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BL440ZX
Motherboard
Specification Update

Release Date: September, 1999

Order Number: 732747-008

The BL440ZX motherboard may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are documented in this Specification Update.

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The BL440ZX motherboard may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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Specification Update for BL440ZX Motherboards

REVISION HISTORY

Date of Revision	Version	Description
January, 1999	-001	This document is the first Specification Update for the Intel® BL440ZX motherboard.
February, 1999	-002	Added Specification Change 1.
March, 1999	-003	Added Errata 1-2 and Documentation Changes 1-2.
April, 1999	-004	Updated status of Erratum 2. Added Errata 3-4.
May, 1999	-005	Added Errata 5-7.
July, 1999	-006	Modified Specification Change 1.
August, 1999	-007	Added Erratum 8 and Documentation Change 3.
September, 1999	-008	Added Specification Change 2.

PREFACE

This document is an update to the specifications contained in the BL440ZX Motherboard Technical Product Specification (Order number 726092). It is intended for hardware system manufacturers and software developers of applications, operating systems, or tools. It will contain Specification Changes, Errata, Specification Clarifications, and Documentation Changes.

Refer to the *Intel® Celeron™ Processor Specification Update* (Order number 243748) for specification updates concerning the Celeron processor. Items contained in the *Intel Celeron Processor Specification Update* that either do not apply to the BL440ZX motherboard 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 PBA revision(s) associated with that stepping.

Refer to the *82443ZX Specification Update* (Order Number TBD) for specification updates concerning the 82443ZX PCI A.G.P. Controller. Items contained in the *82443ZX Specification Update* that either do not apply to the BL440ZX motherboard or have been worked around are noted in this document. Otherwise, it should be assumed that any controller errata for a given stepping are applicable to the PBA revision(s) associated with that stepping.

Refer to the *Intel® 82371EB (PIIX4E) Specification Update* (Order Number 290635) for specification updates concerning the 82371EB PIIX4E. Items contained in the *Intel 82371EB (PIIX4E) Specification Update* that either do not apply to the BL440ZX motherboard or have been worked around are noted in this document. Otherwise, it should be assumed that any PIIX4E errata for a given stepping are applicable to the Printed Board Assembly (PBA) revision(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.

Errata are design defects or errors. Characterized errata may cause the BL440ZX motherboard's behavior to deviate from published specifications. Hardware and software designed to be used with any given Printed Board Assembly (PBA) and BIOS revision level must assume that all errata documented for that PBA and BIOS revision level are present on all motherboards.

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.

**Specification Update for
BL440ZX Motherboards**

GENERAL INFORMATION

Basic BL440ZX Motherboard Identification Information

AA Revision	PBA Revision	440ZX AGPSet Stepping	BIOS Revision	Notes
725757-101	725756-101	A1	4B4LZ0XA.86A. 0002.P01	1-5
727575-102	725756-102	A1	4B4LZ0XA.86A. 0004.P02	1-5
727575-103	725756-103	A1	4B4LZ0XA.86A. 0004.P02	1-5
727575-104	725756-104	A1	4B4LZ0XA.86A. 0007.P04	1-5

NOTES:

1. The PBA number or AA number is found on a small label on the component side of the board.
2. The 440ZX AGPset kit used on this PBA revision consists of two components as follows:

Device	Stepping	S-Spec Numbers
82443ZX	A1	SL37A
82371EB	A0	SL37M SL37Z

3. The following errata are contained in the *Intel® Celeron™ Processor Specification Update* (Order Number 243748) for the Celeron processor and either do not apply to the BL440ZX motherboard or have been worked-around in this PBA and/or BIOS revision: C1AP-C2AP. All other errata associated with the processor apply to this PBA revision.
4. The following items are contained in the *Intel® 82443ZX Specification Update* (Order Number TBD) and either do not apply to the BL440ZX motherboard or have been worked around in this PBA and/or BIOS revision: None. All other errata associated with the AGPset apply to this PBA revision.
5. The following items are contained in the *Intel® 82371EB (PIIX4E) Specification Update* (Order Number 290635) and either do not apply to the BL440ZX motherboard or have been worked around in this PBA and/or BIOS revision: 5, 9, 15. All other errata associated with the PIIX4E apply to this PBA revision.

