

Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 User's Guide

**A Guide for Technically Qualified Assemblers of Intel® identified
Subassemblies/Products**

Intel Order Number: G49043-002



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Safety Information

Important Safety Instructions

Read all caution and safety statements in this document before performing any of the instructions. See also Intel Server Boards and Server Chassis Safety Information on the *Intel® Server Deployment Toolkit 3.0 CD* and/or at <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Wichtige Sicherheitshinweise

Lesen Sie zunächst sämtliche Warnung und Sicherheitshinweise in diesem Dokument, bevor Sie eine der Anweisungen ausführen. Beachten Sie hierzu auch die Sicherheitshinweise zu Intel-Serverplatinen und Servergehäusen auf der *Intel® Server Deployment Toolkit 3.0 CD* oder unter <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Consignes de sécurité

Lisez attention toutes les consignes de sécurité et les mises en garde indiquées dans ce document avant de suivre toute instruction. Consultez Intel Server Boards and Server Chassis Safety Information sur le *Intel® Server Deployment Toolkit 3.0 CD* ou bien rendez-vous sur le site <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm>.

Instrucciones de seguridad importantes

Lea todas las declaraciones de seguridad y precaución de este documento antes de realizar cualquiera de las instrucciones. Vea Intel Server Boards and Server Chassis Safety Information en el *Intel® Server Deployment Toolkit 3.0 CD* y/o en <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm>.

重要安全指导

在执行任何指令之前，请阅读本文档中的所有注意事项及安全声明。和/或 <http://www.intel.com/support/motherboards/server/sb/cs-010770.htm> 上的 *Intel Server Boards and Server Chassis Safety Information*（《Intel 服务器主板与服务器机箱安全信息》）。

Warnings

Heed safety instructions: Before working with your server product, whether you are using this guide or any other resource as a reference, pay close attention to the safety instructions. You must adhere to the assembly instructions in this guide to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products/components will void the UL listing and other regulatory approvals of the product and will most likely result in noncompliance with product regulations in the region(s) in which the product is sold.

System power on/off: The power button DOES NOT turn off the system AC power. To remove power from the system, you must unplug the AC power cord from the wall outlet. Make sure the AC power cord is unplugged before you open the chassis, add, or remove any components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—on your server when handling parts.

ESD and handling boards: Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that you can grip with your fingertips or with a pair of fine needle nosed pliers. If your jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool you use to remove a jumper, or you may bend or break the pins on the board.

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1 About the Intel® RAID Maintenance Free Backup Unit AXRMFBU2

Intel® Integrated RAID (Redundant Array of Inexpensive Disks) Modules provide reliability, high performance, and fault-tolerant disk subsystem management. A complete fault-tolerant strategy requires protection of all data, including the unwritten cached data in the RAM cache. If power is lost, the data in the RAM cache is lost. To avoid data loss, a RAID Maintenance Free Backup Unit (RMFBU) can be added to store unwritten cached data from the RAID RAM during an AC power outage or if the AC power cord is removed.

A RAID Maintenance Free Backup Unit protects the integrity of the cached data on Intel® Integrated RAID Modules by offloading data stored in the RAM cache to the NAND flash if there is a complete AC power failure or a brief power outage. The Intel® RAID Maintenance Free Backup Unit provides an alternative to use an uninterruptible power supply (UPS) or it can act as a second level of fault tolerance when used with a UPS. Furthermore, it eliminates the need for lithium ion (Li-ion) batteries traditionally used to protect DRAM cache memory on PCI RAID controllers. Therefore this is a greener and lower total cost cache protection solution.

The cache memory available on Intel® Integrated RAID Modules can improve the overall system performance. Writing data to the controller's cache memory is much faster than writing it to a storage device. Write operations appear to complete very quickly at the software application level. The Intel® Integrated RAID Module writes the cached data to the storage device when system activity is low or when the cache is getting full. The risk of using write-back cache is that the cached data can be lost if the AC power fails before it is written to the storage device. This risk factor is eliminated when the Intel® Integrated RAID Module has a RMFBU installed.

The Intel® RAID Maintenance Free Backup Unit AXRMFBU2 consists of Cache Offload Module and SuperCap2. It monitors the voltage level of the DRAM modules of the Intel® Integrated RAID Module. If the voltage drops below a predefined level, the RMFBU offloads the data from the RAID RAM to the NAND flash of RMFBU2 Cache-offload Module and SuperCap2 provides sufficient power to complete the data transferring. When the voltage level returns to an acceptable level, the RAID RAM is recovered from flash, and all pending writes to storage devices are completed without losing any data.

