



# **SR440BX Motherboard Specification Update**

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Order Number: 738243-007

The SR440BX 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 SR440BX 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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## REVISION HISTORY

Date of Revision	Version	Description
March 1999	-001	This document is the first Specification Update for the Intel® SR440BX motherboard.
May 1999	-002	Added Errata 3-4.
June 1999	-003	Added Specification Change 1 and Documentation Change 1.
September 1999	-004	Added Specification Change 2 and Erratum 5.
December 1999	-005	Added Erratum 6 and Specification Clarification 1.
January 2000	-006	Added Errata 7-8.
June 2000	-007	Added Erratum 9.

## PREFACE

This document is an update to the specifications contained in the SR440BX Motherboard Technical Product Specification (Order number 732534). 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 *Pentium® 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 SR440BX 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 *82443BX Specification Update* (Order Number 290639) for specification updates concerning the 82443BX PCI A.G.P. Controller. Items contained in the *82443BX Specification Update* that either do not apply to the SR440BX 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 SR440BX 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 SR440BX 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 SR440BX Motherboards**





## GENERAL INFORMATION

**Basic SR440BX Motherboard Identification Information**

AA Revision	PBA Revision	440BX AGPSet Stepping	BIOS Revision	Notes
732604-102	732606-102	C1	4S4R100A.86A.0008.P03	1-5
732604-103	732606-103	C1	4S4R100A.86A.0010.P04	1-5
732604-104	732606-104	C1	4S4R100A.86A.0010.P04	1-5
732604-105	732606-105	C1	4S4R100A.86A.0012.P06	1-5
732604-106	732606-106	C1	4S4R100A.86A.0015.P08	1-5
732688-102	732689-102	C1	4S4R100A.86A.0008.P03	1-5
732688-103	732689-103	C1	4S4R100A.86A.0010.P04	1-5
732688-104	732689-104	C1	4S4R100A.86A.0010.P04	1-5
732688-105	732689-105	C1	4S4R100A.86A.0015.P08	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 440BX AGPset kit used on this PBA revision consists of two components as follows:

Device	Stepping	S-Spec Numbers
82443BX	C1	SL2VH SL378
82371EB	A0	SL37M SL37Z

3. The following errata are contained in the *Pentium® II Processor Specification Update* (Order Number 243337) for the Pentium II processor and either do not apply to the SR440BX motherboard or have been worked-around in this PBA and/or BIOS revision: 3, 10-11, 17, 27-28, 32, 41, 50, 1AP-3AP. All other errata associated with the processor apply to this PBA revision.
4. The following items are contained in the *Intel® 82443BX Specification Update* (Order Number 290639) and either do not apply to the SR440BX motherboard or have been worked around in this PBA and/or BIOS revision: Erratum 3. 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 SR440BX motherboard or have been worked around in this PBA and/or BIOS revision: None. All other errata associated with the PIIX4E apply to this PBA revision.

## Summary Table of Changes

The following table indicates the Specification Changes, Errata, Specification Clarifications, or Documentation Changes which apply to the SR440BX 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 550 MHz Pentium® III processors
2	Doc	Support for 600 MHz Pentium III Processors
NO.	PLANS	ERRATA
1	NoFix	Advanced Power Management may suspend system during CD-ROM playback
2	Fix	System BIOS does not support all ACPI states and events
3	Fixed	System does not suspend correctly under OS/2* Warp* 4.0
4	NoFix	BIOS setup program does not warn of IRQ conflict
5	Fixed	Unable to Boot to or Access SCSI Hard Drive
6	Fixed	System may not function with add-in SCSI host bus adapter
7	Fixed	BIOS does not disable processor serial number
8	Fixed	Some DOS games may experience audio corruption
9	Fixed	If Power Management is Enabled in The System BIOS, System Shutdown With Certain Operating Systems May Not Behave Properly
NO.	PLANS	SPECIFICATION CLARIFICATIONS
1	Doc	FDISK terminates if there is no disk in ZIP* drive
NO.	PLANS	DOCUMENTATION CHANGES
1	Doc	In Section 1.3, Processor, add to the last sentence of the section "up to the cachability limit of the processor"

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
732606-102	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8
732606-103	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8
732606-104	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8

PBA Revision	BIOS Revision	Errata That Apply
732606-105	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8
732606-106	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8
732689-102	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8

PBA Revision	BIOS Revision	Errata That Apply
732689-103	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
732689-104	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8
732689-105	4S4R100A.86A.0007.P02 <sup>‡</sup>	1-9
	4S4R100A.86A.0008.P03	1-2, 4-9
	4S4R100A.86A.0010.P04	1-2, 4-9
	4S4R100A.86A.0011.P05	1-2, 4,7-9
	4S4R100A.86A.0012.P06	1-2, 4,7-9
	4S4R100A.86A.0014.P07	1-2, 4, 9
	4S4R100A.86A.0015.P08	1-2, 4, 9
	4S4R100A.86A.0016.P09	1-2, 4, 9
	4S4R100A.86A.0017.P10	1-2, 4, 8

<sup>‡</sup> 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 *SR440BX Motherboard Technical Product Specification* (Order Number 732534). All Specification Changes will be incorporated into a future version of that specification.

