to 128GB of Registered, ECC DDR2 667/533/400 four ranks memory module

Expansion Slots
- Two (2) x16 PCI Express slots with x16 signal
- Two (2) x16 PCI Express slots with x4 signal
- One (1) 32-bit 33MHz PCI v2.3 slot

Back I/O Ports
- One (1) Keyboard & One (1) PS/2 Mouse ports
- Three (3) RJ45 10/100/1000 Base-T port with activity LED
- Two (2) USB 2.0 ports
- One (1) 9-pin UART Serial port
- One (1) 15-pin VGA port

Front Panel Features
- I/O
  -(2) USB 2.0 ports
- LED indicators
  -Power LED
  -(2) LAN LED
  -HDD Active LED
  -ID LED
- Switches
  -Power, Reset, and ID switches

Onboard Storage Controller
- Four (4) integrated dual port SATA controllers (two from CK804pro and two from IO4)
- Supports up to eight (8) SATA drives
- Supports 3.0Gb/s per port, 1.5Gb/s per direction per channel
- Supports RAID 0, 1, 0+1, 5

Networking
- Three (3) Gigabit Ethernet ports
  -Two (2) Marvell 88E1111 GbE
  -One (1) Intel 82541PI GbE

Video
- XGI-GX20 PCI graphics controller
- 16MB DDR memory
- Resolution Max 1280x1024

Motherboard
- TYAN Thunder n4250QE S4985
- SSI EEB 3.5 footprint (13 x 16-inch)

CPU Board (8 way)
- TYAN M4985 (13” x 12”)

BIOS
- Phoenix 8Mbit LPC Flash ROM
- Serial Console Redirect
- USB device boot
- 48-bit LBA support
- ACPI 2.0 power management support
- Power management: S0, S1, S4, and S5

Server Management
- Automatic fan speed control
- Supports TYAN Server Management (TSM)
- TYAN SMDC, IPMI v2.0 compliant remote server management kit (Option)

Power Supply

- 1140W to 1620W, optional redundant module
- 1140W for 4P (2+1 redundant with 1 Dummy module)
- 1620W for 8P (3+1 redundant)

System Cooling

- Three (3)120x120x38mm cooling fans
- Four (4) active CPU coolers for S4985
- Four (4) active CPU coolers for M4985

Regulatory

- FCC Class B (Declaration of Conformity)
- CE (Declaration of Conformity)

Environment

- Operating: 5ºC~35ºC
- Non-Operating: -40ºC~70ºC

1.4 Unpacking

This section describes the VX50-B4985 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged.

1.4.1 Box Contents

Component	Description
 	B4985V50V4H-4P: Industry standard 5U chassis, (4) swappable HDD bays B4985V50V8H-8P: Industry standard 5U chassis, (8) swappable HDD bays
	Tyan Thunder n4250QE S4985G3NR motherboard (pre-installed)
	M4985 CPU board
	Standard DVD-ROM drive (pre-installed)
	Standard FDD drive (pre-installed)

Component	Description
	M1209-P SAS/SATAII backplane (pre-installed)
	2+1 redundant with 1 Dummy module / Total 1140W (for B4985V50V4H-4P) 3+1 redundant / Total 1620W (for B4985V50V8H-8P)
	(3) System cooling fans (pre-installed) 120 x 120 x 38 mm

1.4.2 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service: http://www.tyan.com.

The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.

TYAN Driver CD

B4985V50V4H-4P:
4 x CPU Heatsinks with Fans
B4985V50V8H-8P:
8 x CPU Heatsinks with Fans

B4985V50V4H-4P:
Power Cord:
Europe x 3pcs
US x 3pcs

B4985V50V8H-8P:
Power Cord:
Europe x 4pcs
US x 4pcs

CD-ROM Flat Cable, 40-pin

Barebone Manual & Mainboard Manual

2 x Serial ATA Power Cables

Front Bezel Kit

Bezel Door
with Keylock

Mounting Ears x 2

4 x Chassis Foot
Stands

Keys

Screws kit

HDD Rails Kit

Rail Kit

Mounting Bracket x 4

Sliding Brackets x 4

Screws Kit

Rail assembly

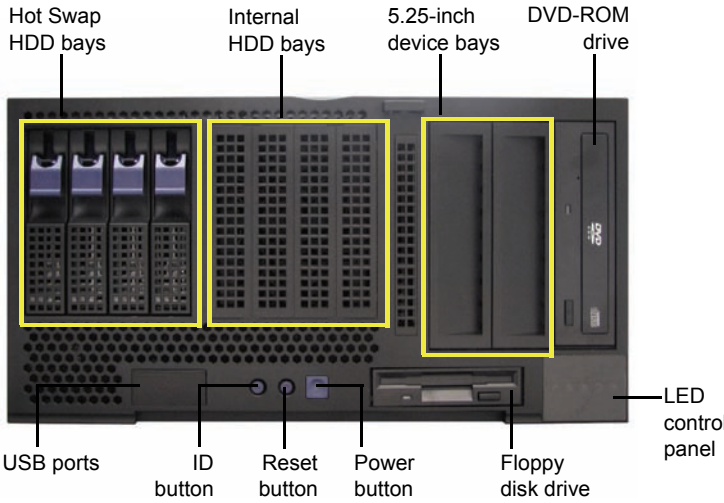
1.5 About the Product

This section contains hardware diagrams and a block diagram of the VX50-B4985 system.

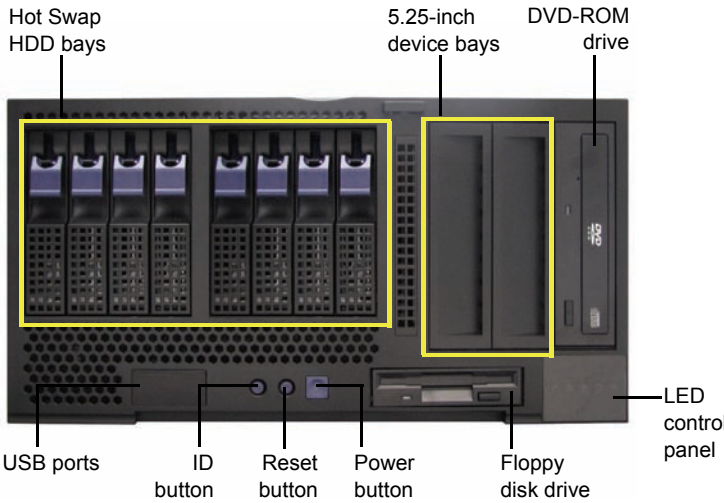
1.5.1 System Front View

See the diagram below for details of the front panel indicators and switches.

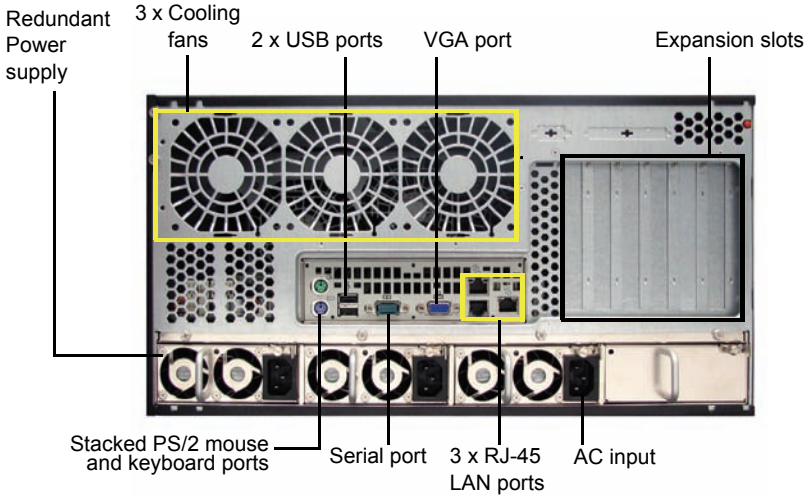
B4985V50V4H-4P



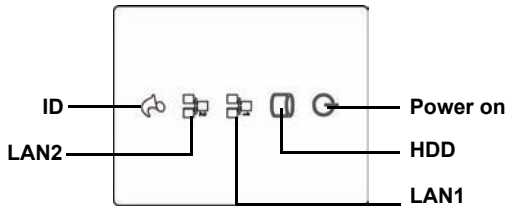
B4985V50V8H-8P



1.5.2 System Rear View



1.5.3 LED Definitions

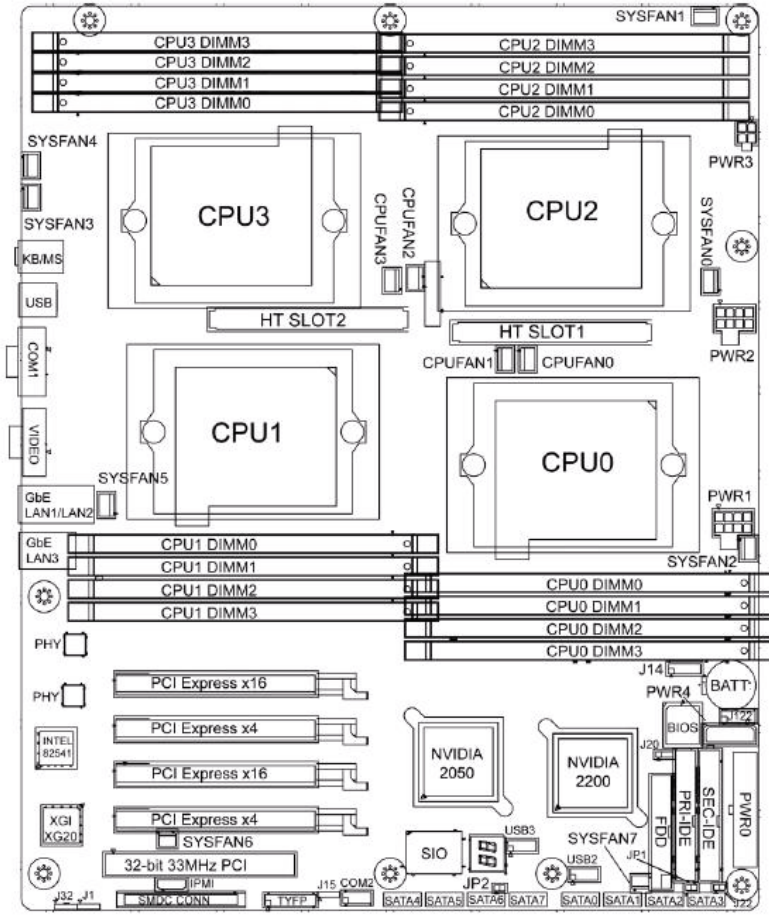


LED	Status	Color	Description
Power LED	On	Green	System is turned on
	On	Amber	System is turned off
	Off	Off	Power off
HDD LED	On	Amber	HDD access
	Off	Off	No disk activity
LAN LED	Blinking	Green	LAN is active
	Off	Off	No LAN linked
ID LED	On	Blue	ID select on