The Intel® RAID Maintenance Free Backup Unit AXRMFBU2 has built-in functionality to charge the SuperCap2 automatically and to communicate entire unit status information such as voltage, temperature, and current to the host server system.

The Intel® RAID Maintenance Free Backup Unit AXRMFBU2 is a smart backup module and uses MegaRAID CacheVault™ Technology. It is compatible with a backup auxiliary power source. The SuperCap2 is charged automatically.

2 Installing the Hardware

The Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 pack attaches to the RAID modules remotely. Figure 1 displays the top view of the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2. The 26-pin connector (see letter “A” for the location of this connector) is used to remotely connect to an Intel® Integrated RAID module using supplied cable.

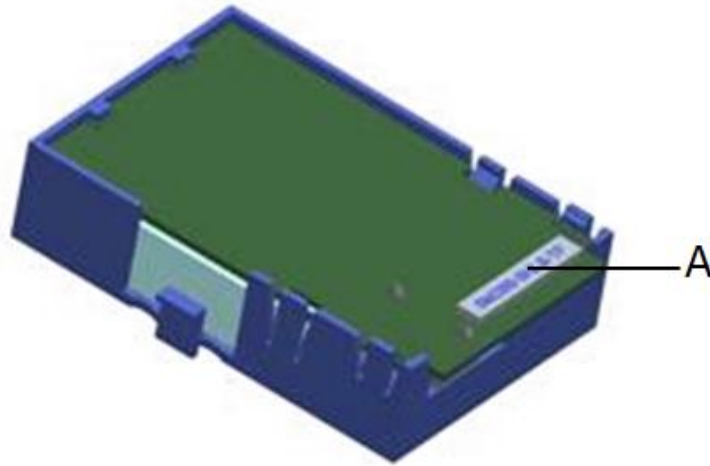


Figure 1. Top View of the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2

Remote Connecting Cables

Two 26-pin to 30-pin RMFBU2 Cache-offload Module cables (20-inch and 40-inch) are provided in the AXXRMFBU2 kit to remotely connect the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 to the Intel® Integrated RAID Module.

Table 1. Cable Compatibility

Intel® RAID Controller or Server System	20-inch Cable	40-inch Cable
Intel® Integrated RAID Module RMS25PB080	X	X
Intel® Integrated RAID Module RMS25PB040	X	X
Intel® Integrated RAID Module RMT3PB080	X	X
Intel® Integrated RAID Module RMS25CB080	X	X
Intel® Integrated RAID Module RMS25CB040	X	X
Intel® Integrated RAID Module RMT3CB080	X	X
Intel® pedestal chassis		X
Intel® rack mount chassis	X	

Important Pre-installation Considerations

Warning: Always ground yourself and/or use a ground strap before touching the RAID module or the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2. Perform all installation work at and ESD-safe workstation. Use an ESD-safe Phillips screwdriver set to a maximum torque of 2.25 inch-pounds, and be sure the screwdriver is centered in the screw to avoid damaging the screw head. If you exceed the maximum torque specification, you may damage the board, connectors, or screws, and you will void the warranty of the board.*

Installing the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2

Warning: After the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 is installed, do not disconnect it from the Intel® Integrated RAID Module RMS25PB080, RMS25PB040, RMT3PB080, RMS25CB080, RMS25CB040 or RMT3CB080 when system has an unclean shutdown (that is, AC lost during operating system is running). Doing so will cause AXXRMFBU2 unrecoverable failure and replacement is required.

To install the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 on the Intel® Integrated RAID Module, you must perform the following steps:

1. Remove the RAID Module if it is already installed in the server system. For information, see [“Removing the RAID Module”](#).
2. Install Intel® RAID Maintenance Free Backup Unit AXXRMFBU2 on the RAID Module using the following method:
 - Set up a remote connection through the remote RMFBU connector. For information, see [“Installing the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2”](#).
3. Install the RAID Module in the server system. For information, see [“Installing the Intel® Integrated RAID Module in the Server System”](#).

Removing the RAID Module

If the RAID module is already installed in a system, do the following to remove it before you install the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2:

1. Shutdown the system, turn off the power, and unplug the power cord(s).
2. Remove the chassis cover and ground yourself before touching the RAID module. Carefully unplug all cables connected to the RAID module.
3. Carefully remove the RAID module from the server board. For more information on removing Intel® Integrated RAID module, refer to *Quick Start User’s Guide* shipped with Intel® Integrated RAID module.
4. Place the RAID controller on a flat, clean, static-free surface.

