ServeRAID M5200 Series Flash/RAID 5 Upgrade for IBM System x

User's Guide

Part Number: 00D2439

First Edition (October 2013)

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الآمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się
z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen
canjbinj soengq cungj vahgangj ancien siusik.

مەزكۇر مەھسۇلاتنى ئورنىتىشتىن بۇرۇن بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

ཐོན་རྫས་འདི་བདེ་སྒྲིག་མ་བྱས་གོང་། སྔོན་ཀྱི་ཡིད་གཟབ་བྱ་འདུ་མིན་ཡོད་པའི་འོད་སྙེར་བལྟ་དགོས།

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

[illegible]

Important:

Each caution and danger statement in this document is labeled with a number. This number is used to cross reference an English-language caution or danger statement with translated versions of the caution or danger statement in the *Safety Information* document.

For example, if a caution statement is labeled "Statement 1," translations for that caution statement are in the *Safety Information* document under "Statement 1."

Be sure to read all caution and danger statements in this document before you perform the procedures. Read any additional safety information that comes with the server or optional device before you install the device.

This device is intended for use with UL Listed IBM devices.

Statement 1:

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

To Connect:	To Disconnect:
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Statement 3:

CAUTION:
When laser products (such as CD-ROMs, DVD drives, fiber optic devices, or transmitters) are installed, note the following:

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Class 1 Laser Product
Laser Klasse 1
Laser Klass 1
Luokan 1 Laserlaite
Appareil À Laser de Classe 1

Statement 8:

CAUTION:
Never remove the cover on a power supply or any part that has the following label attached.

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

Statement 28:

CAUTION:
The battery is a lithium ion battery. To avoid possible explosion, do not burn the battery. Exchange it only with the approved part. Recycle or discard the battery as instructed by local regulations.

Chapter 1: Overview

This guide documents the IBM® ServeRAID M5200 Series devices, which include one 1GB double data rate 3 (DDR3) cache module, and three DDR3 transportable memory modules with integrated Open NAND Flash Interface (ONFI) NAND flash cache offload powered by a super-capacitor power module.

In addition, this guide documents how to install the ServeRAID M5200 Series modules on the ServeRAID M5210 SAS/SATA controller for IBM System x®, and then connect the modules by cable to the remote power module. The modules come with a ServeRAID M5200 Series Flash Power Module for IBM System x.

Supported configurations are the 1GB cache module, and the 1GB, 2GB, and 4GB transportable memory modules with the flash backup capability. The ServeRAID M5200 Series includes the following products:

- ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x (transportable memory module)
- ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x (transportable memory module)
- ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x (transportable memory module)

NOTE The ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x has no flash backup capability and is not a transportable memory module, as it cannot back up cache in event of system power loss. The three ONFI NAND flash upgrade devices are referred to in this document as transportable memory modules.

Before you use this information and the products it supports, read the notices in Notices on page 19, and the *IBM Warranty Information* documents that come with the transportable memory module.

1.1 ServeRAID M5200 Series Product Description

The ServeRAID M5200 Series Flash/RAID 5 Upgrade for IBM System x products protect the integrity of the cached data on the ServeRAID M5210 SAS/SATA controller for IBM System x by providing backup power if there is a complete AC power failure or a brief power outage. The modules are attached to the controller and connected by cable to the remote power module.

The remote power module provides the power to off-load cached data from the DRAM to the nonvolatile flash memory on the transportable memory modules. in case a power failure or outage occurs. The DRAM contents are then restored to the transportable memory modules the next time the controller is powered on. Cached data can then be written to the storage devices.

The ServeRAID M5210 SAS/SATA controller for IBM System x can run in either integrated MegaRAID (iMR) mode or in MegaRAID (MR) mode. The controller can run in iMR mode without using the transportable memory modules. To run the controller in MegaRAID mode requires a transportable memory module.

1.2 Supported RAID Level Upgrades

The transportable memory modules enable better performance in RAID 5 / RAID 50 configurations, can add RAID 6 / RAID 60 capability (with the purchase of an IBM System x Features on Demand upgrade), and enable write-back operations in all configurations. The transportable memory module is mounted on a controller and provides a 1866-megatransfers-per-second (MT/s) double data rate 3 (DDR3) interface between the controller and the memory integrated circuits (ICs).

