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Intel® Desktop Board D845PT Specification Update

The Intel® Desktop Board D845PT 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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Specification Update for the Intel® Desktop Board D845PT

REVISION HISTORY

Date of Revision	Version	Description
January 2002	-001	This document is the first Specification Update for the Intel® Desktop Board D845PT.
February 2002	-002	Added Erratum 2. Updated General Information.
March 2002	-003	Added Specification Change 1.
April 2002	-004	Added Specification Change 2.
September 2002	-005	Removed Printed Board Assembly (PBA) information from the document, as this reference is no longer valid. Updated Legal Disclaimer Section. Updated General Information Section.
October 2002	-006	Added Specification Change 3. Added Erratum 2.

PREFACE

This document is an update to the specifications contained in the *Intel® Desktop Board D845PT Technical Product Specification* (Order number *A75852*). 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® Pentium® 4 Processor Specification Update* (Order number 249199) for specification updates concerning the Intel Pentium 4 processor and that may apply to the desktop board D845PT. Unless otherwise noted in this document, it should be assumed that any processor errata for a given stepping are applicable to the Altered Assembly (AA) revision(s) associated with that stepping.

Refer to the *Intel® 845 Chipset: 82845 Memory Controller Hub (MCH) for DDR Specification Update* (Order Number 298603) for specification updates concerning the 82845 MCH Controller and that may apply to the desktop board D845PT. Unless otherwise noted in this document, it should be assumed that any MCH errata for a given stepping are applicable to the Altered Assembly (AA) revision(s) associated with that stepping.

Refer to the *Intel® 82801BA I/O Controller Hub 2 (ICH2) and Intel® 82801BAM I/O Controller Hub 2 Mobile (ICH2-M) Specification Update* (Order Number 298242) for specification updates concerning the 82801BA I/O Controller Hub and that may apply to the desktop board D845PT. Unless otherwise noted in this document, it should be assumed that any ICH 2 errata for a given stepping are applicable to the Altered Assembly (AA) 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 desktop board D845PT's behavior to deviate from published specifications. Hardware and software designed to be used with any given Altered Assembly (AA) and BIOS revision level must assume that all errata documented for that AA 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 the
Intel® Desktop Board D845PT

Intel® Desktop Board D845PT Specification Update

GENERAL INFORMATION

Basic Desktop Board D845PT Identification Information

AA Revision	BIOS Revision	Notes
A67848-501	PT84510A.86A.0012.P01	1-5
A67848-502	PT84510A.86A.0012.P01	1-5
A67848-503	PT84510A.86A.0012.P01	1-5
A67848-504	PT84510A.86A.0023.P04	1-5
A67365-501	PT84510A.86A.0012.P01	1-5
A67365-502	PT84510A.86A.0012.P01	1-5
A67365-503	PT84510A.86A.0012.P01	1-5
A67365-504	PT84510A.86A.0012.P01	1-5
A67365-505	PT84510A.86A.0023.P04	1-5
A74189-501	PT84510A.86A.0012.P01	1-5
A74189-502	PT84510A.86A.0012.P01	1-5
A74189-503	PT84510A.86A.0012.P01	1-5
A74189-504	PT84510A.86A.0012.P01	1-5
A74189-505	PT84510A.86A.0021.P03	1-5
A74189-506	PT84510A.86A.0023.P04	1-5
A74191-501	PT84510A.86A.0012.P01	1-5
A74191-502	PT84510A.86A.0012.P01	1-5
A74191-503	PT84510A.86A.0012.P01	1-5
A74191-504	PT84510A.86A.0021.P03	1-5
A74191-505	PT84510A.86A.0023.P04	1-5

NOTES:
1. The AA number is found on a small label on the component side of the board.
2. The 82845 Chipset kit used on this AA revision consists of three components as follows:

Device	Stepping	S-Spec Numbers
RG82845 MCH	B0	SL5YQ
82801BA ICH	B5	SL5WK
N82802AB 4Mbit FWH	A0 A1	SB48

3. Refer to the *Intel® Pentium® 4 Processor Specification Update* (Order Number 249199) for errata related to the Pentium 4 processor and that may apply to the desktop board D845PT.