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Summary Table of Changes

The following table indicates the Specification Changes, Errata, Specification Clarifications, or Documentation Changes which apply to the BL440ZX motherboard. Intel intends to fix some of the errata in a future revision of the motherboard, 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 motherboard or BIOS.
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.

NO.	PLANS	SPECIFICATION CHANGES
1	Doc	Support for new Intel® Celeron™ processor speeds
2	Doc	Support for 500 MHz Intel Celeron processors

NO.	PLANS	ERRATA
1	NoFix	System Cannot Boot From Intelligent I/O Device
2	Fixed	System BIOS Does Not Wake System After Some ACPI Events
3	Fix	System will not boot from ISA video adapter if Scan User Flash is enabled
4	NoFix	BIOS setup program does not warn of IRQ conflict
5	Fix	System BIOS does not release IRQ when secondary IDE is unused
6	Fixed	BIOS does not reserve memory for ISA devices
7	Fix	System does not suspend correctly under OS/2* Warp* 4.0
8	Fixed	BIOS Setup allows all IRQs to be reserved

NO.	PLANS	DOCUMENTATION CHANGES
1	Doc	Change to Section 1.18, Environmental Specifications
2	Doc	Change to Section 1.13.3, NLX Card Edge Connector
3	Doc	Change to description of wake-up devices

The errata described in this specification update apply to combinations of PBA revision and BIOS revision as shown in the table below. Descriptions of the individual errata referred to by number in the table below are found in the ERRATA section of this document.

PBA Revision	BIOS Revision	Errata That Apply
725756-101	4B4LZ0XA.86A.0002.P01	1-7
	4B4LZ0XA.86A.0004.P02	1, 3-5, 7
	4B4LZ0XA.86A.0006.P03	1, 3-5, 7
	4B4LZ0XA.86A.0007.P04	1, 3-5, 7
725756-102	4B4LZ0XA.86A.0002.P01‡	1-7
	4B4LZ0XA.86A.0004.P02	1, 3-5, 7
	4B4LZ0XA.86A.0006.P03	1, 3-5, 7
	4B4LZ0XA.86A.0007.P04	1, 3-5, 7
725756-103	4B4LZ0XA.86A.0002.P01‡	1-7
	4B4LZ0XA.86A.0004.P02	1, 3-5, 7
	4B4LZ0XA.86A.0006.P03	1, 3-5, 7
	4B4LZ0XA.86A.0007.P04	1, 3-5, 7
725756-104	4B4LZ0XA.86A.0002.P01‡	1-7
	4B4LZ0XA.86A.0004.P02	1, 3-5, 7
	4B4LZ0XA.86A.0006.P03	1, 3-5, 7
	4B4LZ0XA.86A.0007.P04	1, 3-5, 7

‡ Note: This combination of BIOS revision and PBA revision has not undergone regression testing. Use of a PBA with down-revision BIOS is an untested combination and is undertaken at the user's risk.

SPECIFICATION CHANGES

The Specification Changes listed in this section apply to the *BL440ZX Motherboard Technical Product Specification* (Order Number 726092). All Specification Changes will be incorporated into a future version of that specification.

1.   *Support for New Intel® Celeron™ Processor Speeds*

The following will be added to Table 1, Processors Supported by the Motherboard, in Section 1.2, Microprocessor:

Processor Speed	Host Bus Frequency	Cache Size
400 MHz	66 MHz	128 KB
433 MHz	66 MHz	128 KB
466 MHz	66 MHz	128 KB

Note: BIOS Revision 4B4LZ0XA.86A.0007.P04 or greater is required to properly support 433 MHz and 466 MHz processors.

2.   *Support for 500 MHz Intel Celeron Processors*

The following will be added to Table 1, Processors Supported by the Motherboard, in Section 1.2, Microprocessor:

Processor Speed	Host Bus Frequency	Cache Size
500 MHz	66 MHz	128 KB

Note: BIOS Revision 4B4LZ0XA.86A.0007.P04 or greater is required to properly support 500 MHz processors.

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ERRATA

1.   *System Cannot Boot From Intelligent I/O Device*

PROBLEM: Although the BIOS Setup program lists the option to select a device that complies with the Intelligent I/O specification as a boot device, the system will not boot from the device. The option to select an Intelligent I/O device as a boot device has been removed from BIOS revisions after 4B4LZ0XA.86A.0004.P02.