To use RAID levels 5, 6, 50, or 60 with the ServeRAID M5210 SAS/SATA controller for IBM System x, you need to install a Feature on Demand (FoD) upgrade and/or a transportable memory module, depending on the RAID level.

This ServeRAID M5210 SAS/SATA controller supports RAID levels 5 and 50 with any of the following installed modules:

- ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x

This controller supports MegaRAID RAID levels 6 and 60 with any of the following installed modules and the Feature on Demand upgrade:

- ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x
- ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x

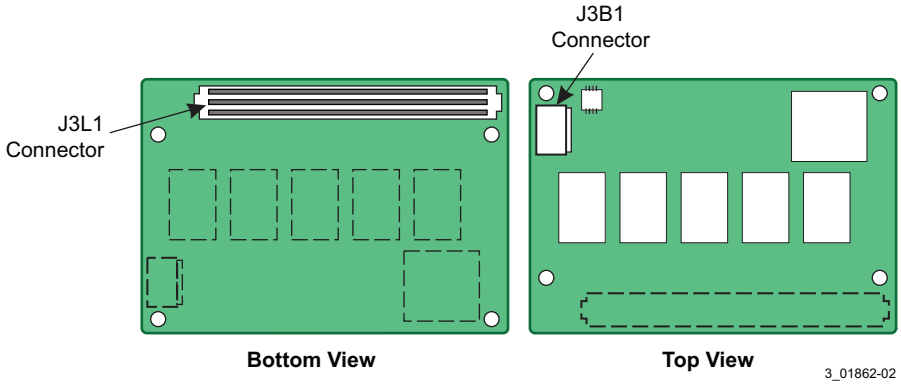
1.3 Option Kit Parts

The transportable memory module option kit contains the following parts:

- One ServeRAID M5200 Series Flash/RAID 5 Upgrade module

NOTE The illustrations in this document might differ slightly from your hardware.

Figure 1 ServeRAID M5200 Series Flash/RAID 5 Upgrade Module



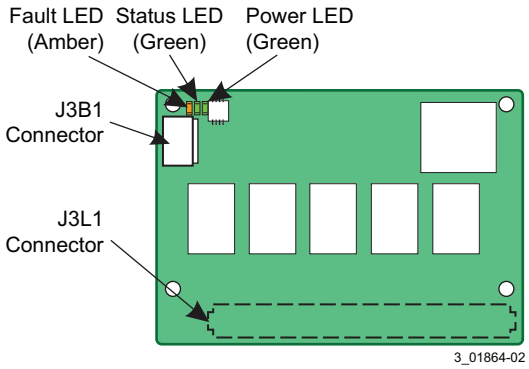
- One ServeRAID M5200 Series Flash Power Module for IBM System x
- Two remote-mount cables
- IBM *ServeRAID M Documentation* CD
- IBM *Warranty Information* document
- IBM *Important Notices* document

See Replaceable Components on page 10 for more information about the field replaceable units (FRUs).

1.4 LEDs on the ServeRAID M5200 Series Flash/RAID Upgrade Products

The following illustration shows the LEDs on a ServeRAID M5200 Series module.

Figure 2 LEDs on a ServeRAID M5200 Series Module



The following table describes the LEDs on the module.

Table 1 ServeRAID M5200 Series Module LEDs

LED Name and Color	LED Meaning	LED State
Power - green	LED On	Power is provided by the power module.
	LED Off	The controller is powered by host system power or it is powered off.
Status - green	LED On	Cache data offload to NAND flash or cache data restore from NAND flash is in progress.
	LED Off	No NAND flash activity is occurring.
Fault - amber	LED On	A fault is indicated on the transportable memory module cache offload system.
	LED Off	Normal operation.

1.5 Replaceable Components

Field replacement units (FRUs) must be replaced by a trained service technician only.

For more information about the terms of the warranty and getting service and assistance, see the *Warranty Information* document that comes with the controller.

The following table describes the field replacement units.

