



Desktop Board CA810E Specification Update

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Order Number: A07908-008

The CA810E Desktop Board 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 CA810E Desktop Board 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 |
|------------------|---------|--|
| December 1999 | -001 | This document is the first Specification Update for the Intel® CA810E Desktop Board. |
| January 2000 | -002 | Added Erratum 2. |
| February 2000 | -003 | Added Specification Change 1 and Documentation Change 1. |
| May 2000 | -004 | Added Erratum 3 and Updated Errata 1-2. |
| June 2000 | -005 | Added Specification Change 2. |
| September 2000 | -006 | Added Erratum 4. |
| January 2001 | -007 | Added Documentation Changes 2-4. |
| May 2001 | -008 | Added Erratum 5. Removed BIOS/Errata cross-reference table. |

PREFACE

This document is an update to the specifications contained in the CA810E Desktop Board Technical Product Specification (Order number A03415). 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® III Processor Specification Update* (Order number 244453) for specification updates concerning the Pentium III processor. Items contained in the *Pentium III Processor Specification Update* that either do not apply to the CA810E desktop board 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 *Intel® Celeron™ Processor Specification Update* (Order number 243748) for specification updates concerning the Intel Celeron processor. Items contained in the *Intel Celeron Processor Specification Update* that either do not apply to the CA810E Desktop Board 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 *Intel® 82810 Chipset: 82810E Graphics and Memory Controller Hub (GMCH) Specification Update* (Order Number 290659) for specification updates concerning the 82810 GMCH Controller. Items contained in the *82810E GMCH Specification Update* that either do not apply to the CA810E Desktop Board or have been worked around are noted in this document. Otherwise, it should be assumed that any GMCH errata for a given stepping are applicable to the PBA revision(s) associated with that stepping.

Refer to the *Intel® 82801 I/O Controller Hub (ICH) Specification Update* (Order Number 290677) for specification updates concerning the 82801 I/O Controller Hub. Items contained in the *Intel 82801 ICH Specification Update* that either do not apply to the CA810E Desktop Board or have been worked around are noted in this document. Otherwise, it should be assumed that any ICH errata for a given stepping are applicable to the Printed Board Assembly (PBA) revision(s) associated with that stepping.

Refer to the *Intel® 82802 Firmware Hub (FWH) Specification Update* (Order Number TBD) for specification updates concerning the 82802 Firmware Hub. Items contained in the *Intel 82802 FWH Specification Update* that either do not apply to the CA810E desktop board or have been worked around are noted in this document. Otherwise, it should be assumed that any ICH 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 CA810E Desktop Board'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 Desktop Boards.

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 CA810E Desktop Boards

GENERAL INFORMATION

Basic CA810E Desktop Board Identification Information

| AA Revision | PBA Revision | BIOS Revision | Notes |
|-------------|--------------|-----------------------|-------|
| A01986-302 | A01991-302 | CA81020A.86A.0003.P01 | 1-7 |
| A01988-302 | A01993-302 | CA81020A.86A.0003.P01 | 1-7 |
| A01986-303 | A01991-303 | CA81020A.86A.0003.P01 | 1-7 |
| A01988-303 | A01993-303 | CA81020A.86A.0003.P01 | 1-7 |
| A01986-304 | A01991-304 | CA81020A.86A.0005.P02 | 1-7 |
| A01988-304 | A01993-304 | CA81020A.86A.0005.P02 | 1-7 |
| A01986-305 | A01991-305 | CA81020A.86A.0005.P02 | 1-7 |
| A01988-305 | A01993-305 | CA81020A.86A.0005.P02 | 1-7 |
| A01986-306 | A01991-306 | CA81020A.86A.0005.P02 | 1-7 |
| A01988-306 | A01993-306 | CA81020A.86A.0005.P02 | 1-7 |
| A01986-307 | A01991-307 | CA81020A.86A.0006.P03 | 1-7 |
| A01988-307 | A01993-307 | CA81020A.86A.0006.P03 | 1-7 |
| A01986-308 | A01991-308 | CA81020A.86A.0006.P03 | 1-7 |
| A01988-308 | A01993-308 | CA81020A.86A.0006.P03 | 1-7 |
| A01986-309 | A01991-309 | CA81020A.86A.0006.P03 | 1-7 |
| A01988-309 | A01993-309 | CA81020A.86A.0006.P03 | 1-7 |
| A01986-310 | A01991-310 | CA81020A.86A.0006.P03 | 1-7 |
| A01988-310 | A01993-310 | CA81020A.86A.0006.P03 | 1-7 |