1.5.4 Rear I/O LED

LED	Status	Color	Description
RJ45 Linkage / Activity (Left)	On	Green	10Mb/100Mb/1000Mb linked
	Blinking	Green	10Mb/100Mb/1000Mb activity
	Off	Off	No LAN linked
RJ45 Linkage / Activity (Right)	On	Amber	1000Mb linked/activity
	On	Green	100Mb linked/activity
	Off	Off	10Mb mode or No LAN linked
ID LED	On	Blue	ID select on
Power supply module	On	Green	Power on
	Off	Off	Power off / fail

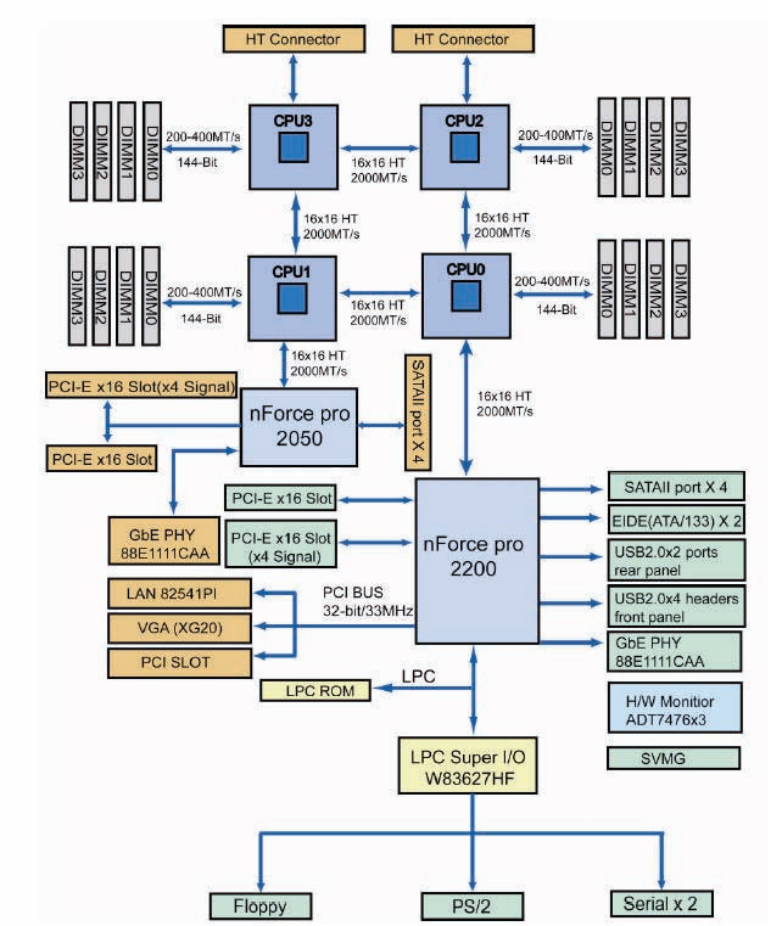
1.5.5 Motherboard (S4985) Layout



1.5.6 S4985 Jumpers & Connectors

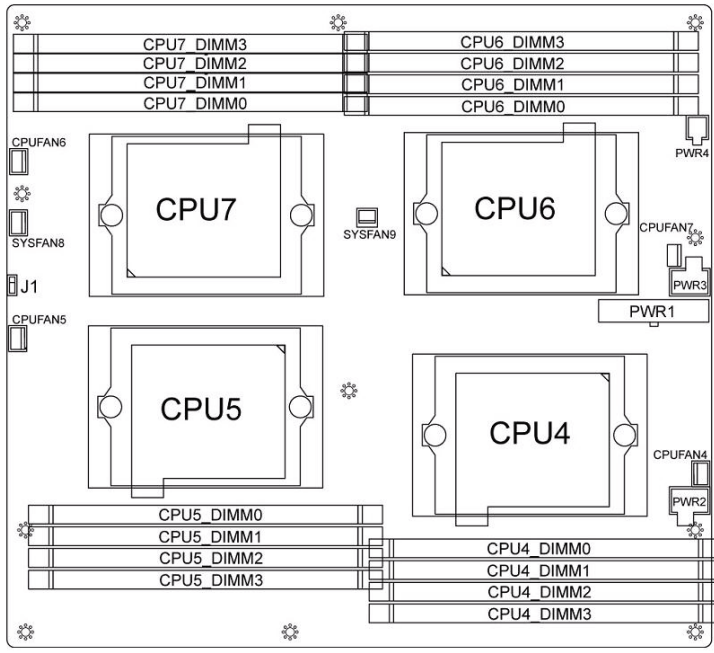
Jumper/Connector	Function
J1	SMBUS Connector
J14	Fan Connector (for barebone use only)
J20	Clear CMOS Jumper - Pin 2-3 closed: Normal (Default) - Pin 1-2 closed: Clear
J22	NMI Header
J30/J95	USB Front Panel Connector J30: USB2 J95: USB3
J101	COM2 Header
J115	Front Panel Header
JP1	RI Header
JP2	Intruder Header
CPUFAN0/1/2/3	CPU Fan Connectors
SYSFAN0/1/2/3/4/5/6/7	Chassis Fan Connectors
SATA0/1/2/3/4/5/6/7	Serial ATA RAID Connectors

1.5.7 S4985 Block Diagram



Thunder n4250QE S4985G3NR Block Diagram

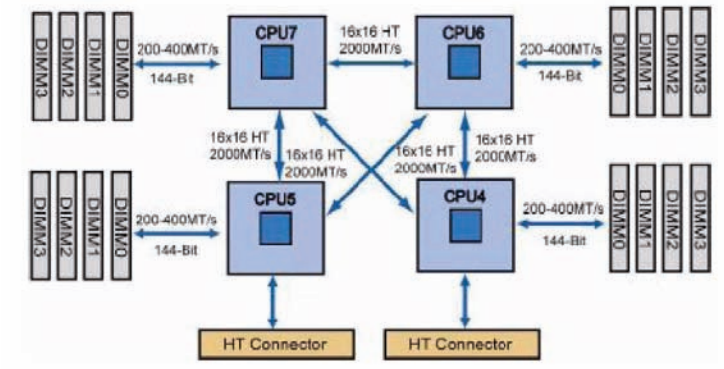
1.5.8 CPU Board (M4985) Layout



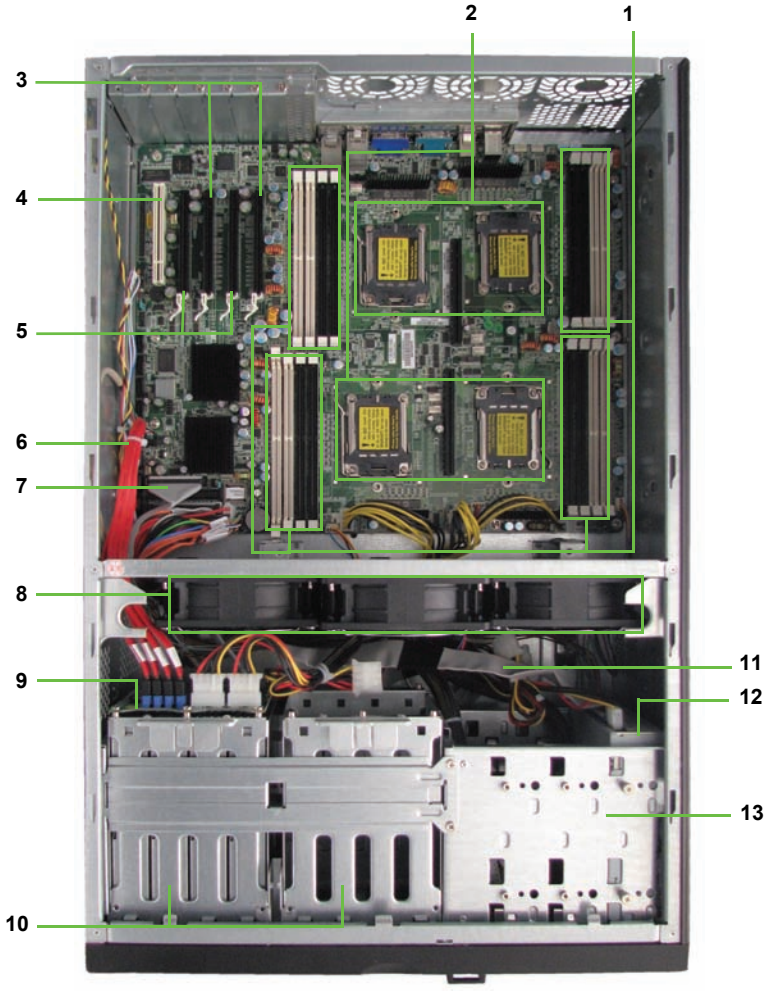
1.5.9 M4985 Jumpers & Connectors

Jumper/Connector	Function
J1	Power Switch
CPUFAN4/5/6/7	CPU Fan Connectors
PWR1/2/3/4	Power Connectors
SYSFAN8/9	System Fan Connectors

1.5.10 M4985 Block Diagram



1.5.11 System Internal View



1. Memory slots
2. CPU sockets
3. PCI-E x16 slots
4. PCI slot
5. PCI-E x4 slots
6. SAS/SATA cables
7. FDD cable
8. System fans
9. SAS/SATA backplane
10. Hard disk drive cradles
11. DVD-ROM cable
12. DVD-ROM drive
13. Cradle for 5.25-inch devices

Chapter 2: Setting Up

2.1 Before You Begin

This chapter explains how to install motherboard components including CPUs, CPU heatsinks, memory modules, CPU expansion board, and hard drives. Instructions on inserting a PCI card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.1.2 Tools

The following tools will be required to complete the installations described in this chapter.

- A cross head (Phillips) screwdriver
- A grounding strap and/or an anti static pad

Most of the electrical and mechanical connectors in your system can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.1.3 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport VX50-B4985 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.2 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPUs, memory modules and PCI cards.