Installing the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2

A remote connection to the RAID module is required. To install the Intel® RAID Maintenance Free backup Unit AXXRMFBU2 on the RAID Module through 26-pin connector, do the following:

1. Ground yourself, and take the Intel® RAID Maintenance Free backup Unit AXXRMFBU2 out of the package.
2. Verify that the RMFBU2 Cache Offload Module and SuperCap2 are installed in the plastic bracket already.
3. Select a suitable cable from two cables provided for your system.
4. Carefully and lightly grasp the base of the cable. Make sure the yellow pin 1 of the cable is in alignment with the yellow mark on the board connector. Press the connector with your finger and insert with the connector parallel.

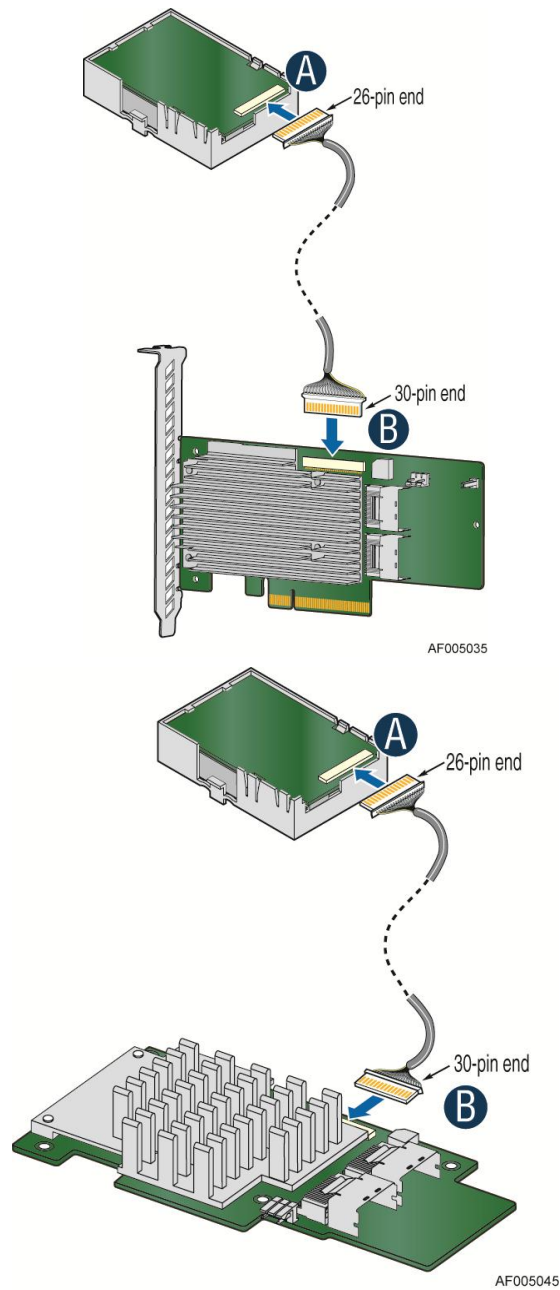


Figure 2. Connecting AXXRMFBU2 to the RAID Module

Note: Please carefully observe how the cable connectors are keyed and to avoid asserting unnecessary

force when plugging in the cable. Do not insert at an angle. Doing so will cause connector deformation or damage.

5. Secure the cable at 26-pin end with a provided Cable Twist Tie as shown in Figure 3.

Note: This step is optional depends on the chassis design. Please refer to your server chassis documentation to determine if the Cable Twist Tie is needed.

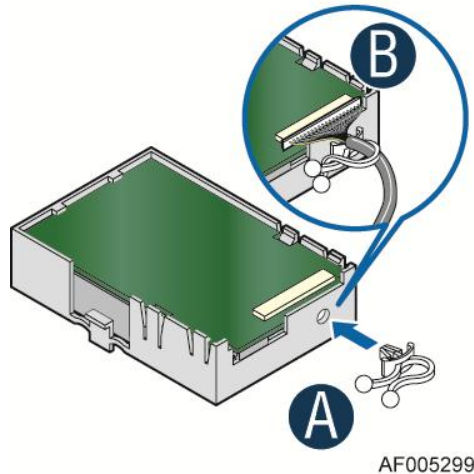


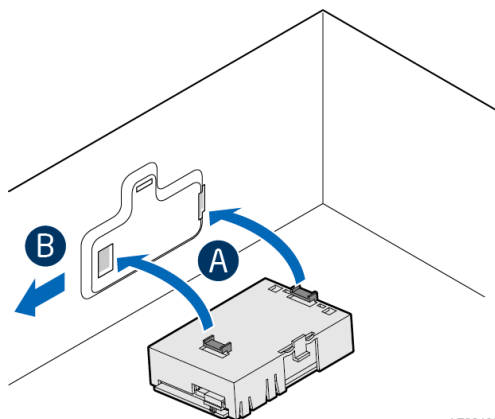
Figure 3. Installing the Cable Twist Tie

