

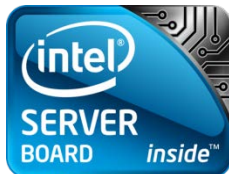


Monthly Specification Update

Intel® Server Board S2400BB

Intel® Server System R1000BB Product Family

Intel® Server System R2000BB Product Family



July 2014

Revision History

Date	Modifications
November 2012	Initial release.
December 2012	Updated the errata list and document change list.
January 2013	No update.
February 2013	No update.
March 2013	Added Errata 13; updated errata 10; updated document changes.
January 2014	Added Errata 14, 15, 16, 17, 18, and 19; updated Errata 2, 4, and 7.
July 2014	Added Errata 20.

Disclaimers

The Monthly Specification Update Server System may contain design defects or errors known as errata that may cause the product to deviate from the published specifications. Current characterized errata are documented in this Specification Update.

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Preface

This document serves as an update to content and specifications provided in the following documents:

- *Intel® Server Board S2400BB Technical Product Specification*
- *Intel® Server System R1000BB Product Family Technical Product Specification*
- *Intel® Server System R2000BB Product Family Technical Product Specification*

It is intended for system manufacturers and software developers of applications, operating systems, or tools. It provides specification changes, specification clarifications, errata, and document changes.

Nomenclature

- **Specification Changes** are modifications to the current published specifications for Intel® Server Boards and/or Intel® Server Systems. These changes will be incorporated in the next release of the specified document.
- **Specification Clarifications** describe a specification in greater detail or further highlight a specification's impact to a complex design. These clarifications will be incorporated in the next release of the specified document.
- **Documentation Changes** include typos, errors, or omissions from the current published documentation. These changes will be incorporated in the next release of the specified document.
- **Errata** are design defects or functional deviations of a current published specification. Errata may cause the server board or server system behavior to deviate from published specifications. Hardware and software designed to be used with any given processor stepping must assume that all errata documented for that processor stepping are present on all devices.

Product Scope

The following server boards, BIOS, and components are covered by this update.

Product Code	Baseboard PBA Revision	BIOS Revision	BMC Revision	FRU/SDR Revision	ME Revision
S2400BB4	G27007-350	01.03.002	1.10.3560	1.02	02.01.05.107

Summary Tables of Changes

The following tables provide an overview of known errata and known document changes that apply to the specified Intel® Server Products. The tables use the following notations:

Doc: Intel intends to update the appropriate documentation in a future revision.

Fix: Intel intends to fix this erratum in the future.

Fixed: This erratum has been previously fixed.

No Fix: There are no plans to fix this erratum.

Shaded: This erratum is either new or has been modified from the previous specification update.

Table 1. Errata Summary

No.	Plans	Description of Errata
1.	Fix	Linux* operating systems are not supported in RSTe mode.
2.	No Fix	UEFI operating system installation is not supported in ESRT2 mode.
3.	Fixed	RSTe GUI installation may fail if there are no devices attached to any on-board AHCI ports.
4.	Fixed	The hard drives connected through a SAS expander cannot be detected in legacy mode.
5.	Fixed	The on-board VGA cannot be set to the highest resolution (1920x1080 and higher).
6.	Fix	The hard drive locate LED may not instantly respond to the locate command if the backplane is connected through a SAS expander to a RAID controller.
7.	Fixed	The Memory Throttling sensor status will stay "Critical" after triggered on the Integrated BMC Web Console Sensor Readings page.
8.	Fixed	WOL (Wake on LAN) may not function for Red Hat* Linux 6.2 64bit OS.
9.	Fixed	The POST Code Diagnostic LEDs may continue to display a status after POST has completed.
10.	Fixed	The system only reports the first occurrence of power redundancy lost events.
11.	Fix	No internal SSD support on current shipping 2U server system SKUs.
12.	Fix	Microsoft Windows 2003* x86 installation fails in pass-through mode of the SCU controller.
13.	Fixed	The Intel® Server Systems configured with an Intel® FDR InfiniBand* ConnectX*-3 I/O Module may not comply with FCC regulations in the United States and Canada.
14.	Fix	The PXE boot and iSCSI boot settings may not be saved after reboot.
15.	Fixed	The Intel® Xeon Phi™ Coprocessor PCI Express* Card Status Sensor may show "Unknown".
16.	Fix	The Intel® Xeon Phi™ Coprocessor PCI Express* Card sensor numbering may not be consistent with riser slot numbering.
17.	Fixed	The Activity/Link LED of the Intel® I/O Expansion Modules may not be solid green.
18.	Fixed	The Intel® FDR InfiniBand* ConnectX*-3 I/O Module AX2FDRIBIOM port 2 may have the interconnect problem with Mellanox* 1m FDR or 7m SFP+ passive copper cables.
19.	Fixed	The reported processor frequency is lower than expected when the BIOS setup option EIST is disabled and the system is also in idle mode.
20.	Fix	The BMC 0121r6038 will cause fan noise.