2.2.1 Removing the Chassis Cover

Follow these instructions to remove the Transport VX50-B4985 chassis cover. This step is required before any other procedures in this chapter can be undertaken.

1. Press the two purple buttons on the retaining clips and lift them up. The cover slides back slightly.

2. Lift the cover free from the chassis.

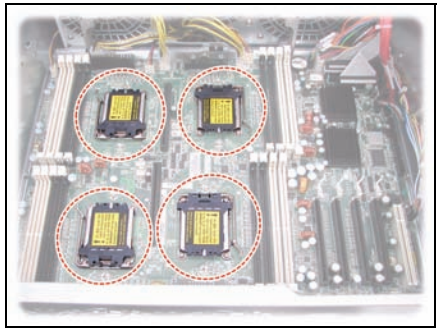
Follow the steps above in reverse to refit the chassis cover.

2.2.2 Installing the CPU and Heatsink

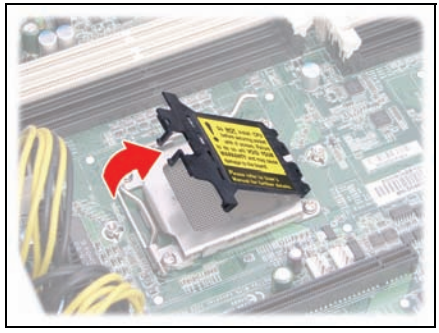
Follow these instruction to install the CPU and CPU heatsink.

NOTE: The system supports up to four CPUs. CPU0 must be installed first followed by CPU1, CPU2, and CPU3.

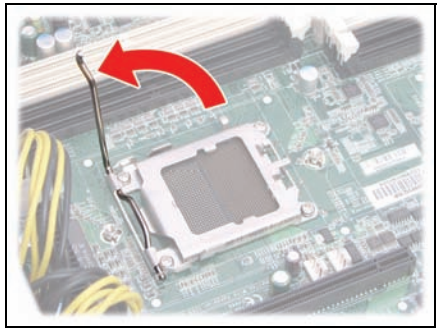
1. Locate the four CPU sockets on the motherboard.



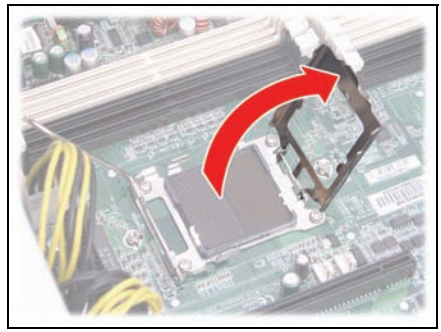
2. Take off the CPU protection cap.



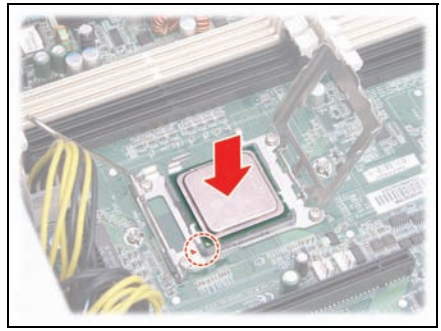
3. Lift up the CPU lever to unlock the socket.



4. Open the socket in the direction as illustrated.

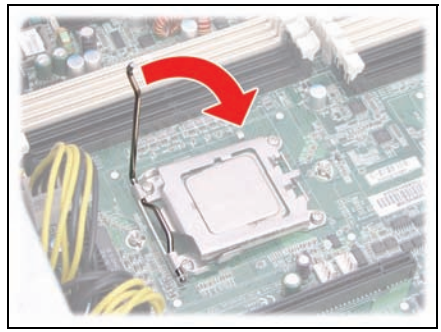


5. Place the CPU in the socket, ensuring that pin 1 is correctly located.

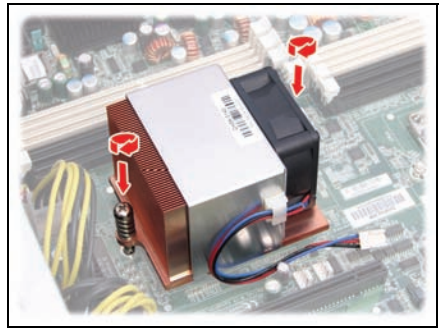


NOTE: The CPU will only fit in the socket one way. No force should be required to insert the CPU.

6. Close the socket cover and press the CPU lever down in the direction shown to secure the CPU.

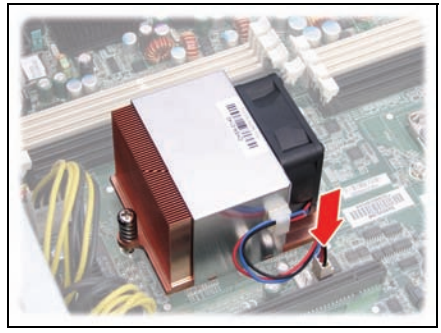


7. Place the fan and heatsink on top of the CPU and attach with two screws as shown.



NOTE: All heatsinks must be installed with fans facing the rear of the chassis to ensure efficient cooling.

8. Attach the fan power cable to the CPU fan pin header on the motherboard as shown.



9. Repeat these steps when installing the other CPUs.

NOTE: About the CPU FAN connect with MB ,please refer to following table:

Heatsink Coller Fan to Mother board

Heatsink Cooler Fan	Connects to	Motherboard
CPU FAN1	→	CPUFAN0 connector
CPU FAN2	→	SYSFAN5 connector
CPU FAN3	→	CPUFAN2 connector
CPU FAN4	→	SYSFAN4 connector

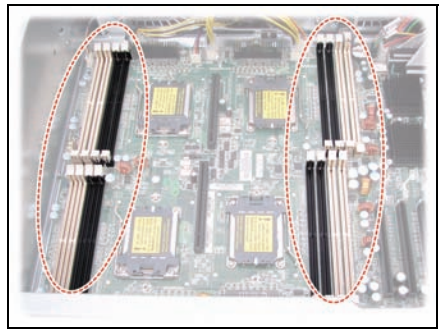
Heatsink Coller Fan to CPU Board

Heatsink Cooler Fan	Connects to	CPU Board
CPU FAN5	→	CPUFAN4 connector
CPU FAN6	→	CPUFAN5 connector
CPU FAN7	→	CPUFAN7 connector
CPU FAN8	→	CPUFAN6 connector

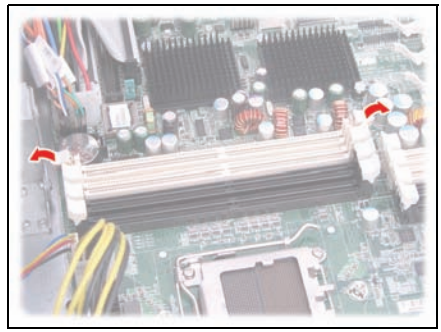
2.2.3 Installing the Memory

Follow the instructions in this section to install memory modules in your VX50 system.

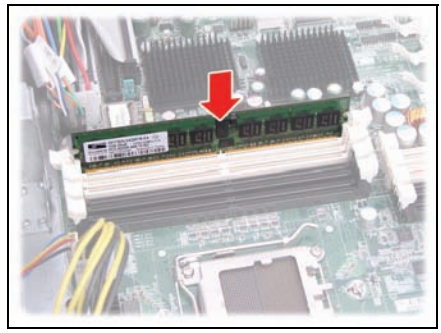
1. Locate the memory slots on the motherboard.



2. Press the memory slot locking levers in the direction of the arrows as shown below.



3. Align the memory module with the slot. The module has indentations that align with notches in the slots.
4. Insert the memory module into the slot as shown.



When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.

NOTE: Each bank memory of sockets is associated with one CPU. Memory will be recognized only when installed in a socket associated with an installed CPU.

Attention When Installing the Memory!

Refer to the following table for supported DDR2 populations.

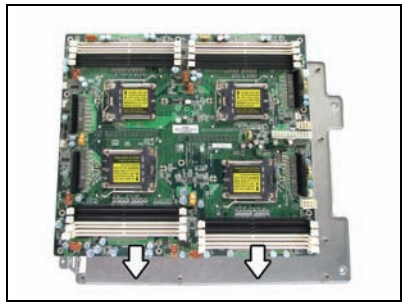
CPU / DIMM	Single (CPU0 only)		Dual (CPU 0 and CPU1)		Four (CPU0, CPU1, CPU2, and CPU3)	
CPU0DIMM0		X		X		X
CPU0DIMM1		X		X		X
CPU0DIMM2	X	X	X	X	X	X
CPU0DIMM3	X	X	X	X	X	X
CPU1DIMM0				X		X
CPU1DIMM1				X		X
CPU1DIMM2			X	X	X	X
CPU1DIMM3			X	X	X	X
CPU2DIMM0						X
CPU2DIMM1						X
CPU2DIMM2					X	X
CPU2DIMM3					X	X
CPU3DIMM0						X
CPU3DIMM1						X
CPU3DIMM2					X	X
CPU3DIMM3					X	X

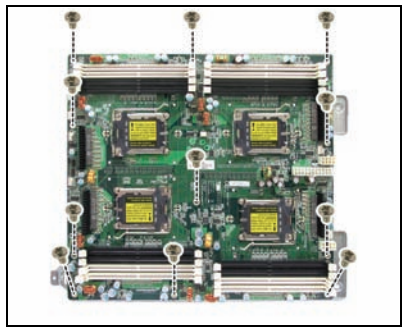
NOTE:
1. X indicates a populated DIMM slot.
2. Always install memory DIMMs in pairs starting from the CPU0_DIMM2 and CPU0_DIMM3. You can choose to install single, dual or four memory modules.

2.2.4 Installing the M4985 CPU Expansion Board

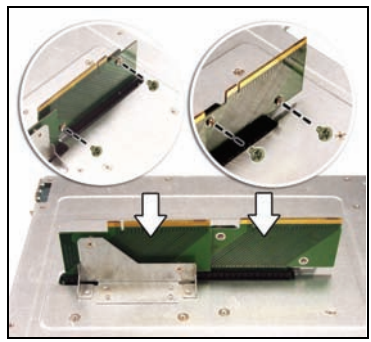
The CPU expansion board can accommodate a further four processors and 16 memory DIMMs. For B4985V50V4H-4P unit, when upgrading to eight CPU with a CPU expansion board, a further power supply module must be installed.

