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Desktop Board
CA810E
Specification Update

Release Date: January 2001

Order Number: A07908-007

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.

CONTENTS

Specification Update for CA810E Desktop Boards

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.

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 *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	1-6
A01988-302	A01993-302	CA81020A.86A.0003.P01	1-6
A01986-303	A01991-303	CA81020A.86A.0003.P01	1-6
A01988-303	A01993-303	CA81020A.86A.0003.P01	1-6
A01986-304	A01991-304	CA81020A.86A.0005.P02	1-6
A01988-304	A01993-304	CA81020A.86A.0005.P02	1-6
A01986-305	A01991-305	CA81020A.86A.0005.P02	1-6
A01988-305	A01993-305	CA81020A.86A.0005.P02	1-6
A01986-306	A01991-306	CA81020A.86A.0005.P02	1-6
A01988-306	A01993-306	CA81020A.86A.0005.P02	1-6
A01986-307	A01991-307	CA81020A.86A.0006.P03	1-6
A01988-307	A01993-307	CA81020A.86A.0006.P03	1-6
A01986-308	A01991-308	CA81020A.86A.0006.P03	1-6
A01988-308	A01993-308	CA81020A.86A.0006.P03	1-6
A01986-309	A01991-309	CA81020A.86A.0006.P03	1-6
A01988-309	A01993-309	CA81020A.86A.0006.P03	1-6
A01986-310	A01991-310	CA81020A.86A.0006.P03	1-6
A01988-310	A01993-310	CA81020A.86A.0006.P03	1-6

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

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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 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.

4. 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.

5. 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.

6. 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

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

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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 erratum referred to by number in the table below are found in the ERRATA section of this document.

PBA Revision	BIOS Revision	Errata That Apply
A01991-302	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-303	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-304	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-305	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-306	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4

PBA Revision	BIOS Revision	Errata That Apply
A01991-307	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-308	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-309	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01991-310	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-302	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-303	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4

PBA Revision	BIOS Revision	Errata That Apply
A01993-303	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-304	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-305	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-306	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-307	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-308	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4

PBA Revision	BIOS Revision	Errata That Apply
A01993-309	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4
A01993-310	CA81020A.86A.0003.P01	1-4
	CA81020A.86A.0005.P02	1-4
	CA81020A.86A.0006.P03	1-2, 4
	CA81020A.86A.0008.P04	4
	CA81020A.86A.0013.P05	4
	CA81020A.86A.0015.P06	4

‡ 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

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.

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	• 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 Secrity 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)	☐ Limited ☐ No Access ☐ View Only ☐ **Full (default)**	Specifies the amount of user access to the Setup program. *Limited* allows only limited fields to be changed. *No Access* prevents user access. *View Only* allows the user to view but not change the fields in the Setup program. *Full* allows any field to be changed except the supervisor password.
Unattended Start (Note 1)	☐ **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.