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Table 2. Documentation Changes

No.	Plans	Description of Documentation Change	Document Name
1.	Fix	I/O Module Support correction	Intel® Server S2400BB TPS Rev 1.0
2.	Fixed	POST Progress Code Table correction	Intel® Server S2400BB TPS Rev 1.0 Intel® Server System R1000BB TPS Rev 1.1 Intel® Server System R2000BB TPS Rev 1.1
3.	Fixed	2U system Internal fixed mount SSD support change	Intel® Server System R2000BB TPS Rev. 1.1

The following sections provide in-depth descriptions of each erratum/documentation change indicated in the tables above. The errata and documentation change numbers referenced in the following sections correspond to the numbers in the tables above.

Errata

1. Linux* operating systems are not supported in RSTe mode

Problem	Intel® RSTe mode is not supported on Red Hat* Linux and SUSE* Linux.
Implication	Users may not be able to install Red Hat* Linux and SUSE* Linux in Intel® RSTe mode on the Intel® C600 Series Chipset based Server Boards.
Status	This issue may be fixed in a future driver or BIOS release.
Workaround	None.

2. UEFI operating system installation is not supported in ESRT2 mode

Problem	UEFI OS installation of Microsoft Windows*, Red Hat* Linux, or SUSE* Linux may fail on the AHCI or SCU controller when “EFI Optimized Boot” and “Use Legacy Video for EFI OS” are both enabled.
Implication	Users may not be able to install UEFI OS in ESRT2 mode on the Intel® C600 Series Chipset based Server Boards.
Status	Will not fix.
Workaround	None.

3. RSTe GUI installation may fail if there are no devices attached to any on-board AHCI ports

Problem	When Microsoft Windows 2008* R2 is installed on the SCU ports, the installation of RSTe drivers and the Graphic User Interface (GUI) in Windows 2008* R2 will fail, if the AHCI controller is enabled while no device is attached to the AHCI SATA ports.
Implication	Users may not be able to install RSTe GUI with mentioned configuration when the AHCI controller is enabled and no devices are attached to the AHCI SATA ports.
Status	This issue is fixed in BIOS 01.03.0002 and later releases.
Workaround	Either plug a SATA device into one of the AHCI SATA ports, or disable the on-board AHCI controller in the BIOS.

4. The hard drives connected through a SAS expander cannot be detected in legacy mode

Problem	If the hard drives are connected through an expander to the SCU ports and configured in RSTe mode, the hard drives cannot be detected by the system in legacy mode (default BIOS setting).
Implication	Users cannot use the hard drives connected through an expander as the boot devices to install OS. But users can install OS to other hard drives that are not connected through an expander and load RSTe driver to make the hard drives connected through an expander visible to OS. Or users can change Boot Options -> EFI Optimized Boot to "Enabled" in BIOS Setup so that the hard drives connected through an expander can be detected by the system.
Status	This issue is fixed in BIOS 01.08.0003 and later releases.
Workaround	None.