Connecting the Plastic RMFBU2 Holder to the Chassis

The Intel® RAID Maintenance Free Backup Unit AXRMFBU2 is designed for easy attachment to either an Intel® pedestal or rack mount chassis. Complete the following instructions for your server.

If you are installing this component into a third-party chassis, you must first install an attachment mechanism, such as industrial-grade Velcro*. Refer to your server chassis documentation or discuss an appropriate attachment mechanism with your server chassis manufacturer to ensure the attachment mechanism complies with the chassis requirements.

1. Locate the installation clips inside the chassis. For the location of the installation clips, see your server system documentation. Remove the Mylar* pad if there is a Mylar* pad covering the mounting hole.
2. Align the tabs on the plastic RMFBU2 holder with the clips on the chassis (See “A” in Figure 4).
3. Slide the plastic RMFBU2 holder toward the front of the system until the tabs engage with the clips in the chassis (See “B” Figure 4).



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Figure 4. Connecting the Plastic RMFBU2 Holder to the Chassis

Attaching the Connecting Cable to the Server System

Follow the appropriate set of instructions below for your server:

1. Route the cable through the cable holder on the edge of the chassis.
2. Connect the cable to the RAID module

Installing the Intel® Integrated RAID Module in the Server System

To install the Intel® Integrated RAID Module back into the server system, do the following:

Intel® Integrated RAID Module RMS25PB040, RMS25PB080, RMT3PB080

1. Align the RAID module with the PCI Express* slot. To locate an appropriate slot and for instructions on installing an add-in card, see your server system documentation.
2. Press down gently, but firmly, to ensure that the RAID module is properly seated in the slot. The bottom edge of the RAID module must be flushed with the slot.

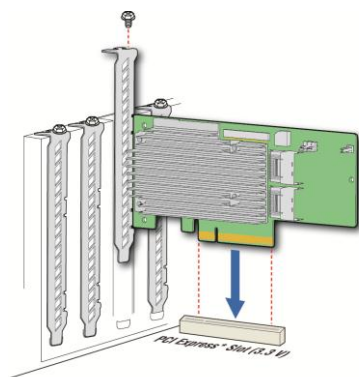


Figure 5. Seating the RAID Module

3. Connect the proper cables into the adapter using the 4-port combined end. Make sure the module and cables are properly attached and plug the cable into connector at the inside edge of the adapter.

4. Tie together the RMFBU2 Cache-offload Module cable and the data cable with a provided strap tie as shown in Figure 6.



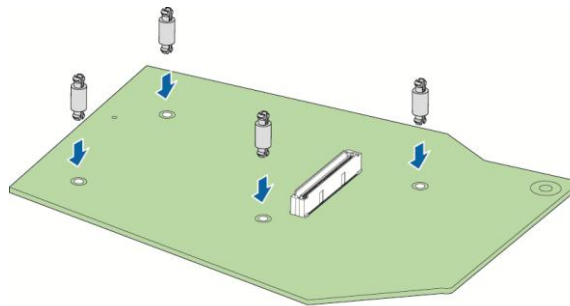
Figure 6. Tie Together the Cables with the Strp Tie

Note: Please secure the cables with the strap tie to avoid unexpected RMFBU2 Cache-offload Module cable disattaching from the RAID module during the system transportation.

5. Install the server system cover back and connect the power cords. See your server system documentation for instructions

Intel® Integrated RAID Module RMS25PB040, RMS25PB080, RMT3PB080

1. Insert the four barrel standoffs into the matching holes in the server board. To locate the matching module card slot on your server board, see your server board documentation. The Intel® Server Board S2600IP is shown for illustrative purpose. Actual standoff hole locations could be different (see Figure 7).



