Intel® Desktop Boards
D845EPT2 and D845EBG2
Quick Reference

This guide is written for technically qualified personnel with experience installing and configuring desktop boards.

Before You Begin

Desktop Board Components

Supported Components

Installation Steps

Using the BIOS Setup Program

Setting the BIOS Configuration Jumper Block

Items on the Intel® Express Installer CD-ROM

- Product warranty
- Intel Express Installer
- *Intel® Desktop Boards D845EPT2 and D845EBG2 Product Guide*
- Software utilities and drivers
- Software license agreement
- Readme file

Part Number: A84613-002

Getting Help

View or download product support information from Intel's World Wide Web site:

http://support.intel.com/support/motherboards/desktop/

Follow the link to your Intel® Desktop Board for the following information:

- Known Issues and Solutions
- Software and Drivers (latest BIOS and driver updates)
- Compatibility (supported Intel® processors and memory information)
- Product Documentation
  — Technical Product Specification
  — Specification Update

If you can't find the information you need on the Web, contact your point of purchase. The Intel World Wide Web site also includes telephone numbers and billing charges, if applicable, for Intel customer support.

Before You Begin

Warning and Cautions

⚠ **WARNING**

Disconnect the board's power supply from its AC power source before you connect or disconnect cables, or install or remove any board components. Failure to do this can result in personal injury or equipment damage. Some circuitry on the desktop board can continue to operate even though the front panel power switch is off.

⚠ **CAUTION**

Electrostatic discharge (ESD) can damage desktop board components. Install the board at an ESD-controlled workstation. If such a workstation is not available, wear an antistatic wrist strap or touch the surface of the antistatic package before handling the board.

⚠ **CAUTION**

Many of the midboard and front panel connectors provide operating voltage (+5 V DC and +12 V DC, for example) to devices inside the computer chassis, such as fans and internal peripherals. These connectors are not overcurrent protected. Do not use these connectors for powering devices external to the computer chassis. A fault in the load presented by the external devices could cause damage to the computer, the interconnecting cables, and the external devices themselves.

Safety and Regulatory Notice

See the *Intel® Desktop Boards D845EPT2 and D845EBG2 Product Guide* for all applicable regulatory compliance statements, product certification markings, and safety and electromagnetic compatibility (EMC) standards and regulations these desktop boards are compliant with.

Replacement battery warning label provided: Place the label inside the chassis in an easy-to-see location near the battery but not on the board itself.

Intended uses: This product was evaluated as information technology equipment (ITE) for home or office use when installed into an appropriate computer chassis. Other end uses or locations may require further evaluation.

Desktop Board Components

Line In

USB 2.0 Devices

USB 2.0 Devices

A B C D

AA

Z

Y

X

W

V

E

F

G

H

I

J

K

L

U T S R Q P   O   N M

No Connection

On

Reset

Power LED

HD LED

2 | 1

3
1

2-pin alternate
power/sleep LED
connector
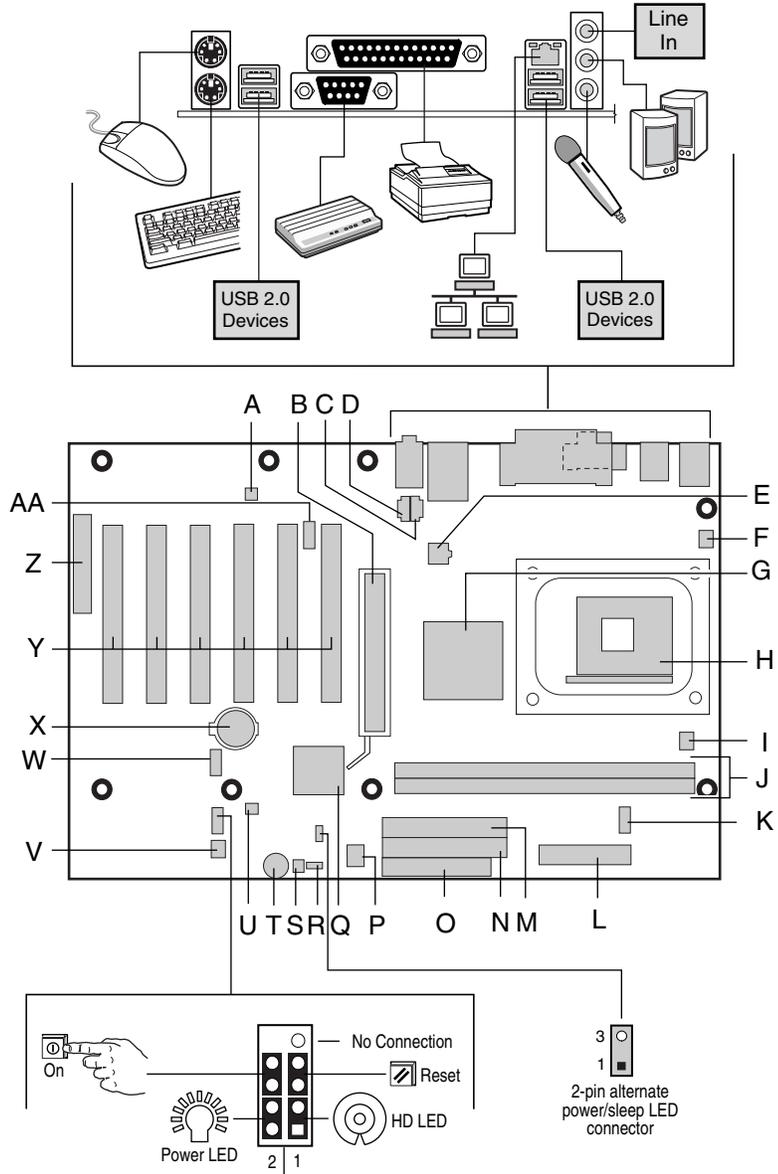
OM13655

continued

Desktop Board Components (continued)