1. Take out the CPU plate with the mylar attached. Screw the M4985 mainboard to the CPU plate using eleven screws.

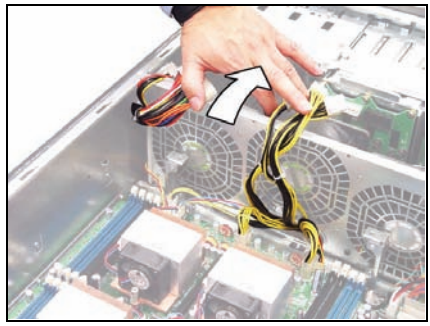


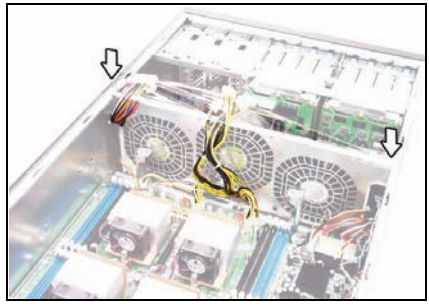


2. Turn the CPU plate over and insert the two M4881 HT cards into the slots. Secure the cards to the plate with screws.

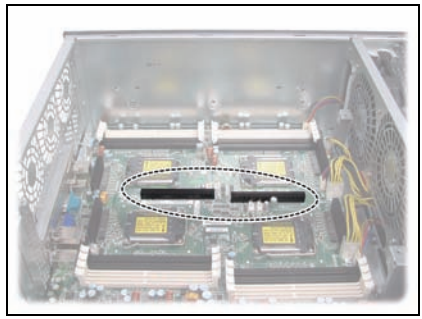


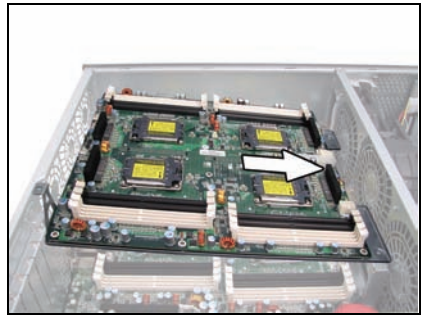
3. Use scotch tape to hold power cords and cables still.

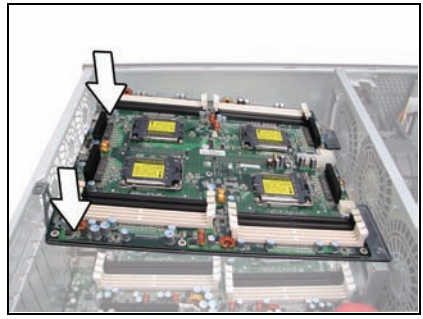




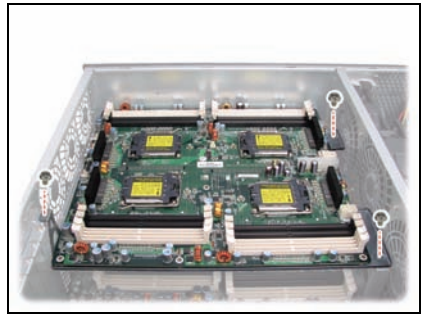
4. Locate the HT slots on the S4985 motherboard. Put the CPU plate with the M4881 HT cards facing down into the chassis. Make sure to insert the M4881 HT cards into the HT slots completely.



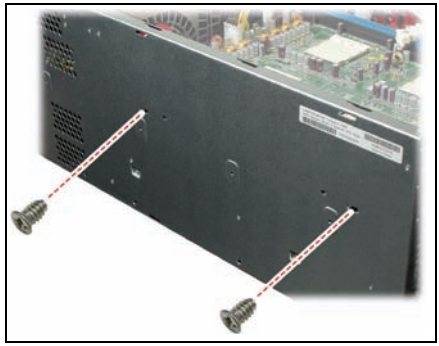




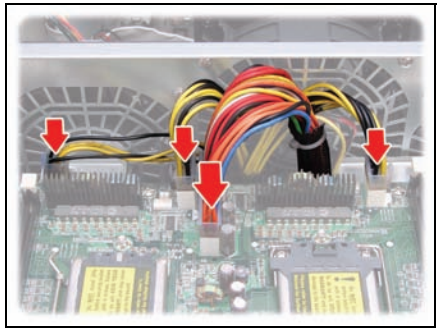
5. Secure the CPU board with the plate in place with three screws as shown.



6. Insert two further countersunk screws to secure the expansion board to the chassis as shown.



7. Connect the four power cables as shown.



2.2.5 Installing PCI-E/PCI Cards

The VX50-B4985 has five PCI card slots:

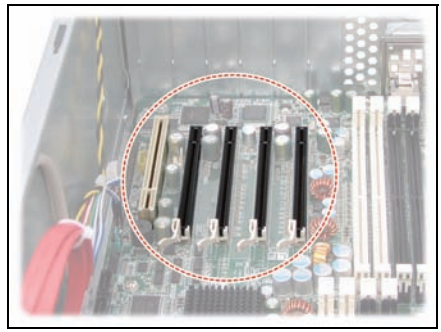
2 x PCI-E x16 slots

2 x PCI-E x4 slots

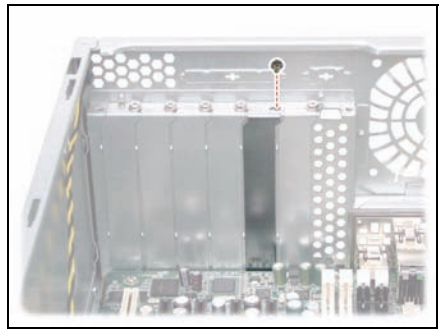
1 x PCI slot

Follow these instructions to install any of the above kinds of PCI cards.

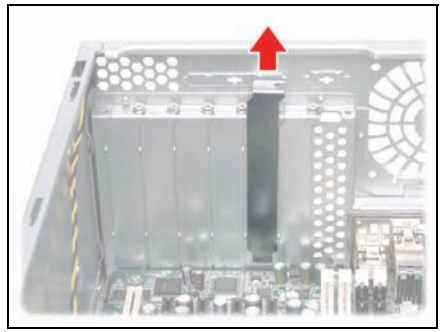
1. Locate the PCI-E/PCI card slots on the motherboard. See “System Internal View” on page 17 for the PCI-E/PCI slot locations.



2. Unscrew the blanking plate from the slot you want to use.



3. Lift up the blanking plate.



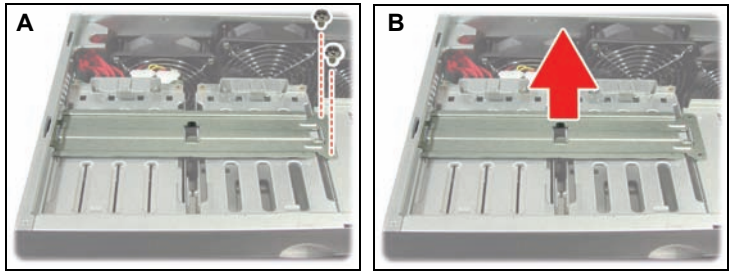
4. Insert a PCI-E/PCI card into the appropriate slot, making sure it is firmly seated. Secure it with the screw removed in step 2.

2.3 Installing Hard Drives

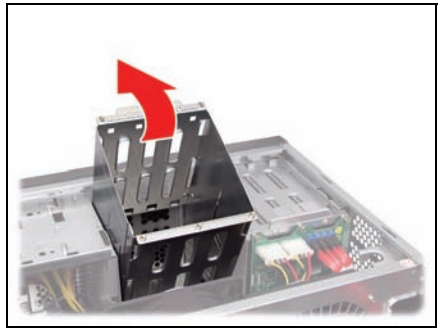
The VX50-B4985 supports up to eight hot-swappable SAS or SATA hard drives when two backplanes are installed. When the unit is B4985V50V4H-4P, with four hot-swap bays and one SATA backplane, follow the instructions below to install a further four hot-swap bays and a second SAS or SATA backplane.

2.3.1 Installing a Storage Backplane

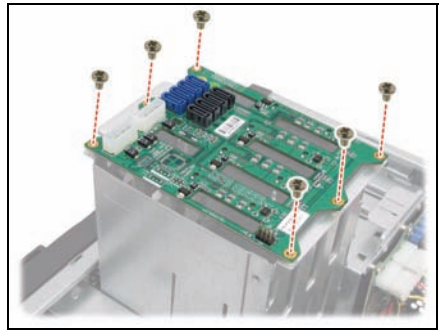
1. Release the two screws holding the cradle locking bar in place (**A**) and remove the bar (**B**).



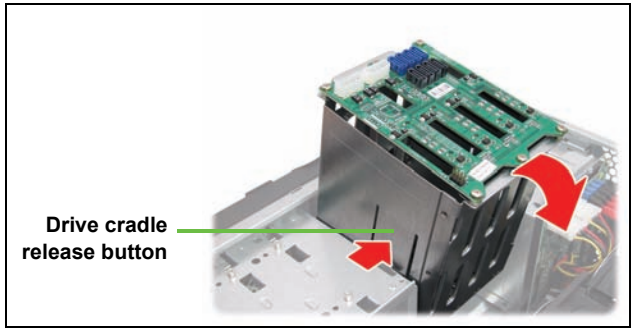
2. Lift the drive cradle to the vertical position as shown.



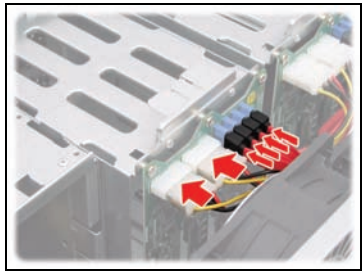
3. Fix the storage backplane to the drive cradle using six screws.

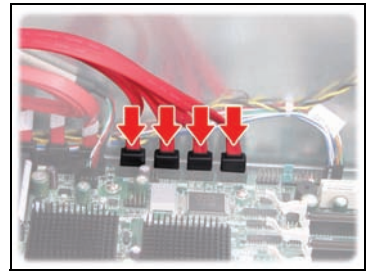


4. Press the drive cradle release button and lower the drive housing back into place.



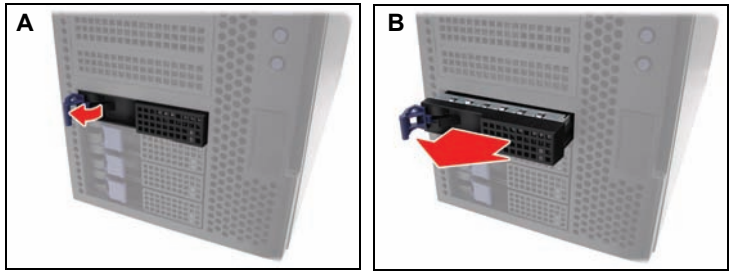
5. Connect power and data cables.