IMPLICATION: The user will have to specify another boot device.

WORKAROUND: None.

STATUS: This erratum will not be fixed.

2.   *System BIOS Does Not Wake System After Some ACPI Events*

PROBLEM: Under the Advanced Configuration and Power Interface (ACPI), the system BIOS does not wake the system from the S1 state after the following events: LAN activity, USB, PS/2 keyboard, PS/2 mouse.

IMPLICATION: The user will not be able to use ACPI if the system must wake from one of these events.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS revision 4B4LZ0XA.86A.0004.P02.

3.   *System Will Not Boot From ISA Video Adapter if Scan User Flash is Enabled*

PROBLEM: If the option to scan the user flash area during the boot process is enabled in the BIOS setup program, the system will hang when the BIOS attempts to initialize an ISA video adapter. This erratum does not affect PCI video adapters.

IMPLICATION: A user who requires an ISA video adapter will not be able to use the scan user flash area option.

WORKAROUND: None.

STATUS: This erratum will be fixed in a future BIOS revision.

4.   *BIOS Setup Program Does Not Warn of IRQ Conflict*

PROBLEM: The BIOS Setup program does not display an asterisk in the Peripheral Configuration submenu to warn that the IRQ chosen for the serial port is in use by another device.

IMPLICATION: The user may assign two devices to use the same IRQ resource.

WORKAROUND: None.

STATUS: This erratum will not be fixed.

5.   *System BIOS Does Not Release IRQ When Secondary IDE is Unused*

PROBLEM: The system BIOS does not release IRQ15 to be reserved for use by an ISA legacy device when no device is detected on the secondary IDE port at boot time.

IMPLICATION: It may not be possible to install an ISA legacy device in the system if no other IRQ is available. IRQ15 is available for assignment to another device in the Windows∗ 95 or Windows 98 Device Manager.

WORKAROUND: None.

STATUS: This erratum will be fixed in a future BIOS revision.

6.   *BIOS Does Not Reserve Memory for ISA Devices*

PROBLEM: Upper memory blocks that are reserved by the user for legacy ISA devices may be assigned to PCI devices by the BIOS during the boot process.

IMPLICATION: ISA devices that require a specific area in upper memory may not be assigned the resources to function correctly.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS revision 4B4LZ0XA.86A.0004.P02.

7.   *System Does Not Suspend Correctly Under OS/2* Warp* 4.0*

Problem: Under the OS/2∗ Warp∗ 4.0 operating system, the system will not suspend from the start menu. When the user attempts to put the system into the suspend state, it suspends for about one second, then wakes up.

IMPLICATION: The user will not be able to force the system to suspend.

WORKAROUND: None.

STATUS: This erratum will be fixed in a future BIOS revision.

8.   *BIOS Setup Allows All IRQs to be Reserved*

PROBLEM: The BIOS Setup program allows the user to reserve all listed IRQs to be used by ISA devices. At least one IRQ must be available in order for PCI devices to function correctly.

IMPLICATION: If the user does not leave an IRQ unreserved, onboard and add-in PCI devices will function erratically or not function at all.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS revision 4B4LZ0XA.86A.0006.P03.

DOCUMENTATION CHANGES

The Documentation Changes listed in this section apply to the *BL440ZX Motherboard Technical Product Specification* (Order Number 726092). All Documentation Changes will be incorporated into a future version of that specification.

1. Change to Unpackaged Shock value

In Table 24 of Section 1.18, Environmental Specifications, the value for unpackaged shock will be changed to 50g.

2. Change to REQ#/GNT# Signal Pairs Routed to the NLX Edge

In Table 14 of Section 1.13.3, NLX Card Edge Connector, the REQ#/GNT# signal pairs routed to the NLX riser card, if the motherboard has the PIIX4E + onboard PCI LAN, will be changed to REQ#/GNT# 0, 1, and 3.

3. Change to Description of Wake-Up Devices

In Section 3.5.2.2, Wake-up Devices and Events, the text paragraph should read "Table 36 describes which devices or specific events can wake the computer from specific ACPI states."