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Figure 7. Installing the Barrel Standoff

2. Attach the RAID to the matching server board connector, and press the module card firmly to engage the barrel standoffs installed in step 1. Press down gently but firmly to ensure that the card is properly seated in the connectors, and then insert the four pin standoffs into the barrel standoffs respectively. The Intel® RAID Module RM25PB080 is shown for illustrative purpose (see Figure 8).

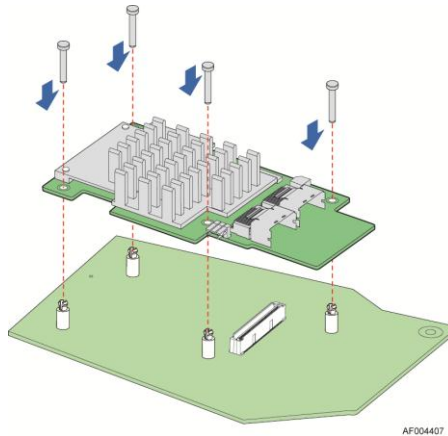


Figure 8. Installing the Intel® Integrated RAID Module

3. Connect the proper cables into the adapter using the 4-port combined end. Make sure the module and cables are properly attached and plug the cable into connector at the inside edge of the adapter.
4. Tie together the RMFBU2 Cache-offload Module cable and the data cable with a provided strap tie as shown in Figure 6.
Note: Please secure the cables with the strap tie to avoid unexpected RMFBU2 Cache-offload Module cable disattaching from the RAID module during the system transportation.
5. Install the server system cover back and connect the power cords. See your server system documentation for instructions

3 Monitoring RAID Maintenance Free Backup Unit

Multiple utilities are available to display and configure the RMFBU2 information.

Note: This chapter describes only the RMFBU2 related features of the utility programs. For complete information on these utilities, see the Intel® RAID Software User's Guide.

Monitoring the SuperCap with the Intel® RAID BIOS Configuration Utility

The Intel® RAID BIOS Console can be used to configure disk arrays and logical drives. It is independent of the operating system and can be accessed at server start up by pressing <Ctrl>+<G>.

To view the RMFBU2 information, do the following:

1. At boot, press <Ctrl> + <G> when prompted.
2. Once the Intel® RAID BIOS Console loads and the main menu is displayed, choose **Adapter Properties**.
3. Click **Next** to view the second **Adapter Properties** screen.
4. In the **Battery Backup** field at the top left of the **Adapter Properties** screen, click **Present**.
5. The **Battery Module** screen appears, as shown in Figure 9. This screen contains the following information:
 - Battery information
 - Design information
 - Capacity information
 - Properties

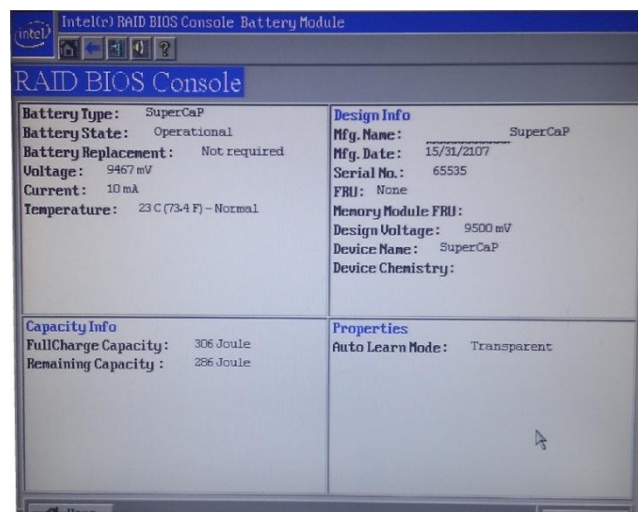


Figure 9. Monitoring the RMFBU2 with Intel® RAID BIOS Console

Note: The RMFBU2 properties are view only.

Using Intel® RAID Web Console 2

To view the status of all RMFBU2 connected to RAID modules in the server, select the Physical tab in the left panel of the Intel® RAID Web Console 2. To see the RMFBU2, select the controller. The RMFBU2 appears as the last item on the list under that module (see Figure 10). An icon (small green or red icon) appears in the left pane to indicate the RMFBU2 status. The green indicates normal operation and the red indicates the RMFBU2 has failed.

