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R440FX UP Server Baseboard Specification Update

Release Date: July, 1998

Order Number: 282977-008

The R440FX UP Server Baseboard may contain design defects or errors known as errata that may cause the product to deviate from published specifications. Current characterized errata are documented in this Specification Update.

CONTENTS

REVISION HISTORY

Date of Revision	Description
March, 1997	This document is the first Specification Update for the Intel R440FX UP Server Baseboard.
April, 1997	Added erratum 6, 7, 8, and 9. Updated general information.
May, 1997	Updated erratum 6 and 8.
June, 1997	Updated erratum 9.
July, 1997	Corrections and additions to General Information. Corrected incorrect Product Codes.
August, 1997	No corrections.
September, 1997	Corrections and additions to General Information. Corrected incorrect Product codes add new Product Codes. Corrected revision history.
October, 1997	Erratum 6 Fixed. Additions to General Information.
November, 1997	No corrections.
December, 1997	Updated General Information.
January, 1998	No corrections or changes.
February, 1998	No corrections or changes.
March, 1998	No corrections or changes.
April, 1998	No corrections or changes.
May, 1998	No corrections or changes.
June, 1998	No corrections or changes.
July, 1998	No corrections or changes.

PREFACE

This document is an update to the specifications contained in the *R440FX UP Server Baseboard Technical Product Specification* (Order Number 282958). It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools. It will contain Specification Changes, Specification Clarifications, Errata, and Document Changes.

Refer to the *Pentium® Pro Processor Specification Update* (Order Number 282958) for specification updates concerning the PentiumPro processor. Items contained in the *Pentium Pro Processor Specification Update* that either do not apply to the R440FX UP Server Baseboard or have been worked around are noted in this document. Otherwise, it should be assumed that any processor errata for a given stepping are applicable to the Printed Board Assembly (PBA) revisions(s) associated with that stepping.

Refer to the *Intel 440FX PCIset Specification Update* for specification updates concerning the Intel 440FX PCIset. Items contained in the *Intel 440FX PCIset Specification Update* that either do not apply to the R440FX UP Server Baseboard or have been worked around are noted in this document. Otherwise, it should be assumed that any PCIset errata for a given stepping are applicable to the Printed Board Assembly (PBA) revisions(s) associated with that stepping.

Refer to the *Intel Columbus II Chassis Specification update* (Order Number 681582) for specification updates concerning the Columbus II Chassis.

Nomenclature

Specification Changes are modifications to the current published specifications. These changes will be incorporated in the next release of the specifications.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in the next release of the specifications.

Documentation Changes include typos, errors, or omissions from the current published specifications. These changes will be incorporated in the next release of the specifications.

Erratum are design defects or errors. These may cause the R440FX UP Server Baseboard's behavior to deviate from published specifications. Hardware and software designed for with any given stepping must assume that all errata documented for that stepping are present on all devices.

**Specification Update for the
R440FX UP Server Baseboard**

GENERAL INFORMATION

Identification Information

Below are the specific boards, BIOS, and components covered by this update

Board Fab #	Product Code	PBA #	AA #	BIOS	SCU	440FX Stepping
2.1	BROS06A	656455-201	656833-002	1.00.01.DM0	3.50 Ovl 1.00	A1
	BROS06APP	656455-202	656833-004			
		656455-203	656833-005			
		656455-204	656833-006			
	BROS06A	656455-204	664653-001			
	BROS06A	656455-221	664653-002			
		656455-223	664653-004			
2.1	BROS14A	656455-202	660942-002			
		656455-203	660942-003			
		656455-203	660942-004			
		656455-204				
		656455-221	660942-005			
		656455-223	660942-007			
2.2	BROS06A	656455-222	664653-003			
		656455-224	664653-005			
		656455-225	664653-006			
2.2	BROS14A	656455-222	660942-006			
		656455-225	660942-009			
		656455-226	660942-010			
2.2	PBROS14EMI	669357-003	669356-003	1.00.02.DM0	3.50 Ovl 1.00	B1
2.2	SROSCOLSTD05A	656455-226	660942-010			
2.2	SROSCOLJPN05A	656455-226	668521-005			