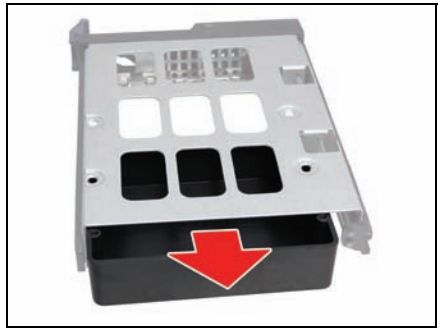
2.3.2 Installing SAS/SATA Hot Swap Drives

1. Pull out the locking lever (**A**) and pull the tray out of the chassis (**B**).



2. Remove the four screws holding the plastic spacer in the tray.

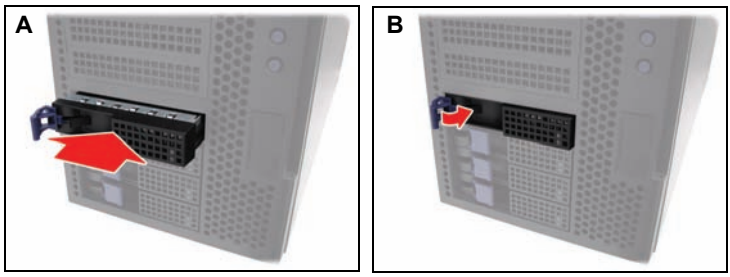
3. Remove the spacer from the tray



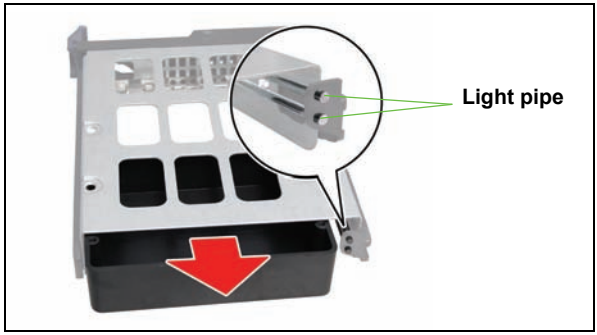
4. Place a SAS/SATA hard drive in the drive tray.

5. Secure the hard drive in place using four HDD screws.

6. Slide the drive tray back into the chassis and press the locking lever into place.



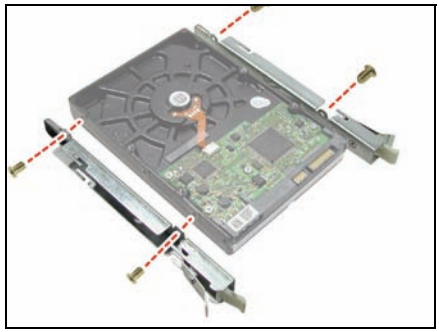
NOTE: The VX50-B4985 (B4985V50V4H-4P) is shipped with a single SATA backplane and cables pre-installed.



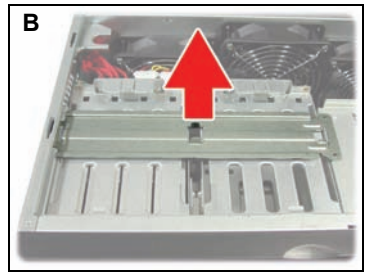
NOTE: Be careful not to damage the delicate light pipe when handling the HDD trays.

2.3.3 Installing Internal Hard Drives

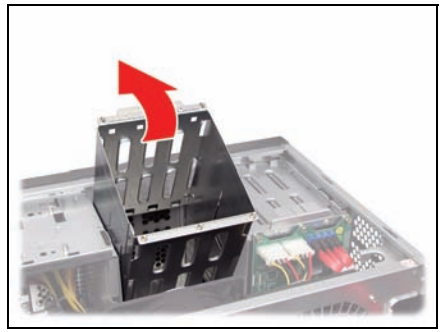
1. Attach the supplied HDD rails to the both sides of a hard disk. Ensure that the locking clip faces the rear of the drive. Use two screws for each rail.



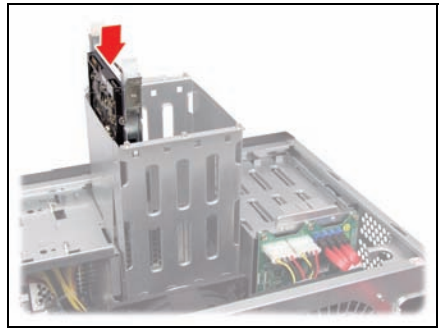
2. Release the two screws holding the cradle locking bar in place (**A**) and remove the bar (**B**).



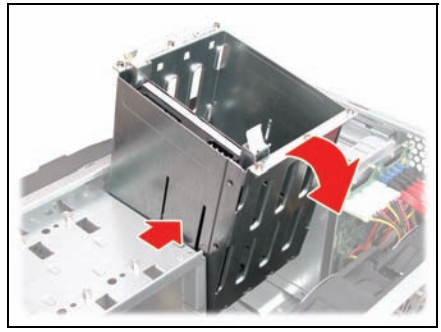
3. Lift the drive housing to the vertical position as shown.



4. Slide the hard disk installed with the rails into place until it locks.



5. Press the drive housing release button and lower the drive housing back into place.



6. Connect power and data cables to the hard drive.

2.4 Rack Mounting

After installing the necessary components, the Transport VX50-B4985 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Sliding Brackets x 4

Mounting Ears x 2

Screws Kit x 1

Mounting Brackets x 4

2.4.1 Installing the Server in a Rack

Follow these instructions to mount the VX50-B4985 into an industry standard 19" rack.

NOTE: Before mounting the Transport VX50-B4985 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Installing the Inner Rails to the Unit

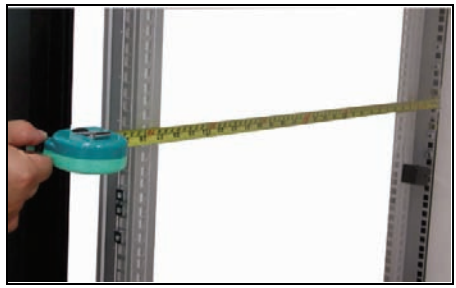
1. Remove the black panels from the left and right sides of server to reveal the rail mounting screwholes beneath.

2. Screw the mounting ears to each side of the Transport VX50-B4985 as shown using two screws from the supplied screws kit.

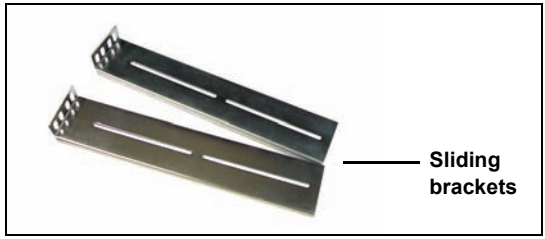
3. Draw out the inner rails from each rail assembly. Install the inner sliding rails to each side of the server using five screws.

Installing the Outer Rails to the Rack

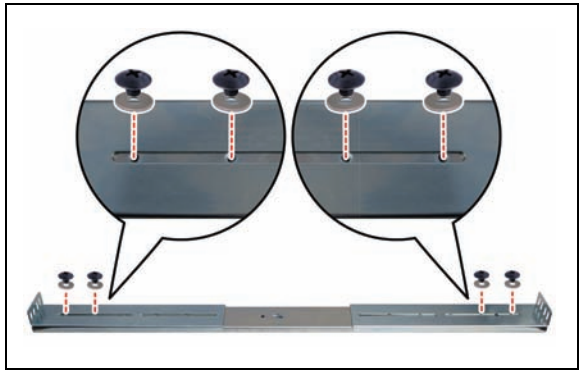
4. Measure the distance between inner side of the front and rear mounting brackets in the rack.



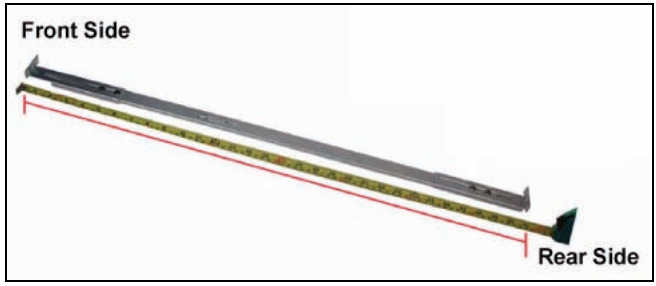
5. Locate the sliding brackets.



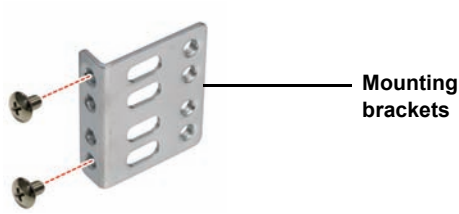
6. Secure the sliding brackets to the outer rails as shown, using the M4-4L (C) screws from the supplied screws kit.



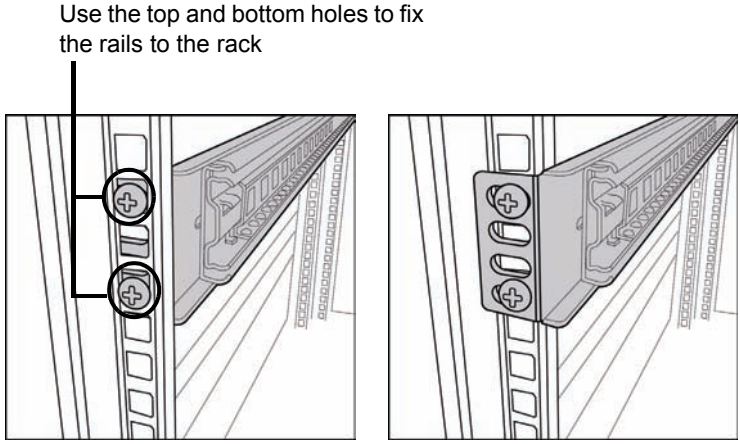
7. Adjust the outer rails to fit the length of the rack (the distance measured in step 4).



8. Secure the assembled rail sets to the rack using two mounting brackets and four M5L8-H3 screws for each side. Use the top and bottom holes to fix the brackets to the rack frame.

