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M440LX DP Server Baseboard Specification Update

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The M440LX DP 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

Specification Update for the M440LX DP Server Baseboard

REVISION HISTORY

Date of Revision	Description
January, 1998	This document is the first Specification Update for the Intel M440LX DP Server Baseboard.
February, 1998	No changes or updates.
March, 1998	Monthly update to Specification Update.
April, 1998	No changes or updates.
June, 1998	Monthly update to Specification Update.
October, 1998	Updated the General Information section.
November, 1998	Monthly update to the Specification Update
December, 1998	Monthly update to the Specification Update

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PREFACE

This document is an update to the specifications contained in the *M440LX DP Server Baseboard Technical Product Specification* (Order Number 282994). 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^â II Processor Specification Update* (Order Number 243337) for specification updates concerning the Pentium II processor. Items contained in the Pentium II Processor Specification Update that either do not apply to the M440LX DP 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 82443LX PAC AGPset Specification Update* (Order Number 297655) and the *Intel 82371AB (PIIX4) Specification Update* (Order Number 297738) for specification updates concerning the Intel 82440LX AGPset. Items contained in these Specification Updates that either do not apply to the M440LX DP 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.

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.

Errata are design defects or errors. These may cause the M440LX DP Server's behavior to deviate from published specifications. Hardware and software designed to be used with any given stepping must assume that all errata documented for that stepping are present on all devices.

**Specification Update for the
M440LX DP Server Baseboard**

GENERAL INFORMATION

Identification Information

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

Baseboard Fab #	Baseboard PBA #	BIOS	SCU	Processor Stepping (Pentium® II processor)	Processor Stepping (Pentium® II Xeon™ processor)	Chipset Stepping (82440BX)
4.0	661880-406	Release 3	2.8, OVL 1.00	C0	N/A	A3
4.0	661880-407	Release 3	2.8, OVL 1.00	C0	N/A	A3
4.0	661880-408	Release 4	2.8, OVL 1.2	C1	N/A	A3
4.0	661880-409	Release 4	2.8, OVL 1.2	C1	N/A	A3
4.0	661880-410	Release 5	2.8, OVL 1.2	C1	A2	A3
4.0	661880-410	Release 6	2.8, OVL 1.2	C1	B0	A3
4.0	661880-411	Release 6	2.8, OVL 1.2	C1	B0	A3

3

ERRATA

The following table indicates the Errata, Specification Changes, Specification Clarifications, and documentation changes which apply to the M440LX DP 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 M440LX DP Server.
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	NoFix	Discrepancies found between BIOS and the BIOS EPS.
2	NoFix	Discrepancies found between BIOS defaults and BIOS EPS identified defaults.
3	NoFix	CD-ROM option in boot order does not remain ordered.
4	NoFix	Windows NT* Server 4.0 fails to boot with Hauppauge WIN/TV installed.
5	NoFix	Re-mapping on memory errors may not work for SDRAMs.
6	NoFix	Clock speed setting shown in setup incorrect if F9 is pressed.
7	NoFix	3COM 3C509 NIC installed to the secondary PCI bus causes system hang.
8	NoFix	Windows NT 4.0 does not see the keyboard when mouse is not attached.
9	NoFix	Write Protect Boot Sector BIOS setting does not function properly.
10	NoFix	SM bus information on EDO Memory Module incorrect
11	NoFix	UnixWare* 2.1(2) doesn't install to Embedded AMI Mega RAID*
12	NoFix	All Video Cards Must be installed on Primary PCI Bus.
13		
14		

1.   M440LX DP Server platform discrepancies between beta BIOS 1.00.01 and BIOS EPS.

PROBLEM: The following discrepancies exist between the functional beta BIOS 1.00.01 and the BIOS External Product Specification (EPS) for the M440LX DP Server Platform:

1: *Primary IDE Master/Slave*: Fields do not have selectable configuration menus.

2: Main Subsystem: Primary IDE Master; CD displays four fields while Main: Primary IDE Slave: Type: CD has only one field.

3: Main: Primary IDE Master/Slave: User cylinder and sector field ranges do not match information in the EPS. Cylinder is 0 to 65535; sector is 0 to 63.

4: Advanced Subsystem; PCI Configuration; *Embedded SCSI*: Enable Master fields should be removed or informational only if they are constant values. Currently they are locked.

5: Advanced Subsystem; *Integrated Peripheral Configuration*; *Serial Port B:* Mode field is not specified in the EPS.

6: Advanced Subsystem; *Integrated Peripheral Configuration: Floppy Disk Controller*; Base I/O address field is not defined in the EPS.

