



TE430VX Motherboard Specification Update

Release Date: August 1997

Order Number: 281815-011

The TE430VX 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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REVISION HISTORY

Date of Revision	Version	Description
June 1996	-001	This document is the first Specification Update for the Intel TE430VX motherboard.
August 1996	-002	Added Documentation Changes section.
September 1996	-003	Added Documentation Changes 1-26.
November 1996	-004	Added Erratum 3 and Updated Erratum 2.
December 1996	-005	Added Errata 4-5. Removed Documentation Changes 1-26, which were incorporated into revision -004 of the specification.
January 1997	-006	Added Erratum 6 and Specification Clarification 1. Updated status of Erratum 4.
March 1997	-007	Added AA Revision to Motherboard Identification table. Revised format of PBA/BIOS revision table. Added Erratum 7 and Specification Clarification 2.
April 1997	-008	Updated status of Errata 1 and 3. Replaced Specification Clarification 2 with Erratum 8.
June 1997	-009	Added Specification Change 1, Erratum 9, Specification Clarifications 3-5 and Documentation Changes 1-2. Updated Erratum 6.
July 1997	-010	Added Specification Clarification 6 and Documentation Changes 3-5
August 1997	-011	Added Specification Clarification 7 and Documentation Changes 6-7.

PREFACE

This document is an update to the specifications contained in the *TE430VX Motherboard Technical Product Specification* (Order Number 281817). 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® Processor Specification Update* (Order Number 242480) for specification updates concerning the Pentium processor. Items contained in the *Pentium Processor Specification Update* that either do not apply to the TE430VX 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 Printed Board Assembly (PBA) revision(s) associated with that stepping.

Refer to the *82430VX PCIset Specification Update* (Order Number 297653) for specification updates concerning the 82430VX PCIset. Items contained in the *82430VX PCIset Specification Update* that either do not apply to the TE430VX motherboard 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) revision(s) associated with that stepping.

Refer to the *82371SB PIIX3 Specification Update* (Order Number 297658) for specification updates concerning the 82371SB PIIX3. Items contained in the *82371SB PIIX3 Specification Update* that either do not apply to the TE430VX motherboard 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) 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 TE430VX 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 TE430VX Motherboards

GENERAL INFORMATION

Basic TE430VX Motherboard Identification Information

AA Revision	PBA Revision	430VX PCIset Stepping	BIOS Revision	Notes
653863-304	653762-304	A1	1.00.01.CY1	1, 5, 6, 7, 11
653863-305	653762-305	A2	1.00.02.CY1	1, 8, 9, 10, 11
665257-700	665152-700	A2	1.00.03.CY1	1, 8, 9, 10, 11
677108-701	677109-701	A2	1.00.06.CY1	1, 8, 9, 10, 11

NOTES:

- The PBA number is found on a small label on the component side of the board.
- The 82430VX PCIset used on this PBA revision consists of three components as follows:

Device	Stepping	S-Spec Numbers
82437VX	A1	SU085
82438VX	A1	SU086
82371SB (PIIX3)	A1	SU052

- The following errata contained in the *82430VX PCIset Specification Update* (Order Number 297653) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision; 1-11. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82430VX PCIset Specification Update*.
- The following errata contained in the *82371SB PIIX3 Specification Update* (Order Number 297658) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82371SB PIIX3 Specification Update*.
- The 82430VX PCIset used on this PBA revision consists of three components as follows:

Device	Stepping	S-Spec Numbers
82437VX	A1	SU085
82438VX	A1	SU086
82371SB (PIIX3)	B0	SU093

- The following errata contained in the *82430VX PCIset Specification Update* (Order Number 297653) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision; 1-11. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82430VX PCIset Specification Update*.
- The following errata contained in the *82371SB PIIX3 Specification Update* (Order Number 297658) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82371SB PIIX3 Specification Update*.