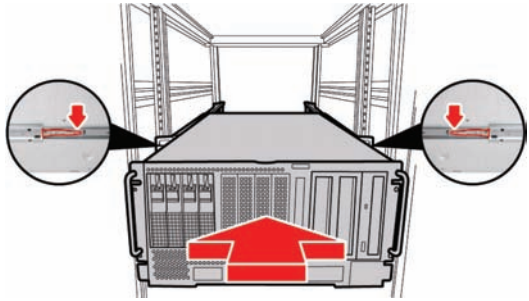


9. Fit the rails behind the rack frame. The mounting brackets should be against the rails as shown. Secure the mounting brackets from inside, not outside, of the rack.

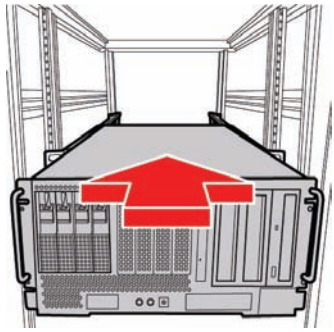


Rackmounting the Server

10. Lift the server and slide it between the rails mounted in the rack.



11. Bolt the mounting ears to the rack using M5L15-H3 screws to secure the server in place.



Notes:

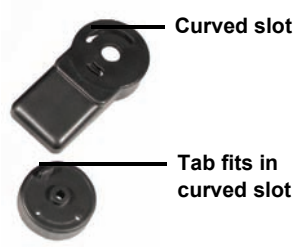
- When the rails are extended, they will lock. To shorten the rails again, you will need to operate the release mechanism in each rail.
- To avoid injury, it is strongly recommended that two people lift the VX50-B4985 into the place while a third person screws it to the rack.

2.5 Standalone

The Transport VX50-B4985 can be used as a standalone device when fitted with the supplied plastic feet. When used as a standalone device, the feet must be fitted to prevent the unit from falling over.

The four feet should be attached as follows:

1. Each foot consists of two pieces. Insert the round piece of the foot into the larger foot section. The small plastic tab on the round piece should fit into the curved slot on the other piece.



2. Use a single screw through the center of the round section to fasten the foot assembly to the bottom of the chassis. The plastic tab that protrudes through the curved slot should fit into an indent in the chassis case. When fitted, each foot should rotate about 90°.

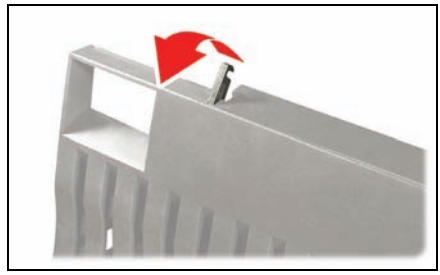
3. Fit all four feet in the same way.

NOTE: When using as a standalone unit, all four feet should be fitted and extended fully to prevent instability.

2.6 Fitting the Front Bezel Door

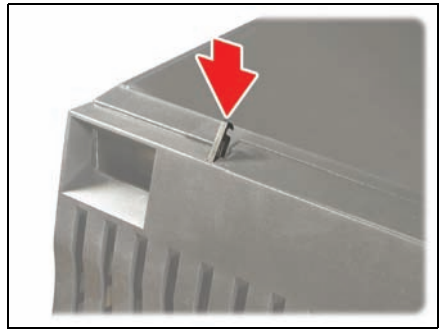
A door is supplied with the Transport VX50-B4985 that can be used when the unit is rack mounted or standalone. Follow these instructions to attach the door.

1. Release the hinge clip from the top of the hinge section on the door



2. Insert the top hinge pin into the hole in the server casing. Align the lower hinge pin with the hole in the casing and lower the door into place.

3. Replace the hinge clip on the top hinge pin.



2.6.1 Opening the Front Bezel Door

1. Insert the front door key (packed in the screws kit in the accessory box) and rotate the key 90 degrees clockwise to unlock the door.

2. Pull the door in the direction of the arrow to open.

Chapter 3: Replacing Pre-installed Components

3.1 Introduction

This chapter explains how to replace all the pre-installed components including the motherboard, DVD-ROM drive, Floppy Disk Drive, SAS/SATA backplane, power supply, and system fans.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport VX50-B4985 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Removing the Chassis Cover

Follow these instructions to remove the Transport VX50-B4985 chassis cover. This step is required before any other procedures in this chapter can be undertaken.

To remove the rear cover and expose motherboard components:

1. Press the two purple buttons on the retaining clips and lift them up. The cover slides back slightly.

2. Lift the cover free from the chassis.

Follow the steps above in reverse to refit the chassis cover.

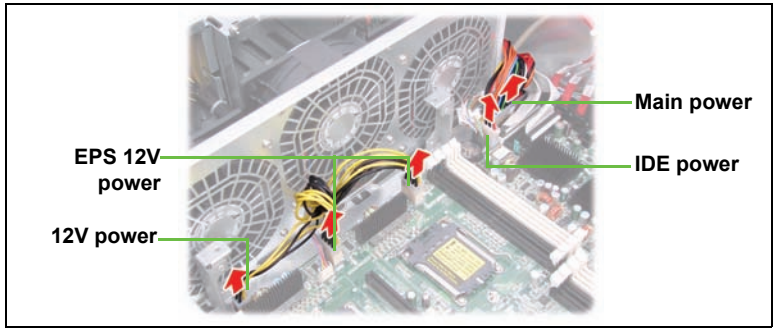
3.3 Replacing Motherboard Components

Follow these instructions to remove motherboard components and replace the motherboard.

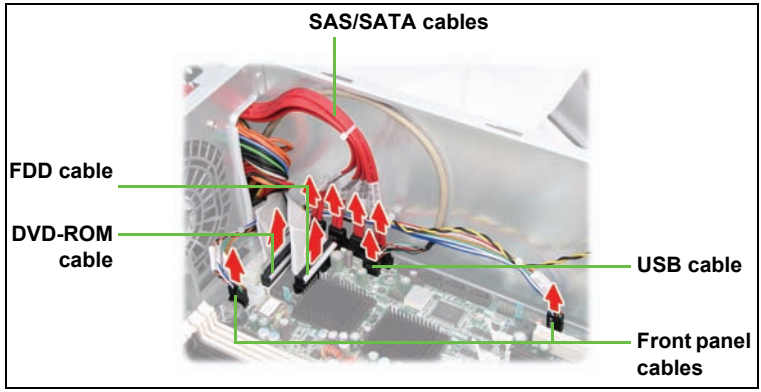
3.3.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

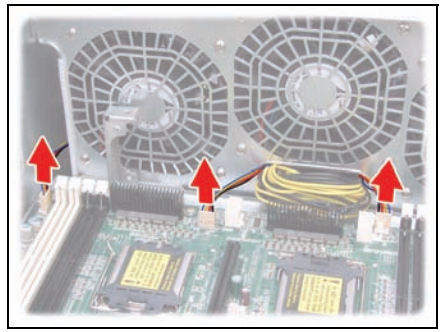
1. Disconnect all the power cables.



2. Disconnect the DVD-ROM drive cable, SAS/SATA hard drive cables, USB cable, and front panel cables.



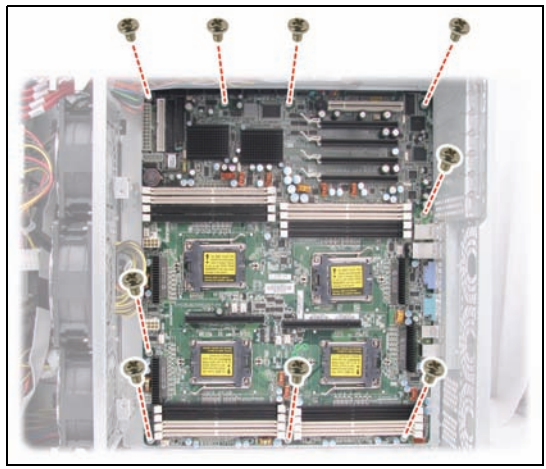
3. Disconnect the fan cables.



3.3.2 Replacing the Motherboard

After removing all of those cables, follow these instructions to remove the motherboard from the chassis.

1. Remove the heat sinks and processors if installed.
2. Remove the nine screws that secure the motherboard to the chassis.



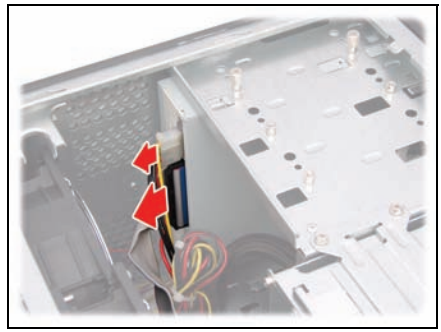
3. Carefully lift the motherboard from the chassis.

NOTE: The motherboard is too large to lift straight out. Lift the front edge of the motherboard up to an angle of about 45º. Then slide the motherboard out, front end first.

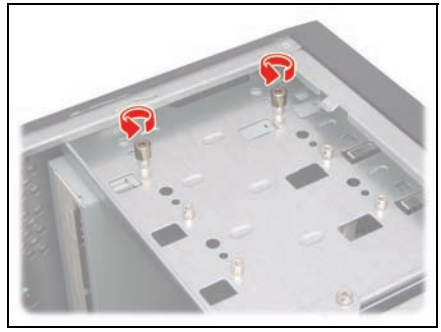
3.4 Replacing the DVD-ROM

Follow these instructions to replace the DVD-ROM.

1. Remove the power and data cables from the rear of the DVD-ROM drive.



2. Remove the two thumbscrews that secures the DVD-ROM drive to the chassis.



3. Slide the DVD-ROM drive out of the chassis in the direction of the arrow shown.

4. Install a new DVD-ROM drive in the drive bay and secure with two thumbscrews.
5. Replace the power and data cables.

3.5 Replacing the Floppy Disk Drive

Follow these instructions to replace the FDD in your VX50-B4985 system.

1. Loosen the two screws that secure the lower cover to the chassis of the VX50-B4985. Slide the cover back and remove it to expose the service port for the floppy disk drive.

2. Remove the power and data cables from the floppy disk drive.

3. Loosen the two thumbscrews that secures the floppy disk drive in place.

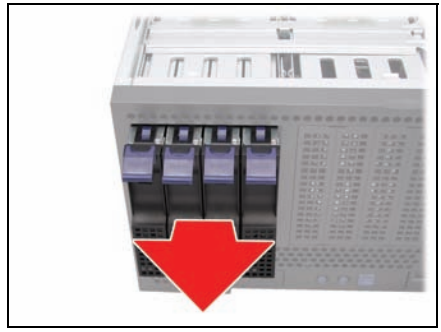
4. Slide the floppy disk drive out of the chassis.