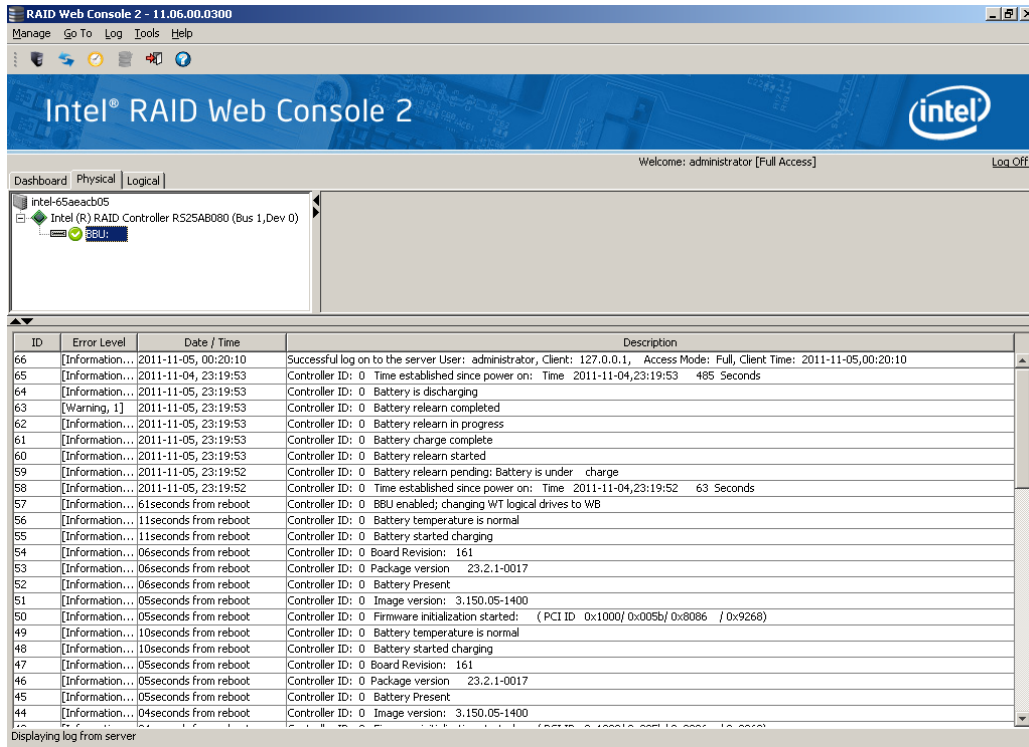


Figure 10. RMFBU2 Information in Intel® RAID Web Console 2

4 RAID Maintenance Free Backup Unit Specifications

MegaRAID CacheVault™ Technology

LSI* MegaRAID CacheVault™ flash cache protection uses NAND flash memory powered by a super-capacitor to protect data stored in the MegaRAID controller cache. This module eliminates the need for a lithium ion battery traditionally used to protect DRAM cache memory on PCI RAID controllers. The RAID controller automatically writes the data in cache to flash when a power failure occurs, while the super-capacitor keeps the current going during the process. When the power comes back, the DRAM is recovered from flash and the system goes on without loss of data. The benefits of this technology are elimination of hardware maintenance associated with LiON batteries, lower total cost of ownership over the life of the adapter, and more environmentally friendly cache protection.

Table 2. RMFBU2 Specifications

Specifications	RMFBU2
SuperCap2 Operating Environment	-40°C to 55°C
SuperCap2 Storage Temperature	-40°C to 70°C
Fast Charge Rate	500 mA
SuperCap2 Voltage	Nominal Voltage: 13.2 V
SuperCap2 Capacity	6.8 F
SuperCap2 Mechanical	65 mm x 52 mm
RMFBU2 Mechanical	87 mm x 57 mm
SuperCap2 Charge Time	Typical: Approximate 2 minutes
RMFBU2 Shelf Life	3 years
RMFBU2 Operational Life	Intel® provides a three year warranty on the Intel® RAID Maintenance Free Backup Unit AXXRMFBU2
RMFBU2 Cache-offload Module Capacity	2 GB NAND Flash
Smart Monitoring	Temperature is monitored using the I2C interface.

5 Regulatory and Compliance Information

Product Regulatory Compliance

Product Safety Compliance

The Server Board SE7210TP1-E complies with the following safety requirements:

- UL60950 – CSA 60950(USA/Canada)
- EN60950 (Europe)
- IEC60950 (International)
- CB Certificate & Report, IEC60950 (report to include all country national deviations)
- GOST R 50377-92 – Listed on one System License (Russia)
- Belarus License – Listed on System License (Belarus)
- CE - Low Voltage Directive 73/23/EEE (Europe)
- IRAM Certification (Argentina)

Product EMC Compliance – Class A Compliance

Note: Legally the product is required to comply with Class A emission requirements as it is intended for a commercial type market place. Intel targets 10db margin to Class A Limits

The Server Board SE7210TP1-E has been tested and verified to comply with the following electromagnetic compatibility (EMC) regulations when installed a compatible Intel® host system. For information on compatible host system(s) refer to Intel's Server Builder Web site or contact your local Intel representative.