8. The 82430VX PCIset used on this PBA revision consists of three components as follows:

Device	Stepping	S-Spec Numbers
82437VX	A2	SU116
82438VX	A1	SU086
82371SB (PIIX3)	B0	SU093

9. The following errata contained in the *82430VX PCIset Specification Update* (Order Number 297653) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision; 1-13. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82430VX PCIset Specification Update*.
10. The following errata contained in the *82371SB PIIX3 Specification Update* (Order Number 297658) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision. All other errata associated with the PCIset apply to this PBA revision. For specific details of any erratum please refer to the *82371SB PIIX3 Specification Update*.
11. The following errata contained in Part I of the *Pentium® Processor Specification Update* (Order Number 242480) either do not apply to the TE430VX motherboard or have been worked around in this PBA and/or BIOS revision: 5, 7, 9-11, 13-14, 16-17, 29, 31, 34, 36-37, 39, 40, 46, 48-50, 58, 60-64, 66-67, 69, 71, all DP errata, all AP errata, all TCP errata. All other errata in Part II may apply to this revision level of the motherboard, depending on the stepping of the processor or the specific software that is being executed. Also, some of these errata apply only to motherboards being used in an application development environment. For specific details of any erratum please refer to the *Pentium Processor Specification Update*.

Summary Table of Changes

The following table indicates the Specification Changes, Errata, Specification Clarifications, or Documentation Changes which apply to the TE430VX 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 233 MHz Pentium® processors with MMX™ technology
NO.	PLANS	ERRATA
1	Fixed	Front panel sleep button does not function
2	Fixed	PCI Delayed Transactions are not supported
3	Fixed	BIOS does not support no-emulation mode for CD-ROM boot
4	Fixed	CMOS checksum may be lost if power is cycled during boot
5	NoFix	PCI device scan may terminate abnormally
6	NoFix	PCI add-card may hang system due to improper TRST# signal
7	Fix	System BIOS does not recognize bootable USB devices
8	NoFix	Cannot meet FCC Class B requirements using unshielded USB cable
9	NoFix	Slave on secondary IDE channel is not disabled
NO.	PLANS	SPECIFICATION CLARIFICATION
1	Doc	Bus mastering may not be available using the fourth PCI slot
2	Doc	Replaced by Erratum 8
3	Doc	Support for Pentium processors with MMX technology
4	Doc	Advanced Power Management (APM) will not function as expected with Universal Serial Bus (USB) enabled
5	Doc	PCI 2.1 Specification optional features
6	Doc	Administrator and user passwords
7	Doc	Power supply considerations
NO.	PLANS	DOCUMENTATION CHANGES
1	Doc	Revision of Section 1.11.3, "Wavetable Connector"

NO.	PLANS	DOCUMENTATION CHANGES
2	Doc	Revision of Section 5.2, "Specifications"
3	Doc	Revision of Section 1.7.1, "82437VX Xcelerated Controller (VXC)"
4	Doc	Revision of Section 1.12.4, "Add-In Board Expansion Connectors"
5	Doc	Revision of Section 1.13.3, "Clear CMOS (J9C1-A)"
6	Doc	Revision of Section 1.16.1, "Power Supply Considerations"
7	Doc	Revision of Section 1.8.1, "Serial Ports"

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
653762-304	1.00.01.CY1	1-6, 9-9
	1.00.02.CY1	1-6, 9
	1.00.03.CY1	1-3, 5-6, 9
	1.00.04.CY1	1-3, 5-6, 9
	1.00.05.CY1	1-2, 5-6, 9
	1.00.06.CY1	6-9
653762-305	1.00.01.CY1 [†]	3-6, 9
	1.00.02.CY1	3-6, 9
	1.00.03.CY1	3, 5-6, 9
	1.00.04.CY1	3, 5-6, 9
	1.00.05.CY1	5-6, 9
	1.00.06.CY1	6-9
665152-700	1.00.01.CY1 [†]	3-4, 6-9
	1.00.02.CY1 [†]	3-4, 6-9
	1.00.03.CY1	6-9
	1.00.04.CY1	6-9
	1.00.05.CY1	6-9
	1.00.06.CY1	6-9