4. Refer to the *Intel® 845 Chipset: 82845 Memory Controller Hub (MCH) for DDR Specification Update* (Order Number 298603) for errata related to the 82845 MCH that may apply to the desktop board D845PT.

5. Refer to the *Intel® 82801BA I/O Controller Hub 2 (ICH2) and Intel® 82801BAM I/O Controller Hub 2 Mobile (ICH2-M) Specification Update* (Order Number 298242) for errata related to the 82801BA I/O Controller Hub that may apply to the desktop board D845PT.

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Summary Table of Changes

The following table indicates the Specification Changes, Errata, Specification Clarifications, or Documentation Changes that apply to the desktop board D845PT. 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, driver, 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® Pentium® 4 processors
2	Doc	Support for additional Intel Pentium 4 processors
3	Doc	Support for additional Intel Pentium 4 processors; Support for Intel® Celeron® processors

NO.	PLANS	ERRATA
1	Fix	System hang during POST may occur when using certain USB cameras
2	PlanFix	Wake from an ACPI sleep state using wake methodologies may fail

SPECIFICATION CHANGES

The Specification Changes listed in this section apply to the *Desktop Board D845PT Technical Product Specification* (Order Number *A75852*). All Specification Changes will be incorporated into a future version of that specification.

1.   *Support For Faster Intel*® *Pentium*® *4 Processors*

Section 1.6, Processor, will change in its entirety as follows:

1.6   *Processor*

⚠ **CAUTION**

Use only the processors listed below. Use of unsupported processors can damage the board, the processor, and the power supply. See the Intel® Desktop Board D845PT/D845PT Specification Update *for the most up-to-date list of supported processors for these boards.*

The D845PT and D845PT boards support a single Pentium® 4 processor (in a µPGA478 socket) with a system bus of 400 MHz. The D845PT and D845PT boards support the processors listed in Table 5. All supported onboard memory can be cached, up to the cachability limit of the processor. See the processor's data sheet for cachability limits.

Table 5.   Supported Processors

Type	Designation	System Bus	L2 Cache Size
Pentium® 4 processor	1.5, 1.6, 1.7, 1.8, 1.9, and 2.0 GHz	400 MHz	256 KB
	2.0 and 2.1 GHz	400 MHz	512 KB

✏ **NOTE**

Use only ATX12V- or SFX12V-compliant power supplies with the D845PT and D845PT boards. ATX12V and SFX12V power supplies have an additional power lead that provides required supplemental power for the Intel® *Pentium 4 processor. Always connect the 20-pin and 4-pin leads of ATX12V and SFX12V power supplies to the corresponding connectors on the D845PT and D845PT boards, otherwise the board will not boot.*

Do not use a standard ATX power supply. The board will not boot with a standard ATX power supply.

For information about	Refer to
Processor support	Section 1.3, page 18
Processor usage	Section 1.3, page 18
Power supply connectors	Section 2.8.2.3, page 61

2. *Support For Additional Intel® Pentium® 4 Processors*

Section 1.6, Processor, will change in its entirety as follows:

1.6 *Processor*

⚠ CAUTION

Use only the processors listed below. Use of unsupported processors can damage the board, the processor, and the power supply. See the Intel® Desktop Board D845PT/D845PT Specification Update *for the most up-to-date list of supported processors for these boards.*

The D845PT and D845PT boards support a single Pentium® 4 processor (in a µPGA478 socket) with a system bus of 400 MHz. The D845PT and D845PT boards support the processors listed in Table 5. All supported onboard memory can be cached, up to the cachability limit of the processor. See the processor's data sheet for cachability limits.

Table 5.   Supported Processors

Type	Designation	System Bus	L2 Cache Size
Pentium® 4 processor	1.5, 1.6, 1.7, 1.8, 1.9, and 2.0 GHz	400 MHz	256 KB
	1.6, 1.8, 2.0 and 2.2 GHz	400 MHz	512 KB

✏ **NOTE**

Use only ATX12V- or SFX12V-compliant power supplies with the D845PT and D845PT boards. ATX12V and SFX12V power supplies have an additional power lead that provides required supplemental power for the Intel® Pentium® 4 processor. Always connect the 20-pin and 4-pin leads of ATX12V and SFX12V power supplies to the corresponding connectors on the D845PT and D845PT boards, otherwise the board will not boot.