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Board Fab #	Product Code	PBA #	AA #	BIOS	SCU	440FX Stepping
2.3	BROS06APP	670114-004	670164-005	1.00.02.DM0	3.51 Ovl 1.01	B1
			660942-101			
			664653-101			
		656455-227	670050-001			
			670050-002			
2.3	BROS06A	656455-225	664653-007			B1
		656455-226	664653-008	1.00.03.DM0	3.6 Ovl 1.10	B1
		656455-227	664653-101	1.00.03.DM0	3.6 Ovl 1.10	B1
2.3	BROS14A	656455-226	660942-010	1.00.03.DM0	3.6 Ovl 1.10	B1
2.3	BROS14EMI	670022-001	670050-001	1.00.03.DM0	3.6 Ovl 1.10	B1
		670022-002	670050-002			
2.3	SVRBB06	656455-225	660942-009	1.00.03.DM0	3.6 Ovl 1.10	B1
2.3	SROSCOLSTD05A	656455-227	664653-101	1.00.03.DM0	3.6 Ovl 1.10	B1
2.3	BROS14AS	656455-227	664653-101	1.00.03.DM0	3.6 Ovl 1.10	B1
2.3	BROS14A	656455-228	660942-102	1.00.04.DM0	3.7 SCU/OVL1.2	B1
2.3	BROS06A	656455-228	664653-102	1.00.04.DM0	3.7 SCU/OVL1.2	B1
2.3	ROSBRDKIT	656455-228	660942-102	1.00.04.DM0	3.7 SCU/OVL1.2	B1
2.3	SROSCOLSTDO5A	656455-228	660942-102	1.00.04.DM0	3.7 SCU/OVL1.2	B1
2.3	SROSGALJPN03A	656455-228	660942-102	1.00.04.DM0	3.7 SCU/OVL1.2	B1
2.3	SROSGALSTD05A	656455-229	660942-103	1.00.05.DM0	3.7 SCU/OVL1.2	B1
2.3	SROSCOLJPN17A	656455-229	660942-103	1.00.05.DM0	3.7 SCU/OVL1.2	B1
2.3	BROS14A	656455-229	660942-103	1.00.05.DM0	3.7 SCU/OVL1.2	B1
2.3	BROS06A	656455-229	664653-103	1.00.05.DM0	3.7 SCU/OVL1.2	B1
2.3	ROSDRDKIT	656455-229	660942-103	1.00.05.DM0	3.7 SCU/OVL1.2	B1

ERRATA

The following table indicates the Errata, Specification Changes, Specification Clarifications, and documentation changes which apply to the R440FX UP Server baseboard Intel intends to fix some of the errata in the future, and to account for the other outstanding issues through documentation or specification changes as noted. This table uses the following notations:

CODES USED IN SUMMARY TABLE

Doc:	Document change or update that will be implemented.
Fix:	This erratum is intended to be fixed in a future revision of the hardware or software associated with the R440FX UP Server baseboard
Fixed:	This erratum has been previously fixed.
NoFix:	There are no plans to fix this erratum.
Shaded:	This erratum is either new or modified from the previous version of the document.

#	Status	Summary
1	Doc	SCSI termination voltage sensing wrong.
2	Doc	Unable to determine from the Intelligent MultiBus when BIOS has finished configuring system.
3	Doc	Multiple SMI's created from periodic SMI command.
4	Fix	BMC generates false temperature events while SMIs injected from I²C bus.
5	Fix	Always left in SMM transfer stream after boot.
6	Fixed	Microsoft Windows NT* 4.0 Workstation (Japanese version) will not boot from SCSI CD-ROM.
7	Fix	If Console Redirection is enabled in BIOS, MS-DOS* 6.X installation hangs.
8	Fix	Slot information not being saved in Autoexec.ncf under NetWare* 3.12 and 4.10.