### 1. **Support for 550 MHz Pentium® III Processors**

The motherboard supports 550 MHz Pentium® III processors. Section 1.3, Processor, will have the following entry added to Table 1:

Processor Type	Processor Speed	Host Bus Frequency	L2 Cache Size
Pentium III processor	550	100	512

In Section 4.2, Maintenance Menu, Table 56 will add an entry for 550 MHz with a host bus operating at 100 MHz.

BIOS revision 4S4RB0XA.86A.0010.P04 or later is required for the motherboard to properly support a 550 MHz processor.

### 2. **Support for 600 MHz Pentium III Processors**

The motherboard supports 600 MHz Pentium III processors. Section 1.3, Processor, will have the following entry added to Table 1:

Processor Type	Processor Speed	Host Bus Frequency	L2 Cache Size
Pentium III processor	600	100	512

BIOS revision 4S4RB0XA.86A.0012.P06 or later is required for the motherboard to properly support a 600 MHz processor.

## ERRATA

### 1. ***Advanced Power Management May Suspend System During CD-ROM Playback***

**PROBLEM:** ATAPI devices (such as CD-ROM and DVD drives) do not reset the inactivity timer that is used by Advanced Power Management to determine when to place the system into suspend mode.

**IMPLICATION:** When playback of an audio CD or a DVD file is the only system activity, the system will go into suspend mode when the inactivity timer expires.

**WORKAROUND:** Temporarily disable the Low-power standby and Shut off monitor options on the Display Properties, Screen Saver menu. This menu is available from the Windows® 95 Control Panel.

**STATUS:** This erratum will not be fixed.

### 2. ***System BIOS Does Not Support All ACPI States and 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. See Documentation Change 5 for wake up devices and events currently supported by ACPI and Advanced Power Management (APM).

**WORKAROUND:** Use APM if power management from any of these devices is required.

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

### 3. ***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 was fixed in BIOS revision 4S4R100A.86A.0008.P03.

### 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. *Unable to Boot to or Access SCSI Hard Drive***

**PROBLEM:** With a PCI SCSI Controller installed and the SCSI hard drive configured as drive zero, the hard drive will not be recognized by the SCSI controller card during POST.

**IMPLICATION:** The SCSI hard drive will not be accessible as a bootable device or as a hard drive after operating system load.

**WORKAROUND:** None.

**STATUS:** This erratum was fixed in BIOS revision 4S4RB0XA.86A.0011.P05.

## **6. *System May Not Function With Add-in SCSI Host Bus Adapter***

**PROBLEM:** The BIOS may fail to initialize an add-in SCSI host bus adapter correctly.

**IMPLICATION:** Devices connected to the host bus adapter will not be available to the operating system.

**WORKAROUND:** None.

**STATUS:** This erratum was fixed in BIOS revision 4S4R100A.86A.0011.P05.

## **7. *BIOS Does Not disable Processor Serial Number***

**PROBLEM:** If the Processor Serial Number feature is set to disabled in the BIOS, the setting will remain enabled.

**IMPLICATION:** The processor serial number could be provided to a program that requests it.

**WORKAROUND:** None.

**STATUS:** This erratum was fixed in BIOS revision 4S4R100A.86A.0014.P07.

## **8. *Some DOS Games May Experience Audio Corruption***

**PROBLEM:** If the legacy USB option is set to auto or enabled in BIOS and DMA channel 1 is selected in the audio setup for the game, then audio corruption including audio loopback may be experienced while playing the game in real DOS mode.

**IMPLICATION:** Audio performance in DOS games may be degraded.

**WORKAROUND:** Either disable the legacy USB in BIOS or choose DMA channel 3 during the user setup of the game.

**STATUS:** This erratum was fixed in the DOS driver version 5.14 of the audio driver.



**9. *If Power Management is Enabled in The System BIOS, System Shutdown With Certain Operating Systems May Not Behave Properly***

**PROBLEM:** Power Management option set to enabled in the system BIOS will cause Microsoft\* Windows NT\* 4.0 to reboot during system shutdown, without user intervention.

**IMPLICATION:** Users that enable power management in the system BIOS may experience a restart condition during system shutdown while using Microsoft Windows NT 4.0.

**WORKAROUND:** None.

**STATUS:** This erratum was fixed in BIOS revision 4S4R100A.86A.0017.P10.

## SPECIFICATION CLARIFICATIONS

The Specification Clarifications listed in this section apply to the *SR440BX Motherboard Technical Product Specification* (Order Number 732534). All Documentation Changes will be incorporated into a future version of that specification.

### **1. *FDISK Terminates if There Is No Disk in ZIP\* Drive***

When using a ZIP\* drive as a fixed ATAPI device, there must be a disk in the drive for FDISK to function properly.

## DOCUMENTATION CHANGES

The Documentation Changes listed in this section apply to the *SR440BX Motherboard Technical Product Specification* (Order Number 732534). All Documentation Changes will be incorporated into a future version of that specification.

1. ***See Summary Table of Changes***