Table 2 Field Replaceable Units for the ServeRAID M5200 Series Modules and Remote-mount Cables

Description	FRU Part Number (trained service technician only)
ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x	47C8657
ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x	47C8661
ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x	47C8665
ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x	47C8669
ServeRAID M5200 Series Flash Power Module for IBM System x	47C8696
Remote-mount cable for ServeRAID M5200 Series Flash Power Module for IBM System x (925mm)	46C9789
Remote-mount cable for ServeRAID M5200 Series Flash Power Module for IBM System x (425mm)	46C9790

Chapter 2: Installation

This chapter describes how to install a ServeRAID M5200 Series transportable memory module on the ServeRAID M5210 SAS/SATA controller for IBM System x, and then connect the transportable memory module by cable to the ServeRAID M5200 Series Flash Power Module for IBM System x.

2.1 Installing the Transportable Memory Module, Controller, and Remote Power Module

Perform the following tasks to install a transportable memory module, connect the transportable memory module to a remote power module, and then install the controller and the remote power module in the server.

1. Remove the controller from the server. For this procedure, see Removing the Controller from the Server.
2. Install the transportable memory module directly on the RAID controller. For this procedure, see Installing the Transportable Memory Module Directly on the Controller.
3. Connect the transportable memory module to the remote power module. For this procedure, see Connecting the Transportable Memory Module on the Controller to the Remote Power Module.
4. Reinstall the controller in the server. For this procedure, see Reinstalling the Controller in the Server.

2.1.1 Removing the Controller from the Server

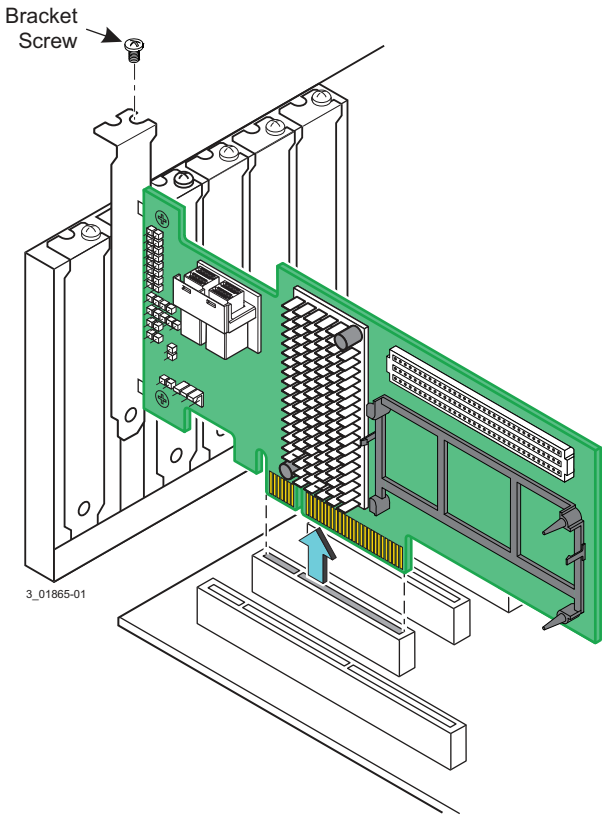
Follow these steps to remove the controller from the server.

1. Read the safety information that comes with the controller.
2. Turn off the server and peripheral devices and disconnect the power cords. Remove the server cover.

   For more information about removing the controller from the server, see the documentation that comes with the server.
3. Ground yourself before you touch the controller.
4. Disconnect all cables from the controller, remove the screw that attaches the bracket to the server, and carefully remove the controller from the slot.

NOTE The following illustration shows the controller installed in a PCI Express slot in the server. Your server configuration might be different.