A. Analog Devices Inc. AD1981A codec
B. AGP connector (1.5 V only)
C. CD-ROM connector (ATAPI)
D. Auxiliary line-in connector (ATAPI)
E. 12 V processor core voltage connector
F. Rear chassis fan connector (tachometer input)
G. Intel® 82845E Memory Controller Hub (MCH)
H. Processor socket
I. Processor fan connector (tachometer input)
J. DIMM sockets
K. Serial port B connector
L. Power connector
M. Secondary IDE connector

N. Primary IDE connector
O. Diskette drive connector
P. Firmware Hub (FWH)
Q. Intel® 82801DB I/O Controller Hub (ICH4)
R. BIOS configuration jumper block
S. SCSI hard drive activity LED connector
T. Speaker
U. Chassis intrusion connector
V. Front chassis fan connector
W. Front panel USB 2.0 connector
X. Battery
Y. PCI bus add-in card connectors
Z. Communication and Networking Riser (CNR) (optional)
AA. Front panel audio connector

⚠ **CAUTION**

Failure to use an ATX12V power supply, or not connecting the additional power supply lead to the Desktop Board D845EPT2 or D845EBG2 may result in damage to the desktop board and/or power supply.

For more information on the ATX12V power supply, refer to the Intel Desktop Boards D845EPT2 and D845EBG2 Product Guide *on the Intel® Express Installer CD-ROM.*

✏ **NOTE**

The number of PCI slots on your board may differ from those in the illustration.

Supported Components

Processors

The board supports the following processors:

Type	Designation	Front Side Bus Frequency	L2 Cache
Intel® Pentium® 4 processor on .13 micron process in an mPGA-478 package	2.40 and 2.26 GHz	533 MHz	512 KB
Intel Pentium 4 processor on .13 micron process in an mPGA-478 package	2.20, 2A, 1.80A, and 1.60A GHz	400 MHz	512 KB
Intel Pentium 4 processor on .18 micron process in an mPGA-478 package	2, 1.90, 1.80, 1.70, 1.60, and 1.50 GHz	400 MHz	256 KB

For the latest information on processors supported by the Desktop Boards D845EPT2 and D845EBG2, refer to the Intel customer support World Wide Web site:

http://support.intel.com/support/motherboards/desktop

Memory Module Requirements

The desktop boards supports system memory as defined below:

- Up to two 184-pin Double Data Rate (DDR) 200/266 SDRAM Dual Inline Memory Modules (DIMMs) with gold-plated contacts
- Unbuffered and non-registered single or double-sided DIMMs
- Serial Presence Detect (SPD) memory
- Non-ECC and ECC DIMMs
- 2.5 V memory only

✏ **NOTES**

The Desktop Boards D845EPT2 and D845EBG2 have been designed to support DIMMs based on 512 Mbit technology up to 2 GB, but this technology has not been validated on these boards.

All memory components and DIMMs used with the desktop boards must comply with the PC SDRAM specifications. These include the PC SDRAM Specification (memory component specific), the PC Unbuffered DIMM Specification. To view or download these specifications, refer to this Intel World Wide Web site:

http://www.intel.com/technology/memory/pcsdram/

For information about vendors that support these memory requirements, refer to the Desktop Boards D845EPT2 and D845EBG2 link on this Intel World Wide Web site:

http://support.intel.com/support/motherboards/desktop/

Installation Steps

1 Installing the I/O Shield

The desktop board comes with an I/O shield. Install the I/O shield before installing the board in the chassis. Place the shield inside the chassis as shown in the following figure. Press the shield into place so that it fits tightly and securely. If the shield doesn't fit, obtain a properly-sized shield from the chassis supplier.
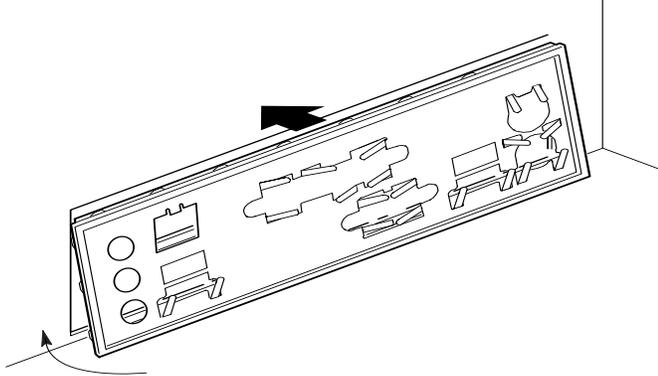
OM11543

2 Installing the Desktop Board

⚠ **CAUTION**

Failure to use an ATX12V power supply, or not connecting the additional power supply lead to the Desktop Boards D845EPT2 and D845EBG2 may result in damage to the desktop board and/or power supply.