1. The SCSI termination voltage is not monitored correctly.

Problem: The SCSI termination voltage driven from the Dallas 21S07AE* terminator device is not within the Intelligent Management Interface specification (IMB). This causes the system management firmware to not be able to monitor SCSI termination voltage values properly, since this voltage is sensed by an A to D converter within the system management Baseboard Management Controller. Spec." is not specific. The reference 2.85V +/- 60mV only applies when the SCSI bus is being actively driven. If the bus is idle, it may be allowed to float. Therefore, there seems to be no valid upper fatal.

Implication: Causes the system management firmware to not be able to monitor SCSI termination voltage values properly.

Workaround: None identified.

Status: A clarification to the specification was made. Only lower thresholds will be monitored.

2. Unable to determine from IMB when BIOS has finished configuring system.

Problem: Server management IMB commands can be issued as soon as power is applied to the system. The BIOS may not be finished setting up the server management hardware and the IMB configuration settings that have been changed may get overwritten. For example, you can disable SMI to NMI during the POST but this setting will be reset by the BIOS if issued to soon.

Implication: The wrong commands may be issued to the system at startup causing the system to hang

Workaround: None identified.

Status: A clarification to the specification was made. There is no benefit to allowing this operation.

3. Multiple SMIs created from periodic Server Management Interrupt command.

Problem: When periodic SMI is setup for 1 SMI/sec, two to five SMIs are received per second on the R440FX system.

Implication: System performance may decrease.

Workaround: Leave memory scrubbing disabled. This is a default setting.

Status: A clarification to the specification was made stating that this procedure is correct.

4. The Baseboard Management Controller (BMC) generates false temperature readings while Server Management Interrupt's injected from I^2C bus.

Problem: When the BMC cannot access the temperature sensor, it generates an event message with a max negative value as the temperature reading.

Implication: The system reports incorrect temperature readings.

Workaround: None identified.

Status: This issue is being investigated.

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5. The R440FX UP Server is left in Server Management Mode transfer stream after booting.

Problem: After a Power-ON reset or a warm boot, the system is left with the SMM transfer stream active when the first user program is executed.

Implication: SMM transfer stream remains active after booting. There is no data corruption or hang condition.

Workaround: In the event this error occurs, the user is required to press the reset button again.

Status: This issue is under further investigation. It may be pursued as a possible enhancement feature.

6. Windows NT 4.0 Workstation (Japanese Version) will not boot from SCSI CD-ROM.

Problem: Microsoft Windows NT 4.0 workstation/J will not boot if connected to the onboard SCSI controller. Discover int 13 call that was accidentally writing in NT workstation's memory instead of the BIOS data area.

Implication: Customers will be unable to boot system from this version of software.

Workaround: New version of BIOS will be required.

Status: BIOS version 1.00.05.DM0 resolved this issue.

7. If Console Redirection is enabled in BIOS, MS-DOS 6.X installation hangs.

Problem: If Console Redirection is enabled in BIOS, MS-DOS 6.X installation halts while calling the Keyb.com program.

Implication: Customers will be unable to complete installation of MS-DOS 6.X.

Workaround: Disable console redirection while installing MS-DOS 6.X. This is the default system setting.

Remove KEYB.COM US line from the autoexec.bat file.

Status: This issue is considered closed.

8. Slot information not being saved in Autoexec.ncf under NetWare 3.12 and 4.10

Problem: During the installation of Netware 3.12 or 4.10, the slot # information for LAN and SCSI devices are not being save to the AUTOEXEC.NCF file.

Implication: Netware autoexec.ncf file will have incorrect slot # information.

Workaround: A manual workaround has been written. Novell is working on an automated version.

Status: This has been determined to be a Novell issue.