Figure 1 Removing the Controller from the Server



5. Place the controller on a flat, clean, static-protective surface, and continue with the next section.

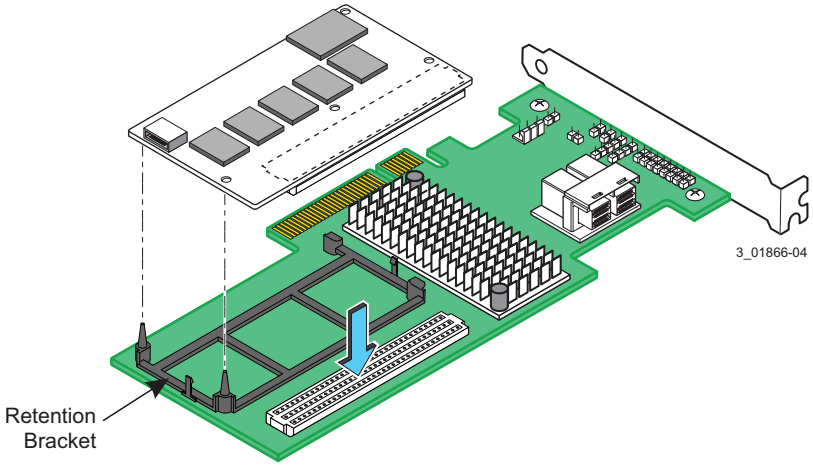
2.1.2 Installing the Transportable Memory Module Directly on the Controller

Follow these steps to install the transportable memory module directly on the controller.

1. Read the safety information that comes with the controller.
2. Touch the static-protective package that contains the transportable memory module to any unpainted surface on the outside of the server; then, grasp the unit by the top edge or upper corners, remove it from the package, and inspect it for damage.

   Contact your IBM sales representative or IBM reseller if the unit appears to be damaged.
3. If you have not already done so, position the controller on a flat, clean, static-protective surface.
4. Hold the transportable memory module so that the small cable connector is on the top and the board-to-board connector is on the bottom.
5. Align the J3L1 board-to-board connector on the transportable memory module with the board-to-board connector on the controller, as shown in the following illustration.

Figure 2 Installing the Transportable Memory Module on the Controller



6. Carefully press the transportable memory module onto the controller so that the two connectors are firmly joined and the two retention bracket tabs snap into place.

2.1.3 Connecting the Transportable Memory Module on the Controller to the Remote Power Module

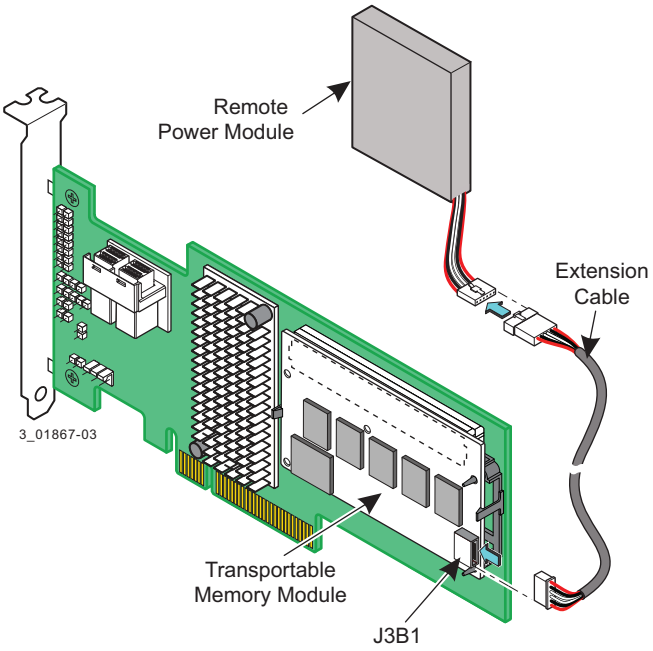
Follow these steps to connect the transportable memory module on the controller by cable to the remote power module.

1. With the controller on a flat, clean, static-free surface, ground yourself and make sure the system is grounded.
2. Touch the static-protective package that contains the power module to any unpainted surface on the outside of the server; then, grasp the unit by the top edge or upper corners, remove it from the package, and inspect it for damage.

   Contact your IBM sales representative or IBM reseller if the unit appears to be damaged.
3. Remove the cable included in the transportable memory module option kit.
4. Connect the large connector end of the remote-mount cable to the power module and connect the small connector end of the remote-mount cable to the J3B1 cable connector on the transportable memory module that is mounted on the controller, as shown in the following figure.