For more information on the ATX12V power supply, refer to the Intel Desktop Boards D845EPT2 and D845EBG2 Product Guide *on the Intel Express Installer CD-ROM.*

Refer to your chassis manual for specific instructions on installing and removing the desktop board. Secure the desktop board to the chassis standoffs by using the screws.

The Desktop Board D845EBG2 is secured to the chassis by eight screws and Desktop Board D845EPT2 is secured by six screws. Refer to the illustration on page 4 for the location of the mounting holes.

3 Installing the Processor

1. Observe the precautions in "Before You Begin" on page 3.
2. Lift the processor socket lever.
3. Install the processor so that the corner with the triangle marking (A) is aligned with the corner where the lever is attached to the socket.
4. Lower the lever back to its original position.
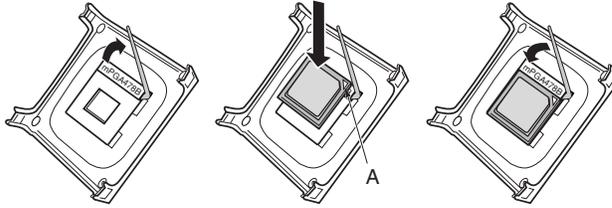
OM12078

5. The desktop boards come with an integrated processor heat sink retention mechanism (RM). For instructions on how to install the processor fan heat sink, refer to the boxed processor manual or the Intel customer support World Wide Web site:
   http://support.intel.com/support/processors/pentium4/intnotes478.htm

## 4 Installing the Memory Modules

⚠ **CAUTION**

Install memory in the DIMM sockets prior to installing the AGP video card to avoid interference with the memory retention mechanism.

The Desktop Boards D845EPT2 and D845EBG2's two DIMM sockets are arranged as banks 0 and 1, as shown in the following figure. If installing a single DIMM, install it in bank 0.

To install DIMMs, follow these steps:

1. Observe the precautions in "Before You Begin" on page 3.
2. Remove the AGP video card if it interferes with the DIMM clips from being easily opened and closed.
3. Align the small notch in the bottom edge of the DIMM with the key in the socket.

4. When the DIMM is inserted, push down on the top edge of the DIMM until the retaining clips snap into place. Make sure the clips are firmly in place.
5. Reinstall the AGP card if you removed it before installing the DIMMs.
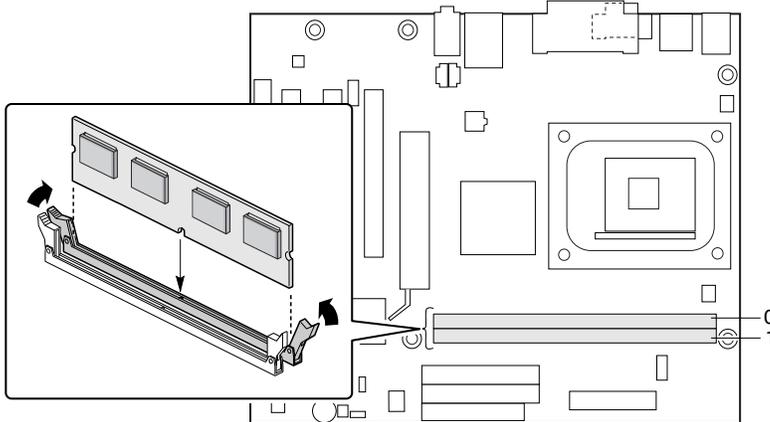
OM13666

5   Installing an AGP Card

✏ **NOTE**

The Desktop Boards D845EPT2 and D845EBG2 are compatible only with 1.5 V AGP cards.

The Desktop Boards D845EPT2 and D845EBG2 have an integrated AGP card retention mechanism. Follow these instructions to install an AGP card.
1. Observe the precautions in "Before You Begin" on page 3.
2. Place the AGP card in the AGP connector.
3. Press down on the card until it is completely seated in the connector and the card retention notch snaps into place below the RM.
4. Secure the card's metal bracket to the chassis back panel with a screw.

To remove the AGP card, push back on the RM lever (A) until the retention pin completely clears the notch in the card.
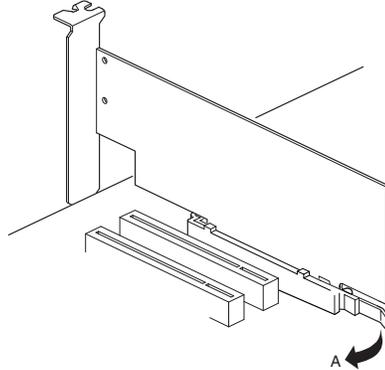
OM13851