7: Boot Subsystem: Maximum Number of I2O drives field is not specified in the EPS.

8: Boot Subsystem: Boot Device Priority list is missing. Removable Devices and *I2O* Block Storage Devices list items.

IMPLICATION: These discrepancies may result in confusion as customers attempt to use the EPS information with the functional BIOS 1.00.01.

WORKAROUND: None identified.

STATUS: The EPS will not be updated.

2.   M440LX DP Server platform discrepancies between BIOS defaults and BIOS EPS identified defaults.

PROBLEM: There is a discrepancy between the documented BIOS defaults in the External Product Specification (EPS) and the 1.00.01 BIOS defaults utilized on the M440LX DP Server baseboard. The parallel port of the actual BIOS defaults to ECP, not output, as defined in the EPS.

IMPLICATION: These discrepancies may result in confusion as customers attempt to use the EPS information with the functional BIOS 1.00.01.

WORKAROUND: None.

STATUS: The EPS will not be updated.

3.   CD-ROM option in boot order does not remain ordered.

PROBLEM: When the IDE CD-ROM is removed and replaced with a SCSI CD-ROM (connected to the narrow SCSI), the SCSI CD-ROM drive is located at the bottom of the list of bootable devices in the BIOS setup. When you select to boot from

5

the CD-ROM and exit BIOS, the system correctly boots from the CD, but on the next reboot of the system, the CD-ROM is returned to the bottom of the bootable device list in BIOS.

IMPLICATION: This issue can make installing software from bootable CD-ROMs problematic as each reboot will require entering the BIOS and correcting the boot order.

WORKAROUND: None.

STATUS: This issue will not be fixed because it is a function of the Symbios BIOS. When a bootable CD-ROM is inserted into the SCSI CD-ROM reader, the BIOS will identify the CD-ROM as a bootable device. However, when no bootable media is inserted in the SCSI CD-ROM, the Symbios BIOS does not identify the CD-ROM as a bootable device. Because of this feature of the Symbios BIOS, the system BIOS only provides the SCSI CD-ROM as a bootable device when bootable media is installed. This is a feature of Symbios and Intel can not change this feature.

4.   Windows NT* Server 4.0 fails to boot with the Hauppauge WIN/TV add-in card installed.

PROBLEM: When the Hauppauge WIN/TV add-in card is installed in the MB440LX server platform with Windows NT 4.0, the system will fail to boot. This adapter is not part of the supported hardware list.

IMPLICATION: This adapter cannot be installed or used on the MB440LX Server Platform.

WORKAROUND: None Identified.

STATUS: Intel will not fix this issue.

5.   Re-mapping on memory errors may not work for SDRAMs.

PROBLEM: The BIOS attempts to resize the memory if it discovers a bad memory location during the Power On Self Test (POST). The symptoms: the system will display a message ' Memory error, reconfiguring DRAM geometry' on the screen, and will hang. The memory re-mapping may not work under the following two situations, due to design limitations-

(1) SDRAM memory is used, AND the error occurs in the first populated row (the first side, in case of a double-sided DIMM) AND the bad location is outside the first 8 MBs.

-OR-

(2) EDO memory is being used AND the first populated DIMM is of size 128MB AND the bad memory location is not in the range [8MB, 32MB] the re-mapping will work if the error is in the first 8MB, or is above 32MB.

In any case, if the bad DIMM is not the first DIMM, there is no problem. In the most common configuration using 32MB EDO DIMMs, there is no problem.

IMPLICATION: If either of the above two situations occur, the system will not boot. It is important to note that this issue only exists in the above two situations.

WORKAROUND: None Identified.

STATUS: Intel will not fix this issue as exposure is very minimal.

6.   *Processor clock speed setting shown in setup is incorrect if F9 is pressed.*

PROBLEM: Pressing F9 in setup to restore default settings, will show the incorrect clock speed setting. Actual processor clock speed is not changed, merely the information shown in setup.

IMPLICATION: Confusion could result if end-users attempt to use this feature.

WORKAROUND: Manually set the speed in BIOS and the speed setting will remain.

STATUS: Intel does not plan to fix this issue.

7.   *The 3Com 3C509 NIC installed to the secondary PCI bus causes clients to drop-off and the server to hang.*

PROBLEM: With one 3Com 3C509 NIC installed in the primary PCI bus and one installed in the secondary bus, running network connectivity testing will show that clients begin to drop off of the NIC installed to the secondary PCI bus. This issue is Network Operating System (NOS) independent. The issue has been identified as a timing issue with the i960® RD processor.