NOTES:

1. The PBA number or AA number is found on a small label on the component side of the board.
2. The 82810E Chipset kit used on this PBA revision consists of three components as follows:

| Device | Stepping | S-Spec Numbers |
|-------------|----------|----------------|
| 82810E GMCH | A2 | SL3MD |
| 82801AA ICH | B1 | SL3MA SL3MZ |
| 82802AB FWH | A0 | SB48 |

3. The following errata are contained in the *Pentium® III Processor Specification Update* (Order Number 244453) for the Pentium III processor and either do not apply to the CA810E Desktop Board or have been worked-around in this PBA and/or BIOS revision: 5. All other errata associated with the processor apply to this PBA revision.
4. 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 CA810E Desktop Board or have been worked-around in this PBA and/or BIOS revision: None. All other errata associated with the processor apply to this PBA revision.
5. The following items are contained in the *Intel® 82810E Graphics and Memory Controller Hub (GMCH) Specification Update* (Order Number 290659) and either do not apply to the CA810E Desktop Board or have been worked around in this PBA and/or BIOS revision: None. All other errata associated with the GMCH apply to this PBA revision.
6. The following items are contained in the *Intel® 82801 I/O Controller Hub Specification Update* (Order Number 290677) and either do not apply to the CA810E Desktop Board or have been worked around in this PBA and/or BIOS revision: None. All other errata associated with the ICH apply to this PBA revision.
7. The following items are contained in the *Intel® 82802 Firmware Hub Specification Update* (Order Number TBD) and either do not apply to the CA810E Desktop Board or have been worked around in this PBA and/or BIOS revision: None. All other errata associated with the FWH 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 CA810E Desktop Board. Intel intends to fix some of the errata in a future revision of the Desktop Board, 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 Desktop Board 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 faster Intel® Celeron™ processors |
| 2 | Doc | Support for 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 850, and 866 MHz Pentium® III processors. Support for 533, 566, and 600 MHz Celeron™ processors |
| NO. | PLANS | ERRATA |
| 1 | Fixed | BIOS may allow system to boot when user password is enabled |
| 2 | Fixed | BIOS Does Not Recognize Host Bus Adapters |
| 3 | Fixed | System may not boot from bootable CD |
| 4 | Fix | Some SCSI host bus adapters may not boot to the hard disk drive with a bootable CD-ROM drive attached |
| 5 | Fixed | Intel® Pentium® III processor Erratum E76 |
| NO. | PLANS | DOCUMENTATION CHANGES |
| 1 | Doc | Change to description of Manufacturing Options |
| 2. | Doc | Change to description of Section 3.3.1, PCI Autoconfiguration |
| 3 | Doc | Change to description of Section 3.9, BIOS Security Features |
| 4 | Doc | Change to description of Section 4.5, Security Menu |

SPECIFICATION CHANGES

1. **Support for Faster Intel® Celeron™ Processors**

In Section 1.4, Processor, the following will be added to Table 4, Processors Supported by the Board:

| Processor | Processor Speed | Host Bus Frequency | Cache Size |
|--------------------|-----------------|--------------------|------------|
| Celeron™ processor | 533 MHz | 66 MHz | 128 KB |

2. **Support for 533EB, 550E, 600E, 600EB, 650, 667, 700, 733, 750, 800, 800EB, 850, and 866 MHz Pentium® III Processors. Support for 533, 566, and 600 MHz Celeron Processors**

Section 1.4 Processor, of the CA810E Technical Product Specification will be replaced in its entirety as follows:

1.4.1 Processor

The CA810E board supports a single Pentium® III processor with 100 MHz or 133 MHz host bus frequency, or a single Celeron processor with 66 MHz or 100 MHz host bus frequency. The processor's VID pins automatically program the voltage regulator on the board to the required processor voltage. The host bus speed for any of the processors is automatically selected. The processor connects to the board through the PGA370 socket.

The board supports the processors listed in Table 1.