6 Connecting the Fans

The following figure shows the location of the fan connectors. Connect the processor's fan heatsink cable to the processor fan connector on the board. Connect the chassis fan cables to the board connectors as shown in the figure below.
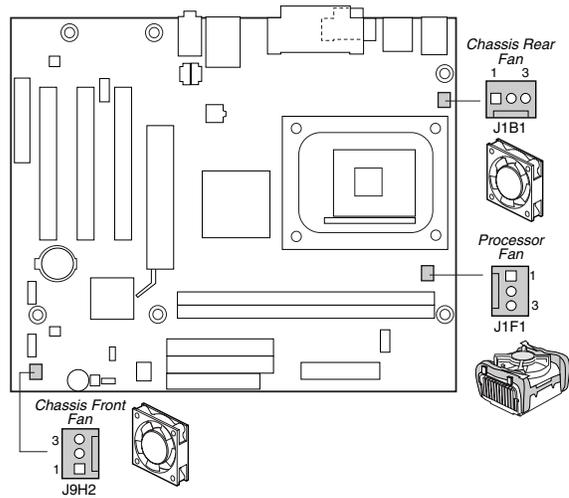

OM13656

7   Attaching the IDE Drives

The Intel® boxed desktop board package includes two IDE cables. Either cable can connect two drives to the desktop board. The cables support the Ultra DMA-33 (40-contact, 40-conductor) or ATA-66/100 (40-contact, 80-conductor) transfer protocols and are backward compatible with drives using slower IDE transfer protocols.

The cable will work correctly only when oriented as shown in the following figure. For correct cable function:

1.   Observe the precautions in "Before You Begin" on page 3.

2.   Attach the cable end with the single connector (A) to the board.

3.   Attach the cable end with the two closely spaced connectors (B) to the drives.
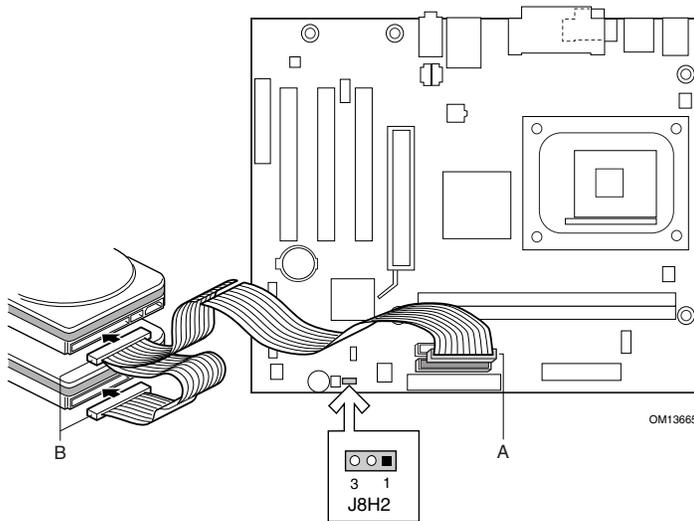
Using the BIOS Setup Program

The BIOS Setup program can be used to view and change the BIOS settings for the computer. The BIOS Setup program is accessed by pressing the <F2> key after the Power-On Self-Test (POST) memory test begins and before the operating system boot begins.

Setting the BIOS Configuration Jumper Block

⚠ **CAUTION**

Always turn off the power and unplug the power cord from the computer before changing the jumper block settings. Moving the jumper with the power on may result in unreliable computer operation.

The BIOS configuration jumper block determines the operating mode of the BIOS Setup Program and enables BIOS recovery in the event of a failed BIOS update (see the previous figure for the location of the jumper).

The following table describes the jumper block settings for the BIOS Setup configuration jumper.

BIOS Setup Configuration Jumper Block (J8H2) Settings

Jumper Setting	Mode	Description
○▮▮ □ 3 1	Normal (default) (1-2)	The BIOS uses the current configuration and passwords for booting.
▮▮▮ ■ 3 1	Configure (2-3)	After the Power-On Self-Test (POST) runs, the BIOS displays the Maintenance Menu. Use this menu to clear passwords.
○ ○ ■ 3 1	Recovery (None)	The BIOS recovers data from a recovery diskette in the event of a failed BIOS update.*

*To update or recover the BIOS, see the instructions in the *Intel Desktop Boards D845EPT2 and D845EBG2 Product Guide* on the Intel Express Installer CD-ROM.

For a complete list of BIOS Setup settings, see:

- The *Intel Desktop Boards D845EPT2 and D845EBG2 Product Guide* on the Intel Express Installer CD-ROM
- The Intel customer support World Wide Web Site at *http://support.intel.com/support/motherboards/desktop/*

Intel® 桌面母板
D845EPT2 和 D845EBG2
快速参考指南

本指南仅供具备安装和配置桌面母板经验的合格技术人员使用。

开始之前

桌面母板元件

支持的元件

安装步骤

Intel® Express Installer（Intel 快速安装程序）光盘上提供的项目

- 产品保修书
- Intel 快速安装程序
- Intel® 桌面母板 D845EPT2 和 D845EBG2 产品指南
- 软件实用程序和驱动程序
- 软件许可证协议
- 自述文件

获取帮助

您可从以下 Intel 万维网站点查看或下载产品的支持信息：

http://support.intel.com/support/motherboards/desktop/

请通过链接进入您所使用的 Intel® 桌面母板的网页，以获取以下信息：

- 已知问题及解决方法
- 软件和驱动程序（最新 BIOS 和驱动程序更新）
- 兼容性（关于所支持的 Intel® 处理器和内存的信息）
- 产品文档
    — 产品技术规格
    — 产品规格更新