5. Slide the new unit into place, secure with the two thumbscrews and replace the power and data cables.

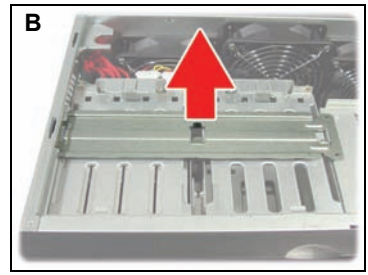
3.6 Replacing the SAS/SATA Backplane

Follow these instructions to replace the SAS/SATA backplane in your VX50-B4985 system.

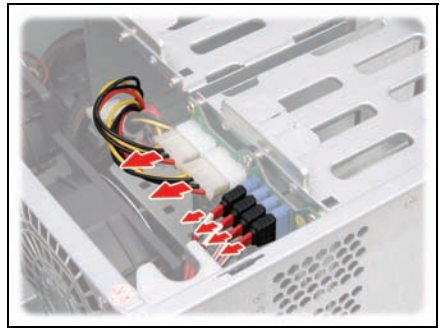
1. Remove all the SATA hot swap HDD trays from the VX50-B4985.



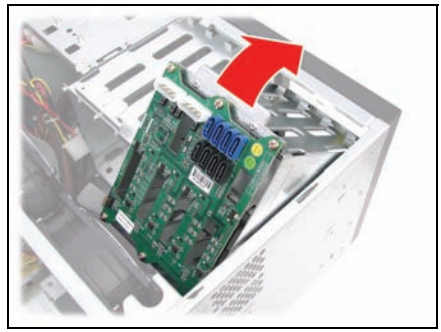
2. Release the two screws holding the cradle locking bar in place (**A**) and remove the bar (**B**).



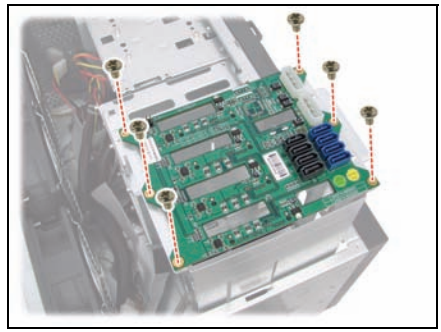
3. Disconnect all cables from the SATA backplane.



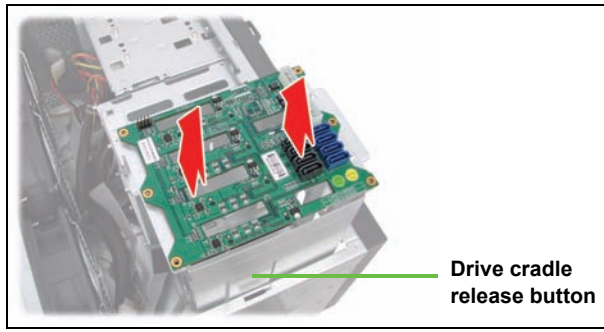
4. Lift the drive cradle to the vertical position as shown.



5. Remove the six screws to release the backplane.



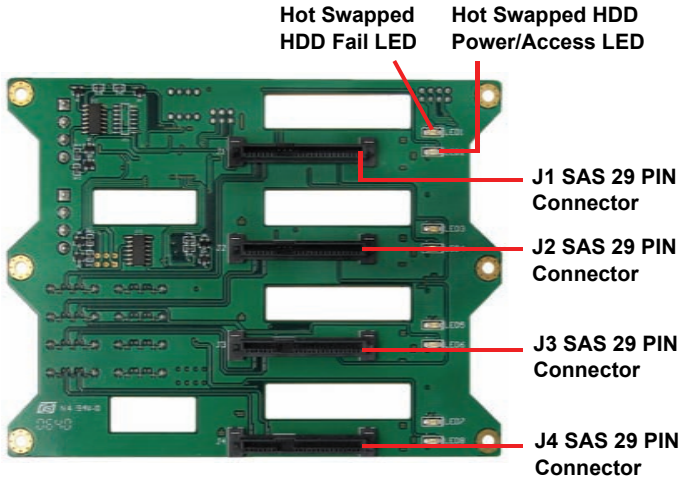
6. Lift the backplane from the chassis.



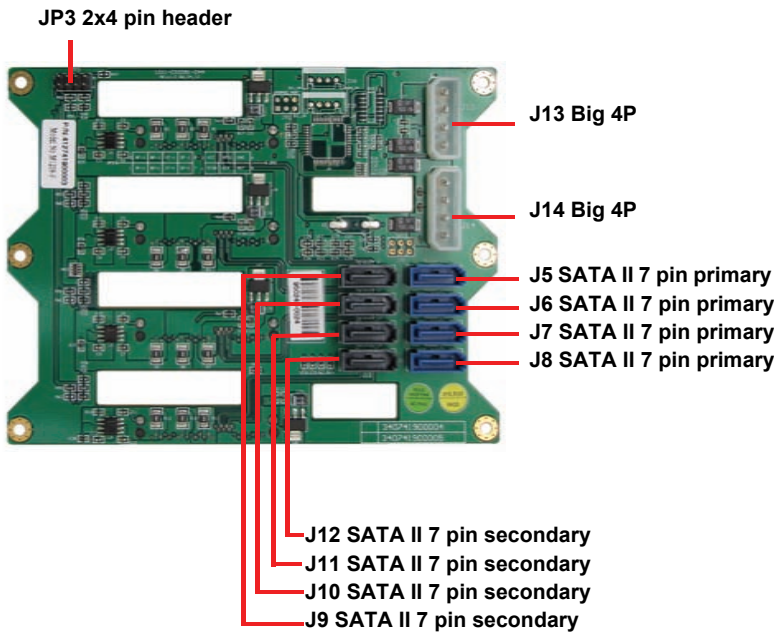
7. Secure a new backplane in place with six screws.
8. Press the drive cradle release button and lower the drive cradle back into place. (See the drive cradle release button indicated in the step 6.)
9. Reconnect the power and data cables.

3.6.1 SAS/SATA Backplane (M1209-P) Features

Front View



Rear View



3.6.2 SAS/SATA Backplane (M1209-P) Header Pin Definition

JP3 External Hard disk Fail LED Pin out

1	AF+1	2	AF-1
3	BF+1	4	BF-1
5	CF+1	6	CF-1
7	DF+1	8	DF-1

LED Definition

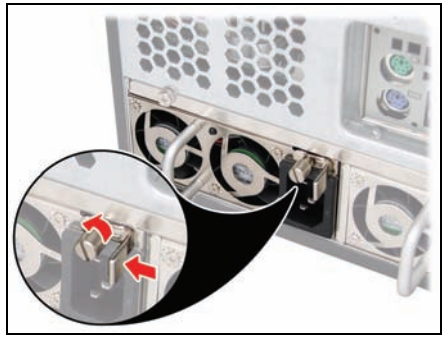
LED	Color	State	Description
Hot Swappable HDD Tray Power/Access LED	Green	ON	Power connected
	Green	Blinking	HDD access activity
	OFF	OFF	Power disconnected
Hot Swappable HDD SAS Failed LED	Amber	ON	SAS HDD fail (Reserved for SAS add-on card)
	OFF	OFF	No failure found

NOTE: To enable the HDD failure LED function, the SAS PCI card need to support this function. Please check if there is any failure LED output pin on the SAS card and check if it can comply with the backplane LED input pin. If it does, then you need to use a cable to connect them to enable this function.

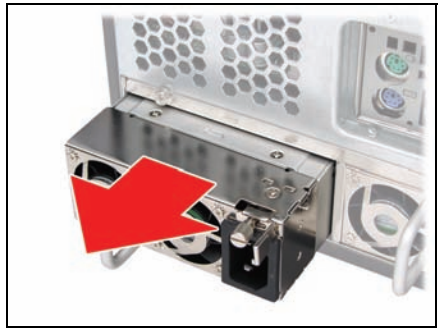
3.7 Replacing the Redundant Power Supply

Follow these instructions to replace a redundant power supply unit in your VX50-B4985 system.

1. Release the thumbscrew of the redundant power supply and push the latch to the left.



2. Pull out the redundant power supply unit as shown.

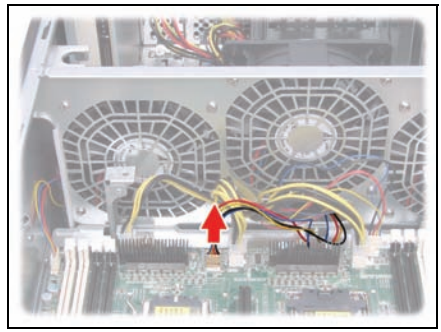


3. Insert the new unit secure it by tightening the thumbscrew.

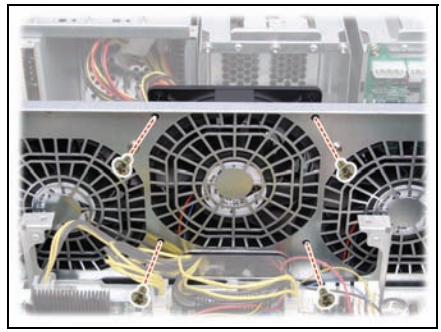
3.8 Replacing the System Fans

Follow these instructions to replace the cooling fans in your VX50-B4985 system. See “Motherboard (S4985) Layout” on page 12 for the fan header locations.

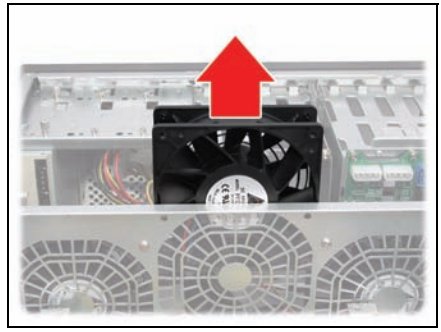
1. Locate the fan connector on the motherboard for the fan you want to replace and unplug the fan cable as shown.



2. Remove the four screws that secure the fan to the chassis.



3. Pull the fan away from the chassis as shown and lift it free.



4. Replace the new fan into the chassis and secure with the four screws.
5. Reconnect the fan cable to the connector on the motherboard.