- FCC /ICES-003 - Emissions (USA/Canada) Verification
- CISPR 22 – Emissions (International)
- EN55022 - Emissions (Europe)
- EN55024 - Immunity (Europe)
- CE – EMC Directive 89/336/EEC (Europe)
- AS/NZS 3548 Emissions (Australia/New Zealand)
- BSMI CNS13438 Emissions (Taiwan)
- GOST R 29216-91 Emissions - Listed on one System License (Russia)
- GOST R 50628-95 Immunity –Listed on one System License (Russia)
- Belarus License – Listed on one System License (Belarus)
- RRL MIC Notice No. 1997-41 (EMC) & 1997-42 (EMI) (Korea)





Certifications/Registrations/Declarations

- UL Certification (US/Canada)
- CE Declaration of Conformity (CENELEC Europe)
- FCC/ICES-003 Class A Attestation (USA/Canada)
- C-Tick Declaration of Conformity (Australia)
- MED Declaration of Conformity (New Zealand)
- BSMI Certification (Taiwan)
- GOST – Listed on one System License (Russia)
- Belarus – Listed on one System License (Belarus)
- RRL Certification (Korea)
- Ecology Declaration (International)

Product Regulatory Compliance Markings

This product is marked with the following Product Certification Markings:

Table 3. Product Certification Markings

Regulatory Compliance	Country	Marking
UL Mark	USA/Canada	
CE Mark	Europe	
FCC Marking (Class A)	USA	This device complies with Part 15 of the FCC Rules. Operation of this device 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. Manufactured by Intel Corporation
EMC Marking (Class A)	Canada	CANADA ICES-003 CLASS A CANADA NMB-003 CLASSE A
BSMI Marking (Class A)	Taiwan	
		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
RRL MIC Mark	Korea	

Electromagnetic Compatibility Notices

FCC (USA)

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.

For questions related to the EMC performance of this product, contact:

Intel Corporation
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124-6497
1-800-628-8686

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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. 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 to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

Only peripherals (computer input/output devices, terminals, printers, and so on) that comply with FCC Class A or B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals that are not shielded and grounded may result in interference to radio and TV reception.

Industry Canada (ICES-003)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadien des Communications.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled: “Digital Apparatus,” ICES-003 of the Canadian Department of Communications.

Europe (CE Declaration of Conformity)

This product has been tested in accordance too, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.

Taiwan Declaration of Conformity (BSMI)

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

The BSMI Certification Marking and EMC warning is located on the outside rear area of the product.

Korean Compliance (RRL)



1. 기기의 명칭(모델명) :
2. 인증번호 :
3. 인증받은 자의 상호 :
4. 제조년월일 :
5. 제조자/제조국가 :

English translation of the notice above:

1. Type of Equipment (Model Name): On License and Product
2. Certification No.: On RRL certificate. Obtain certificate from local Intel representative
3. Name of Certification Recipient: Intel Corporation
4. Date of Manufacturer: Refer to date code on product
5. Manufacturer/Nation: Intel Corporation/Refer to country of origin marked on product

Getting Help

World Wide Web

http://www.intel.com/p/en_US/support/server/

Telephone

All calls are billed US \$25.00 per incident, levied in local currency at the applicable credit card exchange rate plus applicable taxes. (Intel reserves the right to change the pricing for telephone support at any time without notice).

Before calling, fill out an “[Intel® Server Issue Report Form](#).” A sample form is provided on the following pages. However, for the fastest service, please submit your form over the Internet.