如果在万维网上找不到需要的信息，请与您的经销商联系。Intel 万维网站点上还列出了 Intel 客户支持的电话号码及收费标准（若需收费）。

开始之前

警告和注意

⚠ 警告

在连接或断开电缆、安装或拆卸任何母板元件之前，请将母板的交流电源切断。否则，可能会导致人身伤害或损坏设备。即使在关闭前面板电源开关以后，桌面母板上的某些电路仍可能继续带电。

⚠ 注意

静电放电 (ESD) 能损坏桌面母板的元件。请在控制 ESD 的工作台上安装母板。如果没有防静电工作台可用，请在接触母板之前佩戴防静电腕带或触摸防静电包的表面。

⚠ 注意

许多中间板和前面板连接器为计算机机箱内的设备（如风扇和内部的外围设备）提供工作电压，例如直流 +5 V 和直流 +12 V 电压。这些连接器不具备过载保护功能。请不要使用这些连接器为计算机机箱外的设备提供电源。由外部设备产生的负载故障可能会损坏计算机、互连电缆和外部设备自身。
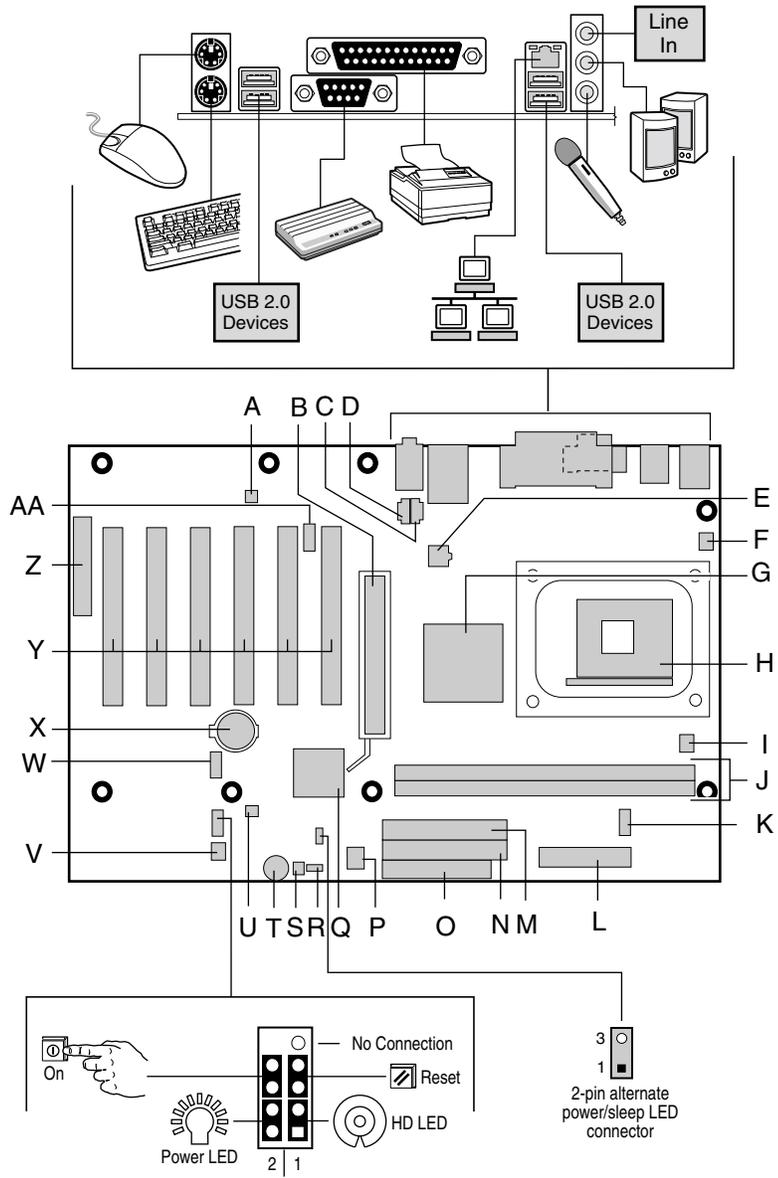
安全和规范通告

有关此产品符合的所有标准及规范的声明、产品认证标志、安全与电磁兼容性 (EMC) 标准以及所符合的各种规范及规章等详情，请参阅《Intel® 桌面母板 D845EPT2 和 D845EBG2 产品指南》。