5. The on-board VGA cannot be set to the highest resolution (1920x1080 and higher)

Problem	The Graphics ID register of the on-board video controller is set incorrectly.
Implication	The video cannot be set to the highest resolutions listed here: [1920x1080, High 256 Color, 60 Hertz] [1920x1200, High 256 Color, 60 Hertz] [1920x1080, High Color (16bit), 60 Hertz] [1920x1200, High Color (16bit), 60 Hertz]
Status	This issue is fixed in BMC Firmware 01.16.4010 and later releases.
Workaround	None.

6. The hard drive locate LED may not instantly respond to the locate command if the backplane is connected through a SAS expander to a RAID controller

Problem	If the backplane is connected through a SAS expander to a RAID controller, the hard drive locate LED may not instantly respond to the locate command from the RAID controller. The LED may blink after up to two minutes.
Implication	The symptom will not happen if the backplane is directly connected to the RAID controller. The root cause has been identified in the motherboard BMC.
Status	This issue may be fixed in a future BMC release.
Workaround	None.

7. The Memory Throttling sensor status will stay “Critical” after triggered on the Integrated BMC Web Console Sensor Readings page

Problem	When Memory Throttling is triggered, the Memory “P1 MTT and/or P2 MTT” sensor status will stay in “Critical” status in the Integrated BMC Web Console even after throttling has stopped.
Implication	Users may observe Memory “P1 MTT and/or P2 MTT” status as “Critical” even when there is no throttling. No functional impact on the system.
Status	This issue is fixed in ME 03.00.02.203 and later releases.
Workaround	Perform an AC cycle or reset the ME through IPMI to reset the MTT sensor status.

8. WOL (Wake on LAN) may not function for Red Hat* Linux 6.2 64bit OS

Problem	With the Intel® LAN driver version 17.1, WOL (Wake on LAN) may not function for Red Hat* Linux 6.2 64bit OS.
Implication	Users may not be able to wake the system through the on-board NIC port.
Status	This issue is fixed in LAN driver package 17.4 and later releases.
Workaround	None.

9. The POST Code Diagnostic LEDs may continue to display a status after POST has completed

Problem	All POST Code Diagnostic LEDs should be in an off state after the POST process has completed. Instead, the LEDs may continue to display status code changes after the operating system boot process has begun. The codes observed could change at any time after POST and have any value.
Implication	The POST Code Diagnostic LEDs may not be all off after POST has completed.
Status	This issue is fixed in BMC firmware 01.17.4151 and later releases.
Workaround	None. All POST Code Diagnostic LED states displayed after the OS begins to boot should be ignored because they do not reflect an actual platform boot status.

10. The system only reports the first occurrence of power redundancy lost events

Problem	The integrated platform management subsystem will report only the first occurrence of a power redundancy loss event. Any additional power
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redundancy loss events that may occur after the initial event, will not be reported unless an AC cycle is applied.

Implication With the first power redundancy lost event detected, the status LED will change states to flashing green and the system event log will display the event as shown below:

Power Unit, Pwr Unit Redund (#0x2)
Informational event: Pwr Unit Redund reports full redundancy has been lost.
Integrated BMC – LUN#0 (Channel#0)

After hot swapping the faulty power supply, which would change the state of the system back to normal (the Status LED goes back to solid green), the system will NOT report any further power redundancy lost events until an AC cycle of the system is performed.

Status This issue is fixed in BMC firmware 01.17.4151 and later releases.

Workaround None.

11. No internal SSD support on current shipping 2U server system SKUs

Problem First production Intel® Server System R2000BB product family SKUs that include an air duct with mounting locations for two SSDs do not pass the unpackaged shock testing when one or two Solid State Devices (SSDs) are mounted to the air duct.

Implication With one or two SSDs mounted to the air duct, the air duct may dislodge and shift if the system is dropped or suffers a sudden shock. An air duct that is not seated properly may not allow for proper airflow over critical components in the system causing them to overheat.

Status This issue will be fixed with a design change to the air duct latching mechanism and limiting the internal mounted SSD support to one device. The new air duct design will be integrated into all new Intel® Server System R2000BB product family SKUs assembled in early 2013.