   Align the cable connectors to make sure they are connected correctly.

Figure 3 Connecting the Transportable Memory Module to the Remote Power Module



2.1.4 Reinstalling the Controller in the Server

1. Mount the flash power module in a suitable location inside the server, observing the following guidelines:

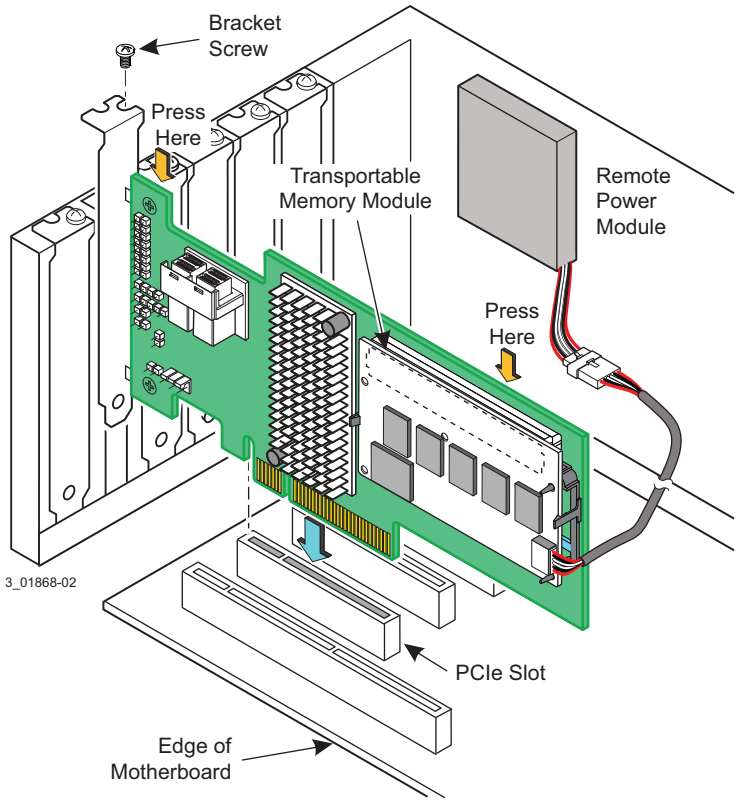
   No standard method exists for mounting the power module inside the server. The correct mounting location and procedure depends on the server configuration.

   Make sure the power module is close enough to the PCIe slot for the remote-mount cable to reach from the power module to the transportable memory module on the controller after the controller is installed in the server.
2. Position the controller by aligning the PCIe x8 connector with the PCIe x8 slot on the system board.
3. Insert the controller firmly into the connector and press down on the top edge of the controller so that it is firmly seated in the connector.

   See Figure 4 for the correct place to press on the controller.

NOTE Never apply pressure to the transportable memory module when you insert the controller. Instead, press down only on the top edge of the controller.

Figure 4 Re-installing the Controller in the Server



4. Replace the expansion-slot bracket screw if you removed it.
5. Reconnect the controller to the SAS devices and SATA devices in the server.
6. Replace the server cover, reconnect the power cords, and turn on the server.

NOTE Make sure that the power is turned on to the SAS devices and the SATA devices before or at the same time that the power is turned on to the server. If the power is turned on to the server before it is turned on to the devices, the server might not recognize the devices.

NOTE The firmware takes several seconds to initialize. During this time, the controller scans the ports.

Chapter 3: Specifications

This chapter includes technical information and specifications for the ServeRAID M5200 Series Flash/RAID 5 Upgrade modules and the ServeRAID M5200 Series Flash Power Module for IBM System x.

The following table lists the technical specifications for the transportable memory modules and the flash power module.