PBA Revision	BIOS Revision	Errata That Apply
677109-701	1.00.01.CY1 [‡]	3-4, 6-9
	1.00.02.CY1 [‡]	3-4, 6-9
	1.00.03.CY1 [‡]	6-9
	1.00.04.CY1 [‡]	6-9
	1.00.05.CY1 [‡]	6-9
	1.00.06.CY1	6-9

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 *TE430VX Motherboard Technical Product Specification* (Order Number 281817). All Specification Changes will be incorporated into a future version of that specification.

1. **Support for 233 MHz Pentium® processors with MMX™ technology**

Support for 233 MHz Pentium® processors with MMX™ technology is available in PBA revision 677109-701 and higher. Below are the jumper settings:

Processor Freq. (MHz)	Jumpers J9C1-C	Jumpers J9C1-D	Host Bus Freq. (MHz)	PCI Bus Freq. (MHz)	ISA Bus Freq. (MHz)	Bus/Processor Freq. Ratio
100/233	1-2 and 5-6	1-2 and 4-5	66	33	8.33	1.5

NOTE:

There are no additional jumpering requirements for Pentium processors with MMX technology.

The 100 MHz Pentium processor and the 233 MHz Pentium processor with MMX technology have identical jumper settings. The motherboard automatically detects which processor type is installed.

ERRATA

1. *Front Panel Sleep Button Does Not Function*

PROBLEM: The front panel sleep button will not place the system into a sleep state even though the Advanced Power Management feature may be active.

IMPLICATION: The sleep button cannot be used to put the system into a powerdown, or sleep state.

WORKAROUND: Use the hot key sequence defined in BIOS SETUP to place the system in a sleep state.

STATUS: This erratum was fixed in PBA revisions 653762-305 and 665152-700.

2. *PCI Delayed Transactions Are Not Supported*

PROBLEM: An erratum to the A1 stepping of the 82371SB PCI ISA IDE Xcelerator (PIIX3) requires that the option for Delayed Transactions be turned off by the BIOS.

IMPLICATION: System level performance and compatibility are not affected by turning off delayed transactions. The system will be PCI 2.1 compatible and will support all PCI 2.1 compliant cards.

WORKAROUND: None.

STATUS: This erratum was fixed in PBA revision 653762-305 and 665152-700.

3. *BIOS Does Not Support No-Emulation Mode for CD-ROM Boot*

PROBLEM: The system BIOS does not support booting from an "El Torito" bootable CD-ROM using the no-emulation mode format.

IMPLICATION: Booting from a CD-ROM using no emulation mode is not supported. For example, Microsoft Windows* NT* version 4.0 uses no-emulation mode for its boot CD-ROM.

WORKAROUND: Boot the computer from a floppy or hard disk, then install or run the program from the CD-ROM.

STATUS: This erratum was fixed in BIOS revision 1.00.05.CY1.

4. *CMOS Checksum May Be Lost If Power Is Cycled During Boot*

PROBLEM: If the computer power is turned off during a short portion of the boot process, the CMOS checksum byte will not be updated. The next time the computer is turned on, the message "CMOS Checksum Invalid" will be displayed.

IMPLICATION: When the message is displayed, the correct checksum has already been recalculated and stored. No user action is required to recover from the error. If the additional message:

Date and Time Not Set
Press <F1> for Setup, <Esc> to Boot

is displayed, the user will have to reset the current date and time using the BIOS Setup program.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS revision 1.00.03.CY1.

5. *PCI Device Scan May Terminate Abnormally*

PROBLEM: If the system does not contain a device with PCI ID Bus 00, Device 07, Function 3, any program that polls for PCI devices will receive a partial response at that address. If the program is not able to recover from that partial response it may cause the computer to lock up.

IMPLICATION: The user may have to reboot the computer after running a PCI diagnostic program. This is only known to affect the proprietary PCI diagnostic program PCI.EXE. Intel does not know of any application program subject to this erratum.