Workaround None.

12. Microsoft Windows 2003* x86 installation fails in pass-through mode of the SCU controller

Problem An RSTe driver issue exists that an installation error will occur when attempting to install Microsoft Windows Server 2003* x86 when the on-board SCU ports are configured to support RSTe pass-through mode.

Implication Users may not be able to install Microsoft Windows Server 2003* x86 with the on-board SCU ports configured as RSTe pass-through mode.

Status This issue may be fixed in a future RSTe driver release.

Workaround Install Microsoft Windows Server 2003* x64.

13. The Intel® Server Systems configured with an Intel® FDR InfiniBand® ConnectX®-3 I/O Module may not comply with FCC regulations in the United States and Canada

Problem Customers looking to operate an Intel® Server System configured with an Intel® FDR InfiniBand® ConnectX®-3 I/O Module (AXX1FDRIBIOM or AXX2FDRIBIOM) in the United States and Canada may not comply with Part 15 of the Federal Communications Commission (FCC) and Canadian regulatory requirements when configured using copper based infiniband cables.

Implication This issue does not impact the specified system configuration when users operate the server in countries other than the United States and Canada.

Status This issue is fixed in Mellanox® InfiniBand® ConnectX®-3 firmware 2.11.1308 and later releases.

Workaround In order to comply with regulatory requirements of the United States and Canada, the specified system configuration can be operated when copper based infiniband cables are substituted with optical based infiniband cables.

14. The PXE boot and iSCSI boot settings may not be saved after reboot

Problem The PXE boot and iSCSI boot settings may not be saved after reboot on the Intel® Server Board S2400BB with the following PBA (Printed Board Assembly) number: G27007-350. The Intel® Server Board S2400BB with other PBA numbers is not impacted. The PBA number can be found on the label attached to the server board or in the server board FRU (Field Replaceable Unit) information.

Implication The saved settings in the following two usage models may change back to the factory defaults after reboot:

- 1) PXE Boot: When the PXE 1GbE Option ROM is set to “Enabled” (by default) in **BIOS Setup -> Advanced -> NIC Configuration**, the Setup Menu Wait Time can be changed from 2 seconds (by default) to other values in the Intel® Boot Agent GE Setup Menu during system boot, and the settings should be saved after reboot.
- 2) iSCSI Boot: When the iSCSI 1GbE Option ROM is set to “Enabled” in **BIOS Setup -> Advanced -> NIC Configuration**, the iSCSI Boot Configuration can be changed from dynamic IP (by default) to static IP in the Intel® iSCSI Remote Boot Setup Menu during system boot, and the settings should be saved after reboot.

Status This issue may be fixed in a future utility release.

Workaround None.

15. The Intel® Xeon Phi™ Coprocessor PCI Express* Card Status Sensor may show “Unknown”

Problem When only one Intel® Xeon Phi™ Coprocessor PCI Express* Card (MIC card) is installed in the server system, the card status sensor “MIC 1 Status” or “MIC 2 Status” may show “Unknown” in the Intel® Integrated BMC Web Console.

Implication Users may not get the correct MIC status in the Intel® Integrated BMC Web Console. There is no functional impact on the server system. This issue will not happen when two Intel® Xeon Phi™ Coprocessor PCI Express* Cards are installed.

Status This issue is fixed in BMC 01.19.4926 and later releases.

Workaround None.

16. The Intel® Xeon Phi™ Coprocessor PCI Express* Card sensor numbering may not be consistent with riser slot numbering

Problem The Intel® Xeon Phi™ Coprocessor PCI Express* Card (MIC card) sensor numbering may not be consistent with riser slot numbering on the server board. When an Intel® Xeon Phi™ Coprocessor PCI Express* Card is installed in the server system, in the Intel® Integrated BMC Web Console, the card sensor may show “MIC 2 Status” and “MIC 2 Margin” if the card is installed on “RISER SLOT_1” and “MIC 1 Status” and “MIC 1 Margin” if the card is installed on “RISER SLOT_2”.