Do not use a standard ATX power supply. The board will not boot with a standard ATX power supply.

For information about	Refer to
Processor support	Most recent D845PT Specification Update
Processor usage	Section 1.3, page 18
Power supply connectors	Section 2.8.2.3, page 61

3. Support For Additional Intel® Pentium® 4 Processors; Support For Intel® Celeron® Processors

Section 1.6, Processor, will change in its entirety as follows:

1.6 Processor

⚠ **CAUTION**

Use only the processors listed below. Use of unsupported processors can damage the board, the processor, and the power supply. See the Intel® Desktop Board D845BG/D845PT Specification Update *for the most up-to-date list of supported processors for these boards.*

The D845BG and D845PT boards support a single Pentium® 4 processor (in a µPGA478 socket) with a system bus of 400 MHz. The D845BG and D845PT boards support the processors listed in Table 5. All supported onboard memory

can be cached, up to the cachability limit of the processor. See the processor's data sheet for cachability limits.

Table 5. **Supported Processors**

Type	Designation	System Bus	L2 Cache Size
Pentium® 4 processor	1.4, 1.5, 1.6, 1.7, 1.8, 1.9, and 2 GHz	400 MHz	256 KB
	1.6A, 1.8, 2A and 2.20, 2.40, 2.50, and 2.60 GHz	400 MHz	512 KB
Celeron® processor	1.7, 1.8	400 MHz	128 KB

✏ **NOTE**

BIOS revision PT84510A.86A.0023.P04 or later is required to support 2A GHz Pentium® 4 processors and higher.
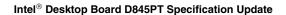
✏ **NOTE**

BIOS revision PT84510A.86A.0029.P07 or later is required to support 2A GHz Pentium 4 processors and higher.

✏ **NOTE**

BIOS revision PT84510A.86A.0023.P04 or later is required to support 1.7 GHz Celeron® processors and higher.

✏ **NOTE**

Use only ATX12V or SFX12Vcompliant power supplies with the D845BG and D845PT boards. ATX12V and SFX12V power supplies have an additional power lead that provides required supplemental power for the Intel® Pentium 4 processor. Always connect the 20-pin and 4-pin leads of ATX12V and SFX12V power supplies to the corresponding connectors on the D845BG and D845PT boards, otherwise the board will not boot.

Do not use a standard ATX power supply. The board will not boot with a standard ATX power supply.

For information about	Refer to
Processor support	Most recent D845BG Specification Update
Processor usage	Section 1.3, page 18
Power supply connectors	Section 2.8.2.3, page 61

ERRATA

1. *System Hang During POST May Occur When Using Certain USB Cameras*

PROBLEM: During the system boot, certain USB cameras may cause a hang during POST if the camera is on during the boot process.

IMPLICATION: Some USB cameras may cause a system hang if the camera is on during system boot due to the BIOS incorrectly identifying the camera as a bootable device.

WORKAROUND: Ensure that the USB camera is off during the system boot process.

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

2. *Wake From an ACPI Sleep State Using Wake Methodologies May Fail*

PROBLEM: The desktop board hardware leaves the Resume Well Power OK (RSM_PWROK) signal deasserted before and after the resume well power (VccSus3_3 and VccSus1_8) is valid, instead of asserting it for 10 ms after valid power, which is required by the Intel® 82801BA I/O Controller Hub 2 (ICH2) and Intel® 82801BAM I/O Controller Hub 2 Mobile (ICH2-M) Datasheet (order number 290687). The result is that LAN wake attempts may fail.

NOTE: Wake from LAN* using the MagicPacket* utility will not be affected by this errata.

IMPLICATION: Users that take advantage of LAN wake methods to wake systems from an ACPI sleep state may experience some wake failures.

WORKAROUND: None.

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