IMPLICATION: In very large configuration, it is possible for clients to be dropped.

WORKAROUND: None Identified.

STATUS: This is not a valid problem report and has not been reproduced. It appears that this issue resulted from the use of down rev'd drivers. This issue is closed.

8.   *Windows NT* 4.0 does not see the keyboard when the mouse is not attached.*

PROBLEM: When installing Windows NT 4.0, the keyboard will not function if the mouse is not installed. When the keyboard is plugged into the mouse port and no mouse is installed, the keyboard will work properly. If Windows NT is installed and the mouse is subsequently removed, the issue is not seen.

IMPLICATION: If a mouse is not installed when the OS installation occurs, the system will hang after installation is complete.

WORKAROUND: Install Windows NT with keyboard in mouse port and the issue does not occur. Install Windows NT with the keyboard and mouse installed and this issue does not occur.

STATUS: This issue will not be fixed by Intel engineering.

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9.   The Write Protect Boot Sector BIOS Setting Does Not Function Properly.

PROBLEM: When a system is configured to use the Write Protect Boot Sector setting in BIOS, it is still possible to write to the boot device's boot sector.

IMPLICATION: This is a potential, though small, security issue if this feature is used for security.

WORKAROUND: None identified.

STATUS: The issue works according to published specifications. The Boot Sector Protect option is only functional in DOS. This issue is closed.

10.   SM Bus information on EDO memory module incorrect

PROBLEM: A silkscreen error on the EDO memory module causes a resistor to be misplaced, which disables EDO DIMM information reporting through the I^2C bus. This only affects 3rd party software implementations.

IMPLICATION: If a 3rd party server management software attempts to query the I^2C bus for EDO DIMMs, then no information will be reported and the request will time out.

WORKAROUND: None identified.

STATUS: There is currently no software that utilizes the information obtained from the EDO memory card SM bus. This issue will not be fixed.

11.   UnixWare 2.1(2) doesn't install to embedded AMI Mega RAID file system.*

PROBLEM: UnixWare requires ptf 3254 PCI driver to recognize multifunction pci devices. The embedded AMI MegaRaid controller is such a device. Installation to this device requires the ptf to be installed. Ptf installation can only be done after the system is loaded.

IMPLICATION: Attempts to directly install UnixWare 2.1(2) on the AMI Mega Raid will fail. A second non RAID file system must be available to work around the issue.

WORKAROUND: Installation can be done to another file system (SCSI, or IDE), and the patch installed and the raid mounted as an additional file system. There is no way (at this time) to boot the default kernel from the AMI subsystem.

STATUS: The kernel on the install disk must have this driver incorporated in order for install to occur directly to the AMI file systems. We expect this change in the installation diskette to be available with UW 2.1.3. UnixWare 2.1.3 installs correctly on AMI MegaRaid (RPX). This problem is closed.

12.   All Video Cards must be installed on primary PCI Bus.

PROBLEM: Errata of the i960RD PCI Bridge prevents correct address translation.

IMPLICATION: Video cards installed on the Secondary PCI bus will either slow down or hang..

WORKAROUND: Install Video cards on Primary PCI Bus only

STATUS: There is no plan to fix this issue.

13. MB440LX BIOS 6.0 Security Screens, BACKUP and VIRUS CHECK halt the boot process.

Problem: The BIOS input screens for Security features Backup and Virus Check, if enabled in BIOS 6.0 ,will lock up boot process and will not accept any user input from the keyboard.

IMPLICATION: User must reset the computer and then disable these security screens in the BIOS setup menu.

WORKAROUND: Do not enable these security features in the BIOS setup menu.

STATUS: Will Not fix

14. System Configuration Utility (SCU) will not recognize the newer processor ID's for the 333mhz or 300mhz processors.

PROBLEM: System Configuration Utility does not recognize the new 333mhz or 300mhz Processor stepping ID's.

IMPLICATION: None

WORKAROUND: BIOS 6.0 was updated to include the new Processor ID's. Testview tests execute normally.

STATUS: Will not fix.

15. Windows NT* 4.0 Install fails on channel A with I/O APIC Enabled

PROBLEM: NT4.0 Installation will not complete and causes a blue screen crash when SCSI disk is on channel A and I/O APIC is enabled.

IMPLICATION: Unable to select CHANNEL A as the SCSI boot device if I/O APIC is enabled. Must select CHANNEL B and connect the SCSI device to CHANNEL B.

WORKAROUND: None

STATUS: Will not fix.