Table 1. Processors Supported by the Board

| Processor Speed | Processor Speed | Host Bus Frequency | Cache Size |
|------------------------|-----------------|--------------------|------------|
| Pentium® III processor | 500E MHz | 100 MHz | 256 KB |
| | 533EB MHz | 133 MHz | 256 KB |
| | 550E MHz | 100 MHz | 256 KB |
| | 600E MHz | 100 MHz | 256 KB |
| | 600EB MHz | 133 MHz | 256 KB |
| | 650 MHz | 100 MHz | 256 KB |
| | 667 MHz | 133 MHz | 256 KB |
| | 700 MHz | 100 MHz | 256 KB |
| | 733 MHz | 133 MHz | 256 KB |
| | 750 MHz | 100 MHz | 256 KB |
| | 800 MHz | 100 MHz | 256 KB |
| | 800EB MHz | 133 MHz | 256 KB |
| | 850 MHz | 100 MHz | 256 KB |
| | 866 MHz | 133 MHz | 256 KB |
| Celeron™ processor | 366 MHz | 66 MHz | 128 KB |
| | 400 MHz | 66 MHz | 128 KB |
| | 433 MHz | 66 MHz | 128 KB |
| | 466 MHz | 66 MHz | 128 KB |
| | 500 MHz | 66 MHz | 128 KB |
| | 533 MHz | 66 MHz | 128 KB |
| | 566 MHz | 66 MHz | 128 KB |
| | 600 MHz | 66 MHz | 128 KB |

NOTE

BIOS Revision CA81020A.86A.0008.P04 or later is required for the board to properly support 850 and 866 MHz processors.

All supported onboard memory can be cached, up to the cachability limit of the processor.

| For information about | Refer to |
|--|----------------------|
| Processor support for the CA810E board | Section 1.2, page 16 |
| Processor data sheets | Section 1.2, page 16 |

ERRATA

1. *BIOS May Allow System to Boot When User Password is Enabled*

PROBLEM: If both User Password and Unattended Start are enabled in the BIOS Setup program, the system will boot from the diskette drive without prompting for a password if a bootable diskette is present in the drive.

IMPLICATION: An unauthorized user might be able to gain access to system data.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS release CA81020A.86A.0008.P04.

2. *BIOS Does Not Recognize Host Bus Adapters*

PROBLEM: Some SCSI host bus adapters are not recognized correctly by the BIOS during the boot process.

IMPLICATION: Users requiring a SCSI interface may not be able to boot from the SCSI hard drive.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS release CA81020A.86A.0008.P04.

3. *System May Not Boot From Bootable CD*

PROBLEM: The system may not boot from a bootable CD if an ATAPI CDROM is chosen as the first bootable device in the Boot Options menu of BIOS Setup.

IMPLICATION: Users who need to boot from a bootable CD may not have this functionality available.

WORKAROUND: None.

STATUS: This erratum was fixed in BIOS revision CA81020A.86A.0006.P03.

4. *Some SCSI Host Bus Adapters May Not Boot to The Hard Disk Drive With a Bootable CD-ROM Drive Attached*

PROBLEM: If a bootable CD-ROM is attached to the SCSI host bus adapter (HBA) and set as bootable in the setup menu of the SCSI HBA without bootable media installed, the system may not boot to the attached hard drive.

IMPLICATION: Users who wish to utilize a bootable SCSI CD-ROM in conjunction with a bootable hard drive on an add-in SCSI host bus adapter may not be able to boot to the hard drive if the SCSI adapter is set to recognize the CD-ROM as a bootable device.

WORKAROUND: Enable the CD-ROM as a bootable SCSI device only when using bootable media.

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

5. Intel® Pentium® III Processor Erratum E76

PROBLEM: For a complete description of the Pentium® III processor erratum E76, see the Pentium III Specification Update, order number 244453 found at <http://developer.intel.com/design/PentiumIII/specupdt/>.

IMPLICATION: For a complete description of the Pentium III processor erratum E76, see the Pentium III Specification Update, order number 244453 found at <http://developer.intel.com/design/PentiumIII/specupdt/>.

WORKAROUND: Update the CA810E desktop board with BIOS revision CA81020A.86A.0017.P08.

STATUS: This erratum was addressed in BIOS revision CA81020A.86A.0017.P08.

DOCUMENTATION CHANGES

The Documentation Changes listed in this section apply to the *CA810E Motherboard Technical Product Specification* (Order Number A03415). All Documentation Changes will be incorporated into a future version of that specification.