WORKAROUND: None.

STATUS: This erratum will not be fixed.

6. *PCI Add-in Card May Hang System Due to Improper TRST# Signal*

PROBLEM: If a PCI add-in card that implements boundary scan is installed, the system may not boot. In accordance with the PCI 2.1 specification, the add-in card expects the TRST# signal to be pulled down if JTAG is not supported by the motherboard. The motherboard does not implement JTAG boundary scan and does not pull the TRST# signal down, which prevents the add-in card from initializing properly.

IMPLICATION: The system may not boot if a PCI card that implements JTAG boundary scan is inserted.

WORKAROUND: None.

STATUS: This erratum will not be fixed.

7. *System BIOS Does Not Recognize Bootable USB Devices*

PROBLEM: The system BIOS does not recognize a USB keyboard or mouse during a system boot. A USB keyboard or mouse is not recognized until an operating system that supports USB is loaded.

IMPLICATION: 1. The user is not able to use a USB keyboard to enter the BIOS Setup or to respond to error messages that are displayed before an operating system with USB support is loaded.
2. The user is not able to use a USB keyboard or mouse with any operating system that does not have USB support.

WORKAROUND: Use a standard PS/2* style keyboard and mouse in any configuration where input is required before an operating system with USB support is loaded.

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

8. *Cannot Meet FCC Class B Requirements Using Unshielded USB Cable*

PROBLEM: The motherboard will generate excessive electromagnetic radiation on unshielded USB cables, even if no device or a low speed (sub-channel) USB device is attached to the cable.

IMPLICATION: Systems based on this motherboard will not meet FCC Part 15 Class B requirements when unshielded USB cable is used. Although this condition is a violation of the USB v1.0 specification, it is not believed to have any effect on normal USB device operation.

WORKAROUND: Use USB devices with shielded cable that meet the requirements for high speed (fully-rated) USB devices.

STATUS: This erratum will not be fixed.

9. *Slave on Secondary IDE Channel Is Not Disabled*

PROBLEM: If the IDE Device Configuration option in BIOS Setup is set to disable the secondary IDE slave device, it will not be disabled in the following configuration:

- ATAPI device attached as master to the secondary IDE connector.
- ATAPI device attached as slave to the secondary IDE connector.

IMPLICATION: In the above configuration, any ATAPI device attached as a secondary slave will remain enabled even if the BIOS setting for the secondary slave is set to disabled.

WORKAROUND: None.

STATUS: This erratum will not be fixed.

SPECIFICATION CLARIFICATIONS

The Specification Clarifications listed in this section apply to the *TE430VX Motherboard Technical Product Specification* (Order Number 281817). All Specification Clarifications will be incorporated into a future version of that specification.

1. *Bus Mastering May Not Be Available Using the Fourth PCI Slot*

The following note will be added as part of Section 1.12.4, Add-in Board Expansion Connectors:

If the onboard video adapter is enabled, then the fourth PCI slot will not be available as a Bus Mastering Slot.

2. *Replaced by Specification Change 1*

3. *Support for Pentium® Processors with MMX™ Technology*

Support for Pentium® processors with MMX™ technology is available in PBA revision 665152-700 and higher.

4. *Advanced Power Management (APM) Will Not Function as Expected with Universal Serial Bus (USB) Enabled*

The following will be added to Section 1.7.4, Universal Serial Bus and Section 3.1.8, Advanced Power Management:

Advanced Power Management will not function as expected when a USB keyboard or mouse is used. USB activity is not monitored by the APM event counter, therefore, activity from a USB keyboard or mouse will not keep the system awake or bring a system out of APM sleep mode. If a USB keyboard or mouse is being used, APM should be disabled.