提供的更换电池警告标签：请将此标签贴在机箱内靠近电池且显眼的位置，注意不要贴在母板上。

设计应用领域：此产品经过评估测试，认定为信息技术设备 (ITE)，可安装于家用和商用个人计算机机箱中。此产品在其它应用领域或应用环境的适用性，有待进一步鉴定。

桌面母板元件

Line In

USB 2.0 Devices

USB 2.0 Devices

A B C D

AA

Z

Y

X

W

V

E

F

G

H

I

J

K

U T S R Q P   O   N M   L

No Connection

On

Reset

HD LED

Power LED

2 | 1

3
1

2-pin alternate power/sleep LED connector

OM13655

桌面母板元件（续）

A. Analog Devices Inc. AD1981A
   编码解码器
B. AGP 连接器（仅 1.5 V）
C. CD-ROM 连接器 (ATAPI)
D. 辅助线路输入连接器 (ATAPI)
E. 12 V 处理器内核电压连接器
F. 机箱背面风扇连接器
   （转速计输入）
G. Intel® 82845E 内存控制器
   枢纽 (MCH)
H. 处理器插座
I. 处理器风扇连接器
   （转速计输入）
J. DIMM 插座
K. 串行端口 B 连接器
L. 电源连接器
M. 次 IDE 连接器

N. 主 IDE 连接器
O. 软盘驱动器连接器
P. 固件枢纽 (FWH)
Q. Intel® 82801DB I/O 控制器
   枢纽 (ICH4)
R. BIOS 配置跳线块
S. SCSI 硬盘驱动器活动
   LED 指示灯连接器
T. 扬声器
U. 机箱开启连接器
V. 机箱前面风扇连接器
W. 前面板 USB 2.0 连接器
X. 电池
Y. PCI 总线附加卡连接器
Z. 通信和联网竖卡 (CNR) 连接器
   （可选）
AA. 前面板音频连接器

⚠ 注意

若未使用 ATX12V 电源系统，或未为 D845EPT2 或 D845EBG2 桌面母板
连接附加电源系统引线，可能会对桌面母板和／或电源系统造成损害。

有关 ATX12V 电源系统的详情，请参阅 Intel® Express Installer
（Intel 快速安装程序）光盘上的《Intel 桌面母板 D845EPT2 和
D845EBG2 产品指南》。

✏ 注释

您的桌面母板上的 PCI 插槽数量可能与图示中的插槽数量不同。

支持的元件

处理器

本母板支持下列处理器：

类型	频率标志	前端总线频率	二级高速缓存
Intel® Pentium® 4 处理器，采用 .13 微米工艺及 mPGA-478 封装	2.40 和 2.26 GHz	533 MHz	512 KB
Intel Pentium 4 处理器，采用 .13 微米工艺及 mPGA-478 封装	2.20, 2A, 1.80A 和 1.60A GHz	400 MHz	512 KB
Intel Pentium 4 处理器，采用 .18 微米工艺及 mPGA-478 封装	2, 1.90, 1.80, 1.70, 1.60 和 1.50 GHz	400 MHz	256 KB

有关 D845EPT2 和 D845EBG2 桌面母板所支持处理器的最新信息，请访问以下 Intel 客户支持万维网站点：

http://support.intel.com/support/motherboards/desktop

内存模块要求

本桌面母板支持如下定义的系统内存：

- 最多安装两个带有镀金触点的 184 针双数据传输速率 (DDR) 200/266 SDRAM 双列直插式内存模块 (DIMM)
- 无缓冲和无寄存单面或双面 DIMM
- 串行设备检测 (SPD) 内存
- 非 ECC（错误校正）和 ECC DIMM
- 仅支持 2.5 V 内存

✏ 注释

根据 D845EPT2 和 D845EBG2 桌面母板的设计，可支持安装 512 Mbit 的 DIMM 内存模块，最高内存容量可达 2 GB，但此技术在这些母板上的应用尚未得到验证。

本桌面母板使用的所有内存元件和 DIMM 内存模块必须符合 PC SDRAM 规格。包括 PC SDRAM 规格（内存元件规格）和 PC 无缓冲 DIMM 规格。欲查看或下载这些规格，请访问以下 Intel 万维网站点：

http://www.intel.com/technology/memory/pcsdram/

有关支持这些内存要求的产品供应商的详情，请访问以下 Intel 万维网站点中的 D845EPT2 和 D845EBG2 链接：

http://support.intel.com/support/motherboards/desktop/

安装步骤

1 安装 I/O 防护板

随本桌面母板提供了一块 I/O 防护板。在机箱中安装母板之前，应先安装 I/O 防护板。如下图所示，将防护板放入机箱中。沿箭头所指方向推压防护板，使其紧固到位。如果防护板不适合机箱的尺寸，请从机箱供应商处获取尺寸合适的防护板。
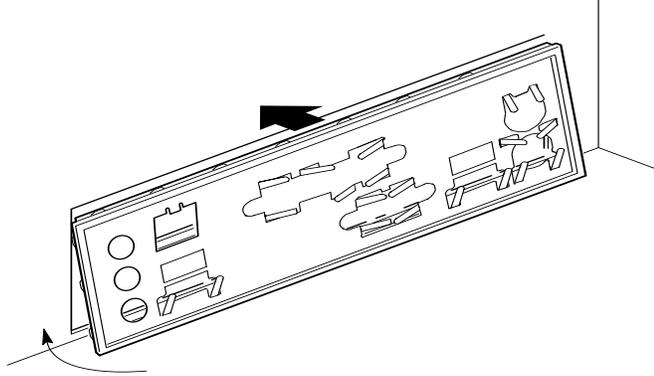
OM11543