1. **Change to Description of Manufacturing Options**

In section 1.1.1, feature summary, table 1 will be changed as follows:

Table 2. Manufacturing Options

| | |
|-----------------------------------|--|
| Fan connector | Fan 3 without tachometer |
| Chassis Intrusion | Chassis intrusion detect connector |
| USB | USB front panel connector |
| Hardware Monitor Subsystem | <ul style="list-style-type: none"> • Wired for Management (WfM) compliant • Voltage sensor to detect out of range values |
| LAN Controller | Intel® 82559 PCI LAN controller with RJ-45 LAN connector Wake on LAN* technology |
| Power Management | Alert on LAN* component |

2. **Change to Description of Section 3.3.1, PCI Autoconfiguration**

Section 3.3.1, PCI Autoconfiguration, will be changed in its entirety as follows:

The BIOS can automatically configure PCI devices. PCI devices may be onboard or add-in cards. Autoconfiguration lets a user insert or remove PCI cards without having to configure the system. When a user turns on the system after adding a PCI card, the BIOS automatically configures interrupts, the I/O space, and other system resources. PCI devices can share an interrupt. Auto configuration information is stored in ESCD format.

For information about the versions of PCI supported by this BIOS, see Section 1.3.

3. **Change to Description of Section 3.9, BIOS Security Features**

Section 3.9, BIOS Security Features, will be changed in its entirety as follows:

3.9 BIOS Security Features

The BIOS includes security features that restrict access to the BIOS Setup program and restrict who can boot the computer. A supervisor password and a user password can be set for accessing the Setup program and for booting the computer, with the following restrictions:

- The supervisor password gives unrestricted access to view and change all the Setup options in the Setup program. This is supervisor mode.

- The user password gives restricted access to view and change Setup options in the Setup program. This is user mode.
- If only the supervisor password is set, pressing the <Enter> key at the password prompt of the Setup program allows the user restricted access to Setup.
- If both the supervisor and user passwords are set, users can enter either the supervisor password or the user password to access Setup. Users have access to Setup respective to which password is entered.
- Setting the user password restricts who can boot the computer. The password prompt will be displayed before the computer is booted. If only the supervisor password is set, the computer boots without asking for a password. If both passwords are set, the user can enter either password to boot the computer.

Table 56 shows the effects of setting the supervisor password and user password. This table is for reference only and is not displayed on the screen. This is default behavior and may be changed. Refer to Section 4.5, Security Menu, for details.

Table 56. Supervisor and User Password Functions

| Password Set | Supervisor Mode | User Mode | Setup Options | Password to Enter Setup | Password During Boot |
|-------------------------|--------------------------|--|---------------------------------------|--------------------------------|-----------------------------|
| Neither | Can change all options * | Can change all options * | None | None | None |
| Supervisor only | Can change all options | Can change a limited number of options | Supervisor Password | Supervisor | None |
| User only | N/A | Can change all options | Enter Password Clear User Password | User | User |
| Supervisor and user set | Can change all options | Can change a limited number of options | Supervisor Password Enter Password | Supervisor or user | Supervisor or user |

* If no password is set, any user can change all Setup options.

4. Change to Description of Section 4.5, Security Menu

Section 4.5, Security Menu, will be changed in its entirety as follows:

4.5 Security Menu

The menu bar is shown below.

| | | | | | | |
|-------------|------|----------|-----------------|-------|------|------|
| Maintenance | Main | Advanced | Security | Power | Boot | Exit |
|-------------|------|----------|-----------------|-------|------|------|

The menu represented in Table 71 is used for setting passwords and security features.

Table 71. Security Menu

| Feature | Options | Description |
|----------------------------|--|--|
| Supervisor Password Is | No options | Reports if there is a supervisor password set. |
| User Password Is | No options | Reports if there is a user password set. |
| Set Supervisor Password | Password can be up to seven alphanumeric characters. | Specifies the supervisor password. |
| Set User Password | Password can be up to seven alphanumeric characters. | Specifies the user password. |
| Clear User Password | No options | Clears the user password. |
| User Access Level (Note 2) | <ul style="list-style-type: none"> • Limited • No Access • View Only • Full (default) | <p>Specifies the amount of user access to the Setup program.</p> <p><i>Limited</i> allows only limited fields to be changed.</p> <p><i>No Access</i> prevents user access.</p> <p><i>View Only</i> allows the user to view but not change the fields in the Setup program.</p> <p><i>Full</i> allows any field to be changed except the supervisor password.</p> |
| Unattended Start (Note 1) | <ul style="list-style-type: none"> • Disabled (default) • Enabled | Disables or enables an unattended start. |

Notes:

1. This feature appears only if a User Password has been set.
2. This feature appears only if both a User Password and a Supervisor Password have been set.