5. *PCI 2.1 Specification Optional Features*

The following will be added to section 1.12.4, Add-in Board Expansion Connectors:

The following optional features in the PCI 2.1 Specification are not implemented on the TE430VX motherboard:

- Cache Support Pins **SBO#** and **SDONE** (Section 2.2.7)
- **PRSNTx#** (Section 2.2.8)
- **CLKRUN#** (Section 2.2.8)
- 64 Bit Bus Extension Pins (Section 2.2.9)
- 66 MHz support (Section 2.2.8)
- JTAG/Boundary scan (Section 2.2.10)

6. Administrator and User Passwords

The following will be added to Section 3.2.11.1, Administrative and User Access Modes:

If an administrator password has been set, but no user password has been set, a user can create a password by entering BIOS Setup at boot by pressing the F1 key and pressing enter at the administrator password prompt. Once in BIOS Setup, a user will be able to create a new user password.

Once defined, a user password can be cleared by either defining a new user password in Setup, or by moving the Password Clear jumper (J9C1-A) on the motherboard. See Section 1.13.2, Password Clear for more information on how to use this jumper.

7. Power Supply Considerations

The TE430VX motherboard has been designed to be configured in a system that uses a power supply that complies with the recommendations of ATX Specification Version 2.01. See Documentation Change 6 for the specific recommendations that must be met by a power supply for the motherboard.

DOCUMENTATION CHANGES

The Documentation Changes listed in this section apply to the *TE430VX Motherboard Technical Product Specification* (Order Number 281817). All Documentation Changes will be incorporated into a future version of the appropriate TE430VX motherboard documentation.

1. Revision of Section 1.11.3, Wavetable Connector

This second paragraph in this section will be replaced in its entirety as follows:

Compatible wavetable cards are available from several vendors.

2. Revision of Section 5.2, Specifications

The following note will be added to the table entry for PCI compliance:

NOTE: Certain optional PCI features have not been implemented on this motherboard, see section 1.14 for more information.

3. Revision of Section 1.7.1, 82437VX Xcelerated Controller (VXC)

The fourth bullet in this section will be replaced in its entirety as follows:

- Fully synchronous PCI bus interface
 - 25/30/33 MHz
 - PCI to DRAM data transfers up to or greater than 100 MB/sec
 - Up to 4 PCI masters in addition to the PIIX3

4. Revision of Section 1.12.4, Add-In Board Expansion Connectors

The text in the first paragraph of this section will be replaced in its entirety as follows:

The motherboard Expansion Slots support up to four bus mastering PCI and up to three ISA add-in boards. One of the PCI slots may be shared with an ISA slot.

5. Revision of Section 1.13.3, Clear CMOS (J9C1-A)

This section will be replaced in its entirety as follows:

Allows CMOS settings to be reset to default values by moving the jumper from pins 4-5 to pins 5-6 and turning the system on. When the system reports that "NVRAM cleared by jumper", the system can be turned off, and the jumper should be returned to the 4-5 position to restore normal operation. Default is for this jumper to be on pins 4-5.

Caution: This procedure should only be done if, after a BIOS update, the system does not boot to a point where BIOS Setup can be entered or if, after CMOS default settings have been restored from within the Setup program, the system does not boot to the operating system.

6. Revision of Section 1.16.1, Power Supply Considerations

Section 1.16.1, Power Supply Considerations, will be replaced in its entirety as follows:

For typical configurations, the motherboard is designed to operate with at least a 200 W power supply (see Section n.n.n for the specification). A higher-wattage power supply should be used for heavily-loaded configurations. The power supply must comply with the following recommendations found in the indicated sections of that specification:

- The potential relation between 3.3VDC and +5VDC power rails (Section 4.2)
- The current capability of the +5VSB line (Section 4.2.1.2)
- All timing parameters (Section 4.2.1.3)
- All voltage tolerances (Section 4.2.2)

7. Revision of Section 1.8.1, Serial Ports

This section will be replaced in its entirety as follows:

The motherboard has one 9-pin D-Sub serial port connector located on the back panel. The NS16C550-compatible UARTs allow data transfers at speeds up to 115.2 Kbaud with BIOS serial port support.