2 安装桌面母板

⚠ 注意

> 若未使用 ATX12V 电源系统，或未为 D845EPT2 或 D845EBG2 桌面母板连接附加电源系统引线，可能会对桌面母板和 / 或电源系统造成损害。

> 有关 ATX12V 电源系统的详情，请参阅 Intel Express Installer（Intel 快速安装程序）光盘上的《Intel 桌面母板 D845EPT2 和 D845EBG2 产品指南》。

有关安装和拆卸桌面母板的说明，请参阅机箱手册。使用螺丝将桌面母板固定在机箱的支撑立柱上。

桌面母板 D845EBG2 需要使用 8 颗螺丝固定到机箱内，而桌面母板 D845EPT2 则需要使用 6 颗螺丝固定。有关安装孔位置的信息，请参阅第 4 页的母板图示。

3 安装处理器

1. 请遵守"开始之前"中的注意事项（参阅第 3 页）。

2. 将处理器插座的拉杆完全抬起。

3. 让处理器上有三角标志的一角 (A) 与插座上连接拉杆的一角对齐，将处理器插入插座中。

4. 将拉杆按回原位。
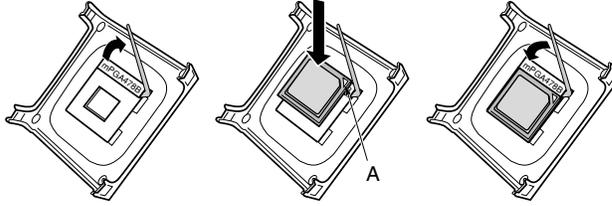
OM12078

5. 随本桌面母板提供了一个集成的处理器散热器固定架 (RM)。有关安装处理器风扇散热器的说明，请参阅产品包装盒中附送的处理器手册，或访问以下 Intel 客户支持万维网站点：
http://support.intel.com/support/processors/pentium4/intnotes478.htm

4 安装内存模块

⚠ 注意

在安装 AGP 视频卡之前，请先将内存安装到 DIMM 插座上，以避免内存固定架妨碍您的操作。

在桌面母板 D845EPT2 和 D845EBG2 上有两个 DIMM 内存模块插座，分别标示为 Banks 0 和 Bank 1，如下图所示。如果只安装一条 DIMM 内存模块，请将其安装在 Bank 0 中。

要安装 DIMM（双列直插式内存模块），请按以下步骤操作：

1. 请遵守"开始之前"中的注意事项（参阅第 3 页）。

2. 卸下 AGP 视频卡（在您打开和关闭 DIMM 卡固销子比较困难的情况下）。

3. 将 DIMM 底边的小凹口与插座上的卡固销子对齐。

4. 插入 DIMM 期间，按住 DIMM 的顶边向下推压，直到卡固销子将其卡固到位。确保销子已牢牢夹紧。

5. 若在安装 DIMM 前拆卸了 AGP 视频卡，重新将此卡安装到位。
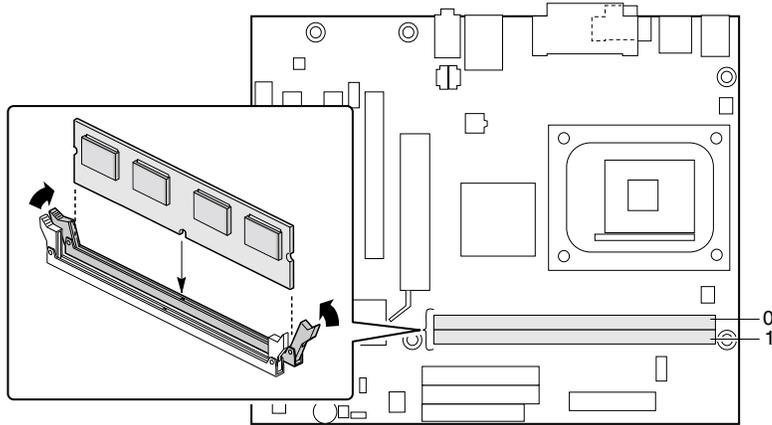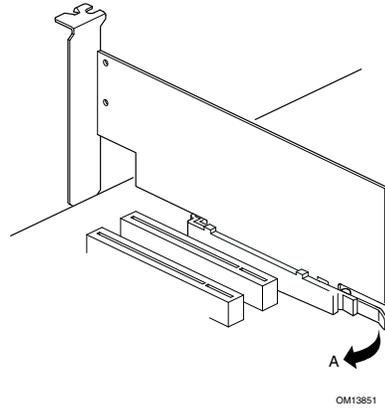

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5 安装 AGP 卡

✏️ 注释

桌面母板 D845EPT2 和 D845EBG2 仅与 1.5 V AGP 卡兼容。

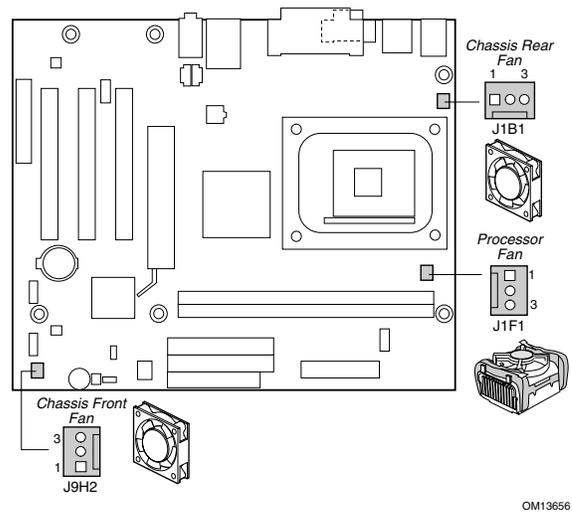随桌面母板 D845EPT2 和 D845EBG2 提供了一个集成的 AGP 卡固定架。要安装 AGP 卡，请按以下步骤操作：