Implication Users need to read MIC 2 sensors for a card installed on “RISER SLOT_1” and read MIC 1 sensors for a card installed on “RISER SLOT_2”. There is no functional impact on the server system.

Status This issue will be fixed in a future BMC release.

Workaround None.

17. The Activity/Link LED of the Intel® I/O Expansion Modules may not be solid green

Problem The Activity/Link LED (on the left side) of the following Intel® I/O Expansion Modules may not be solid green when there is active connection:

Dual Port Intel® X540 10GbE I/O Module AXX10GBTWLIOM and AXX10GBTWLHW
Dual Port Intel® 82599 10GbE I/O Module AXX10GBNIAIOM

Implication	The LED may keep off instead of solid green. Users cannot figure out whether an active connection is established through LED behavior.
Status	This issue is fixed with new EEPROM cut in at the factory. See the PCN112163 for more details.
Workaround	None.

18. The Intel® FDR InfiniBand® ConnectX®-3 I/O Module AXX2FDRIBIOM port 2 may have the interconnect problem with Mellanox® 1m FDR or 7m SFP+ passive copper cables

Problem	The Intel® FDR InfiniBand® ConnectX®-3 I/O Module AXX2FDRIBIOM port 2 may have the interconnect problem when used with Mellanox® 1-meter FDR or 7-meter SFP+ passive copper cables.
Implication	When used with Mellanox® 1m FDR or 7m SFP+ passive copper cables, port 2 of the module may not be able to establish a successful connection for signal transmission. This issue does not impact other cables. This issue does not impact the Intel® FDR InfiniBand® ConnectX®-3 I/O Module AXX1FDRIBIOM.
Status	This issue is fixed in Mellanox® InfiniBand® ConnectX®-3 firmware 2.11.1308 and later releases.
Workaround	None.

19. The reported processor frequency is lower than expected when the BIOS setup option EIST is disabled and the system is also in idle mode

Problem	When the system is in idle mode during OS runtime and EIST is disabled in BIOS setup, the reported processor speed may be lower than the expected frequency.
Implication	EIST may function incorrectly.
Status	This issue is fixed.
Workaround	None.

20. The BMC 0121r6038 will cause fan noise

Problem	The BMC 0121r6038 will cause fan noise.
Implication	The fan speed may increase.
Status	This issue will be fixed in 2014 Q3 BMC release.
Workaround	Downgrade to a previous BMC version.

Documentation Changes

1. I/O Module Support correction

Document	Intel® Server Board S2400BB Technical Product Specification Rev. 1.0
Section	I/O Module Support
Issue	The I/O module attaches to a high density 80-pin connector on the server board (J2B1) labeled “IO_Module” and is supported by x8 PCIe Gen3 signals from the IIO module of the CPU #1 processor.
Change	The I/O module attaches to a high density 80-pin connector on the server board (J2B1) labeled “IO_Module” and is supported by x8 PCIe Gen3 signals from the IIO module of the CPU #2 processor.
Status	This correction will be implemented in a future update of the document.

2. POST Progress Code Table correction

Document	Intel® Server Board S2400BB Technical Product Specification Rev. 1.0 Intel® Server System R1000BB Technical Product Specification Rev. 1.1 Intel® Server System R2000BB Technical Product Specification Rev. 1.1
Section	POST Code Diagnostic LED Decoder table
Issue	POST progress codes for E0h thru E3h were incorrectly displayed in the table. The upper nibble bits incorrectly showed 1101.
Change	The upper nibble bits for POST progress codes E0h thru E3h will be changed to 1110.
Status	Fixed.

3. 2U system Internal fixed mount SSD support change

Document	Intel® Server System R2000BB Product Family Technical Product Specification Rev. 1.1
Section	Internal Fixed mount SSD support
Issue	Change in documented supported feature. See Errata #11.
Change	The document will be changed to reflect support for one SSD instead of two.
Status	Fixed.