In U.S. and Canada		1-800-404-2284	
<hr/>			
In Europe			
UK	0870 6072439	Finland	9 693 79297
France	01 41 918529	Denmark	38 487077
Germany	069 9509 6099	Norway	23 1620 50
Italy	02 696 33276	Sweden	08 445 1251
Spain	91 377 8166	Holland	020 487 4562
Belgium	02 714 3182		
<hr/>			
In Asia-Pacific region			
Australia	1800 649931	Indonesia	803 65 7249
Hong Kong	852 2 844 4456	Malaysia	1 800 80 1390
Korea	822 767 2595	New Zealand	0800 444 365
China	800 820 1100 (toll-free) 8 621 33104691 (not toll-free)	Pakistan	632 63684 15 (IDD from Philippines)
Singapore	65 6213-1311	Philippines	1 800 1 651 0117
India	0006517 2 68303634 (manual toll-free. From India, you need an IDD-equipped telephone)	Thailand	1 800 631 0003
Taiwan	2 2545-1640	Vietnam	632 6368416 (IDD from Philippines)
		Myanmar	63 2 636 9796 (from Philippines)
		Cambodia	63 2 636 9797 (from Philippines)
<hr/>			
In Japan			
0120 868686 (Domestic)		81 298 47 0800 (outside country)	

In Latin America

Brazil	001-916 377 0180	Ecuador (Andimate)	Contact AT&T USA at 1 999 119. Once connected, dial 800 843 4481
Mexico	Contact AT&T USA at 001 800 462 628 4240. Once connected, dial 800 843 4481	Ecuador (Pacifictel)	Contact AT&T USA at 1 800 225 528. Once connected, dial 800 843 4481
Colombia	Contact AT&T USA at 01 800 911 0010. Once connected, dial 800 843 4481	Guatemala	Contact AT&T USA at 99 99 190. Once connected, dial 800 843 4481
Costa Rica	Contact AT&T USA at 0 800 0 114 114. Once connected, dial 800 843 4481	Venezuela	Contact AT&T USA at 0 800 2255 288. Once connected, dial 800 843 4481
Panama	Contact AT&T USA at 00 800 001 0109. Once connected, dial 800 843 4481	Argentina	Contact AT&T USA at 0-800 222 1288. Once connected, dial 800 843 4481
Chile (Easter Island)	Contact AT&T USA at 800 800 311. Once connected, dial 800 843 4481	Paraguay	001 916 377 0114
Chile (Mainland and Juan)	Contact AT&T USA at 800 225 288. Once connected, dial 800 843 4481	Peru	001 916 377 0114
Miami	1 800 621 8423	Uruguay	001 916 377 0114

For an updated support contact list, see <http://www.intel.com/support/9089.htm/>.

6 Intel® Server Issue Report Form

Date Submitted: _____
Company Name: _____
Contact Name: _____
Email Address: _____
Intel Server Product: _____
Priority (Critical, Hot, High, Low): _____

Brief Problem Description. Provide a brief description below. See the last page for space to include a detailed problem description.

Board/Chassis Information

Baseboard Revision – PBA#:	DIMM Configuration
Baseboard Serial Number:	DIMM1A MB:
CPU1 Speed/Stepping/Spec:	DIMM1A Vendor/part number:
CPU2 Speed/Stepping/Spec:	DIMM1B MB:
System BIOS Version:	DIMM1B Vendor/part number:
HSC Firmware Version:	DIMM2A MB:
Chassis Model	DIMM2A Vendor/part number:
<input type="checkbox"/> Intel SC5200 Base	DIMM2B MB:
<input type="checkbox"/> Intel SC5200 Base Redundant Power	DIMM2B Vendor/part number:
<input type="checkbox"/> Intel SC5250-E	
<input type="checkbox"/> Intel SR1350-E	
<input type="checkbox"/> Other (Vendor/Model):	

Operating System Information

Operating System _____

Version _____

Service Pack _____

Peripheral Information

Check each box below that is used, and provide the requested information.

Peripheral	Card Or Peripheral Description	Driver Revision	IRQ #	I/O Base Address	FW Rev#
P64 Segment C (PCI-X 64/133)					
<input type="checkbox"/>	PCI Slot 1				
<input type="checkbox"/>	PCI Slot 2				
P64 Segment B (PCI-X 64/100)					
<input type="checkbox"/>	PCI Slot 3				
<input type="checkbox"/>	PCI Slot 4				
P32 Segment A (PCI 32/33)					
<input type="checkbox"/>	PCI Slot 5				
<input type="checkbox"/>	PCI Slot 6				
Video					
<input type="checkbox"/>	On-Board Video				
<input type="checkbox"/>	Add-in Video				
NIC					
<input type="checkbox"/>	On-Board NIC1 (10/100 Mb)				
<input type="checkbox"/>	On-Board NIC2 (1.0 Gb)				

Hard Drive Information:

IDE # of drives installed: _____
Make/Model/Firmware Revision _____

SCSI # of drives installed: _____
Make/Model/Firmware Revision _____

SATA # of drives installed: _____
Make/Model/Firmware Revision _____