1. 请遵守 "开始之前" 中的注意事项（参阅第 3 页）。
2. 将 AGP 卡放入 AGP 连接器。
3. 向下推压卡的边缘，直到它完全卡入 AGP 卡连接器，使卡的固定槽口完全与固定架下方的卡固销子卡扣啮合。
4. 用螺丝将卡的金属支架固定到机箱的背面板上。

要卸下 AGP 卡，推动固定架拉杆 (A)，直到卡固销子完全脱离卡上的凹口。

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6   连接风扇

下图显示了风扇连接器的位置。将处理器风扇散热器电缆连接到母板上的处理器风扇连接器上。将机箱风扇电缆连接到母板上的连接器上（如下图所示）。
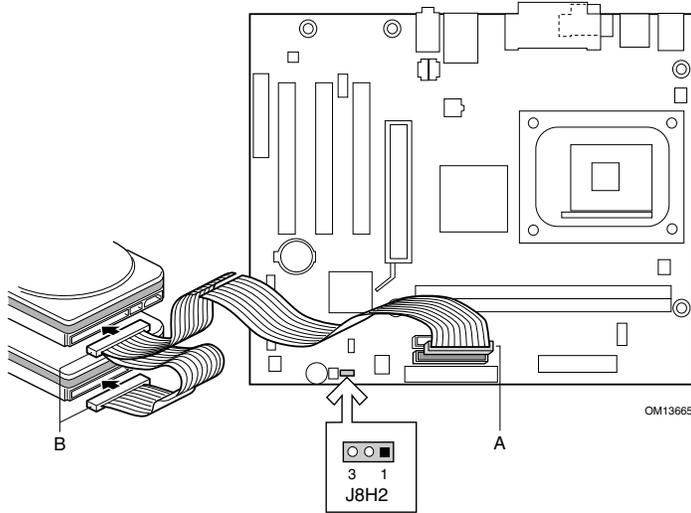

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7 安装 IDE 驱动器

Intel® 原装桌面母板包装盒内有两条 IDE 电缆。每条电缆可将两个驱动器连接到桌面母板上。40 触点 40 芯电缆支持 Ultra DMA-33 传输协议；40 触点 80 芯电缆支持 ATA-66/100 传输协议，两者都可向后兼容使用更慢速 IDE 传输协议的驱动器。

如下图所示调整好电缆的方向，电缆才能正常工作。要使电缆正常工作：

1. 请遵守"开始之前"中的注意事项（参阅第 3 页）。

2. 将电缆带有单连接器的一端 (A) 连接到母板上。

3. 将电缆带有相邻双连接器的一端 (B) 连接到驱动器上。

使用 BIOS SETUP（设置）程序

BIOS Setup（设置）程序可用于查看和更改计算机的 BIOS 设置。在开机自检 (POST) 内存测试开始之后、操作系统启动之前，按 <F2> 键可以进入 BIOS Setup（设置）程序。

设置 BIOS 配置跳线块

⚠ 注意

更改跳线块设置之前，必须先关闭计算机电源，并从计算机上拔下电源电缆。若在计算机处于通电状态下调整跳线，可能导致计算机运行不稳定。

BIOS 配置跳线块决定 BIOS Setup（设置）程序的工作模式，且在 BIOS 更新失败时可进行 BIOS 恢复（有关跳线块位置的信息，请参阅以上图示）。

下表列出了 BIOS Setup（设置）程序不同配置的跳线设置。

BIOS Setup（设置）程序配置跳线块 (J8H2) 的设置

跳线设置	模式	说明
○■■ 3　1	正常 (默认) (1-2)	BIOS 使用当前配置和口令来启动系统。
■■□ 3　1	配置 (2-3)	开机自检 (POST) 运行后，BIOS 显示 Maintenance（维护）菜单。通过此菜单可清除口令。
○○■ 3　1	恢复 (无插接)	如果更新 BIOS 失败，BIOS 将从一张恢复软盘中恢复原来的 BIOS 设置数据。*

* 有关更新或恢复 BIOS 的说明，请参阅 Intel Express Installer（Intel 快速安装程序）光盘上的《Intel 桌面母板 D845EPT2 和 D845EBG2 产品指南》。

要查阅 BIOS Setup（设置）程序各项设置的完整列表，请：

- 参阅 Intel Express Installer（Intel 快速安装程序）光盘上的《Intel 桌面母板 D845EPT2 和 D845EBG2 产品指南》
- 访问以下 Intel 客户支持万维网站点：
  http://support.intel.com/support/motherboards/desktop/