Appendix I: BIOS Differences

The BIOS of B4985 is similar to the BIOS of S4985. There is only one menu different. You may refer to the attached motherboard manual for the complete BIOS information. The differences between B4985 and S4985 is on the “Advanced/Hardware Health Information” menu. See the following for the differences.

Advanced/Hardware Health Information

PhoenixBIOS Setup Utility

Advanced

Hardware Monitor:		Item Specific Help
CPU0 Temperature	xxx ºC	All items on this menu cannot be modified in user mode. If any items require changes, please consult your system Supervisor.
CPU1 Temperature	xxx ºC	
CPU2 Temperature	xxx ºC	
CPU3 Temperature	xxx ºC	
CPU4 Temperature	xxx ºC	
CPU5 Temperature	xxx ºC	
CPU6 Temperature	xxx ºC	
CPU7 Temperature	xxx ºC	
sys1 Temperature	xxx ºC	
sys2 Temperature	xxx ºC	
sys3 Temperature	xxx ºC	
sys4 Temperature	xxx ºC	
sys5 Temperature	xxx ºC	
CPU1 Fan Speed	xxxx RPM	
CPU2 Fan Speed	xxxx RPM	
CPU3 Fan Speed	xxxx RPM	
CPU4 Fan Speed	xxxx RPM	
CPU5 Fan Speed	xxxx RPM	
CPU6 Fan Speed	xxxx RPM	
CPU7 Fan Speed	xxxx RPM	
CPU8 Fan Speed	xxxx RPM	
System Fan 1 Speed	xxxx RPM	
System Fan 2 Speed	xxxx RPM	
System Fan 3 Speed	xxxx RPM	
CPU0 VDD voltage	xxxx V	
CPU1 VDD voltage	xxxx V	
CPU2 VDD voltage	xxxx V	
CPU3 VDD voltage	xxxx V	
CPU4 VDD voltage	xxxx V	
CPU5 VDD voltage	xxxx V	
CPU6 VDD voltage	xxxx V	
CPU7 VDD voltage	xxxx V	
+12V	xxxx V	
+5V	xxxx V	
HT1.2V	xxxx V	
3.3VSB	xxxx V	
CK804 Vcore 1.5V	xxxx V	

F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

S4985 Advanced/Hardware Monitor Information

PhoenixBIOS Setup Utility

Advanced

Hardware Monitor		Item Specific Help
CPU0 Temperature	xxx ºC	
CPU1 Temperature	xxx ºC	
CPU2 Temperature	xxx ºC	
CPU3 Temperature	xxx ºC	
Sys1 Temperature	xxx ºC	
Sys2 Temperature	xxx ºC	
Sys3 Temperature	xxx ºC	
Sys4 Temperature	xxx ºC	
Sys5 Temperature	xxx ºC	
CPU0 Fan Speed	xxxx RPM	
CPU1 Fan Speed	xxxx RPM	
CPU2 Fan Speed	xxxx RPM	
CPU3 Fan Speed	xxxx RPM	
System Fan 0 Speed	xxxx RPM	
System Fan 1 Speed	xxxx RPM	
System Fan 2 Speed	xxxx RPM	
System Fan 3 Speed	xxxx RPM	
System Fan 4 Speed	xxxx RPM	
System Fan 5 Speed	xxxx RPM	
System Fan 6 Speed	xxxx RPM	
System Fan 7 Speed	xxxx RPM	
CPU0 VDD voltage	xxxx V	
CPU1 VDD voltage	xxxx V	
+12V	xxxx V	
+5V	xxxx V	
HT1.2V	xxxx V	
3.3VSB	xxxx V	
CK804 Vcore 1.5V	xxxx V	

F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶ Sub-Menu F10 Previous Values

Table of Differences

	S4985	B4985
Auto Fan Control	Disabled	Enabled
Hardware Monitor Fan	CPU0 Fan Speed CPU1 Fan Speed CPU2 Fan Speed CPU3 Fan Speed System Fan0 Speed System Fan1 Speed System Fan2 Speed System Fan3 Speed System Fan4 Speed System Fan5 Speed System Fan6 Speed System Fan7 Speed	CPU1 Fan Speed CPU2 Fan Speed CPU3 Fan Speed CPU4 Fan Speed CPU5 Fan Speed CPU6 Fan Speed CPU7 Fan Speed CPU8 Fan Speed System Fan1 Speed System Fan2 Speed System Fan3 Speed

Appendix II: Cable Connection Tables

SAS/SATA Cables

Table 1: VX50-B4985 Model

M1209-P SAS/SATA Backplane	Connects to	Motherboard
J5	→	SATA1
J6	→	SATA0
J7	→	SATA3
J8	→	SATA2

FAN Cables

Table 2: System Fan to Motherboard

System Fan	Connects to	Motherboard
FAN 1	→	SYSFAN1 connector
FAN 2	→	SYSFAN0 connector
FAN 3	→	SYSFAN2 connector

Table 3: Heatsink Cooler Fan to Motherboard

Heatsink Cooler Fan	Connects to	Motherboard
CPU FAN1	→	CPUFAN0 connector
CPU FAN2	→	SYSFAN5 connector
CPU FAN3	→	CPUFAN2 connector
CPU FAN4	→	SYSFAN4 connector

Table 4: Heatsink Cooler Fan to CPU Board

Heatsink Cooler Fan	Connects to	CPU Board
CPU FAN5	→	CPUFAN4 connector
CPU FAN6	→	CPUFAN5 connector
CPU FAN7	→	CPUFAN7 connector
CPU FAN8	→	CPUFAN6 connector

Power Supply Cables

Table 5: Power Supply to Motherboard

Power Supply	Connects to	Motherboard
24-pin power cable	→	PWR0 24-pin connector
8-pin power cable	→	PWR1 8-pin connector
8-pin power cable	→	PWR2 8-pin connector
4-pin power cable	→	PWR3 4-pin connector
4-pin power cable	→	PWR4 4-pin IDE connector

Table 6: Power Supply to CPU Board

Power Supply	Connects to	CPU Board
24-pin power cable	→	PWR1 24-pin connector
8-pin power cable	→	PWR2 8-pin connector
8-pin power cable	→	PWR3 8-pin connector
4-pin power cable	→	PWR4 4-pin connector

Table 7: Power Supply to Backplane

Power Supply	Connects to	Backplane
4-pin power cable	→	J13 4-pin connector
4-pin power cable	→	J14 4-pin connector

Table 8: Power Supply to DVD-ROM

Power Supply	Connects to	DVD-ROM
4-pin power cable	→	4-pin connector

Other Cables

Table 9: DVD-ROM Related Cables

Motherboard IDE connector	→	DVD-ROM
4-pin power connector	→	DVD-ROM

Table 10: FDD Related Cables

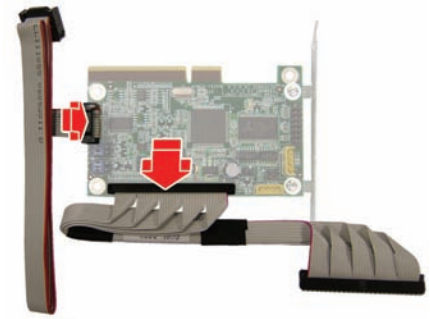
Motherboard FDD connector	→	FDD drive
4-pin power cable	→	FDD drive

Appendix III: Installing the SMDC Card

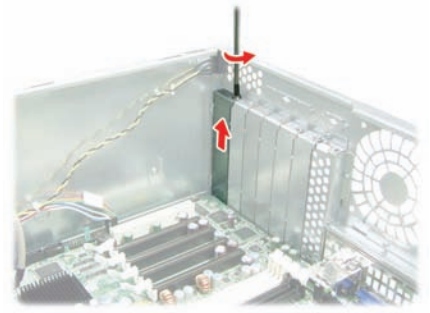
The following provides you with the information on installing M3291 SMDC card into any PCI slot in your VX50-B4985 system.

1. Secure M3291 on a PCI bracket as shown.

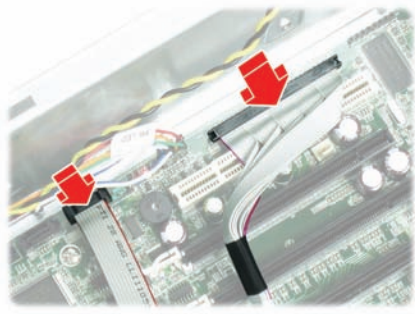
2. Connect the following cables to M3291 as shown.
    a. 2x25 pin SMDC cable to M3291 J1 connector.
    b. 2x5 pin serial cable to M3291 COM port (J2).



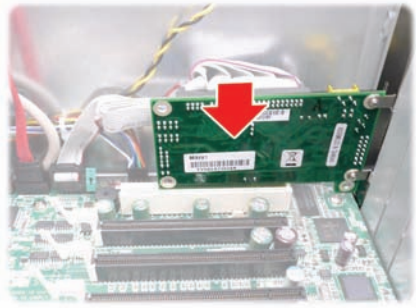
3. Unscrew the blanking plate from the slot as shown. Lift up the blanking plate.



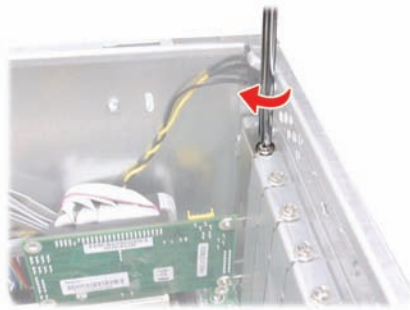
4. Connect the other end of SMDC cable and serial cable to the SMDC connector and COM2 header (J101) on the motherboard.



5. Place the SMDC card in the PCI slot as shown.



6. Secure the PCI bracket with the screw you removed from the blanking plate.



Cable Connection Table

SMDC Card (M3291)	Connects to	Motherboard
J1 connector	→	SMDC connector
J2 COM port	→	J101 COM2 header

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then TYAN Computer Corporation can help.Besides designing innovative and quality products for over a decade, TYAN has continuously offered customers service beyond their expectations. TYAN's website
(**www.tyan.com**) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN serves multiple market segments with the industry's most competitive services to support them.

"TYAN's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

Please feel free to contact us directly for this service at **tech-support@tyan.com**

Help Resources:

1. See the beep codes section of this manual.

2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com

3. Contact your dealer for help BEFORE calling TYAN.

4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you.

TYAN Transport VX50-B4985 Series User's Manual V1.01

Document ID: D1851-101