Table 1 Technical Specifications for the ServeRAID M5200 Series Flash/RAID 5 Upgrade Modules and the ServeRAID M5200 Series Flash Power Module for IBM System x

Specification	ServeRAID M5200 Series Upgrade Modules	ServeRAID M5200 Series Flash Power Module for IBM System x
Technology	**ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x** - On-board 1-GB nonvolatile DDR3 1866MT/s **ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x** - On-board 1-GB nonvolatile DDR3 1866MT/s and transportable ONFI NAND flash **ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x** - On-board 2-GB nonvolatile DDR3 1866MT/s and transportable ONFI NAND flash **ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x** - On-board 4-GB nonvolatile DDR3 1866MT/s and transportable ONFI NAND flash	**ServeRAID M5200 Series Flash Power Module for IBM System x -**
Operating Temperature (Ambient)	10 °C to 55 °C	10 °C to 55 °C
Storage Temperature	–40 °C to 70 °C	0 °C to 55 °C
Humidity (Storage and Operating)	20% to 80% noncondensing	20% to 80% noncondensing
Mechanical Form Factor	3.104 in. x 2.00 in.	1.36 in. x 2.11 in.
Lifetime at 25 °C	N/A	3 years
Cycle Life at 25 °C	N/A	500,000 cycles
Module Voltage	N/A	13.5 V
Cache Memory Size Supported	**ServeRAID M5200 Series 1GB Cache/RAID 5 Upgrade for IBM System x** - 1GB **ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade for IBM System x** - 1GB **ServeRAID M5200 Series 2GB Flash/RAID 5 Upgrade for IBM System x** - 2GB **ServeRAID M5200 Series 4GB Flash/RAID 5 Upgrade for IBM System x** - 4GB	N/A

Appendix A: Getting Help and Technical Assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

A.1 Before You Call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to the IBM support website at http://www.ibm.com/supportportal/ to check for technical information, hints, tips, and new device drivers or to submit a request for information.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with IBM systems also describes the diagnostic tests that you can perform. Most systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

A.2 Using the Documentation

Information about your IBM system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to http://www.ibm.com/supportportal/ and follow the instructions.

A.3 Getting Help and Information from the World Wide Web

On the World Wide Web, the IBM website has up-to-date information about IBM systems, optional devices, services, and support. You can find service information for IBM systems and optional devices at http://www.ibm.com/supportportal/.

A.4 Software Service and Support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems. For information about which products are supported by Support Line in your country or region, see http://www.ibm.com/services/supline/products/.

For more information about Support Line and other IBM services, see http://www.ibm.com/services/, or see http://www.ibm.com/planetwide/ for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

A.5 Hardware Service and Support

You can receive hardware service through your IBM reseller or IBM Services. To locate a reseller authorized by IBM to provide warranty service, go to http://www.ibm.com/partnerworld/ and click **Find Business Partners** on the right side of the page. For IBM support telephone numbers, see http://www.ibm.com/planetwide/. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

A.6 IBM Taiwan Product Service

台灣 IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路 7 號 3 樓
電話：0800-016-888

IBM Taiwan product service contact information:

IBM Taiwan Corporation
3F, No 7, Song Ren Rd.
Taipei, Taiwan
Telephone: 0800-016-888

Appendix B: Notices

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B.2 Important Notes

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

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Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

This product is not intended to be connected directly or indirectly by any means whatsoever to interfaces of public telecommunications networks, nor is it intended to be used in a public services network.

B.3 Documentation Format

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when you use the PDF files and want to request a web-based format or accessible PDF document for a publication, direct your mail to the following address:

Information Development
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B.4 Electronic Emission Notices

Federal Communications Commission (FCC) statement

Note: 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 instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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.

Industry Canada Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-IBM option cards.

Attention: This is an EN 55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Responsible manufacturer:
International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

European Community contact:
IBM Deutschland GmbH
IBM Technical Regulations, Department M372
IBM-Allee 1,71139 Ehningen, Germany
Telephone: +49 7032 15 2941
Email: lugi@de.ibm.com

Germany Class A statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

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Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
IBM Deutschland GmbH
Technical Regulations, Abteilung M372
IBM-Allee 1, 71139 Ehningen, Germany
Telephone: +49 7032 15-2941
E-mail: lugi@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

Japan VCCI Class A statement

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

Korea Communications Commission (KCC) statement

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This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.

Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

People's Republic of China Class A electronic emission statement

中华人民共和国“A类”警告声明

声 明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Taiwan Class A compliance statement

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