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If you do not properly set the motherboard settings, causing the motherboard to malfunction or fail, we cannot guarantee any responsibility.

BG7mL Motherboard

User's Manual

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Chapter 1. Quick Installation Guide

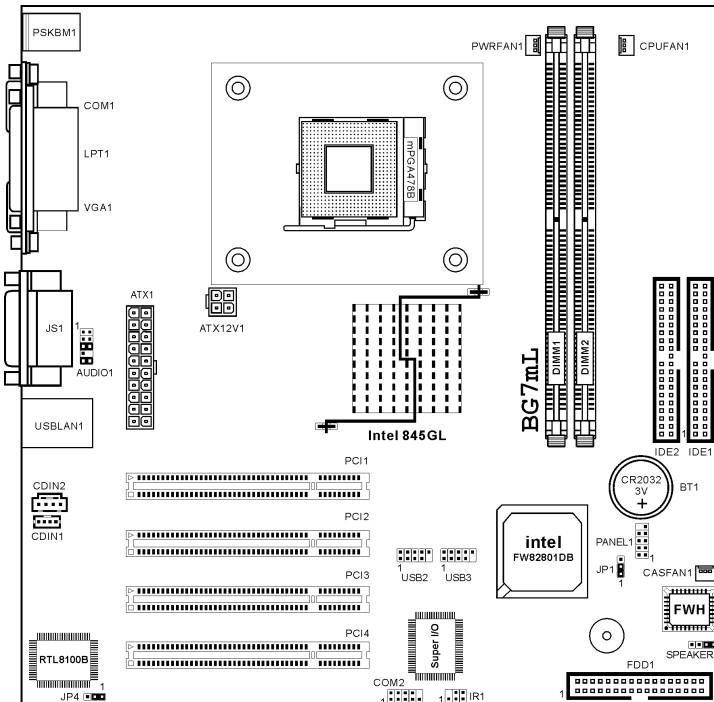
For more detailed information on this motherboard, please refer to our full version of the user's manual. This **Quick Installation Guide** is meant for experienced system builders. If this is your first attempt at setting up computer system, we suggest that you to read the full version manual first, or ask a technician to help you set up the computer system.

1-1. (Chinese) BG7mL 快速安裝指引

感謝您購買 ABIT 的主機板，此主機板是設計給 Intel Socket 478 Pentium 4 處理器使用。支援 Intel Socket-478 架構的處理器，並支援最高至 2GB 容量的 DDR 記憶體模組。

如您要瞭解此主機板更詳細的資訊，請參閱我們的完整版使用手冊，裡面會有詳盡的說明。此快速安裝手冊是給有經驗的系統組裝者使用，如果這是您第一次嘗試來組裝您的電腦系統，我們建議您先去閱讀完整版的使用手冊，或是詢問技術人員來幫助您組裝您的電腦系統。

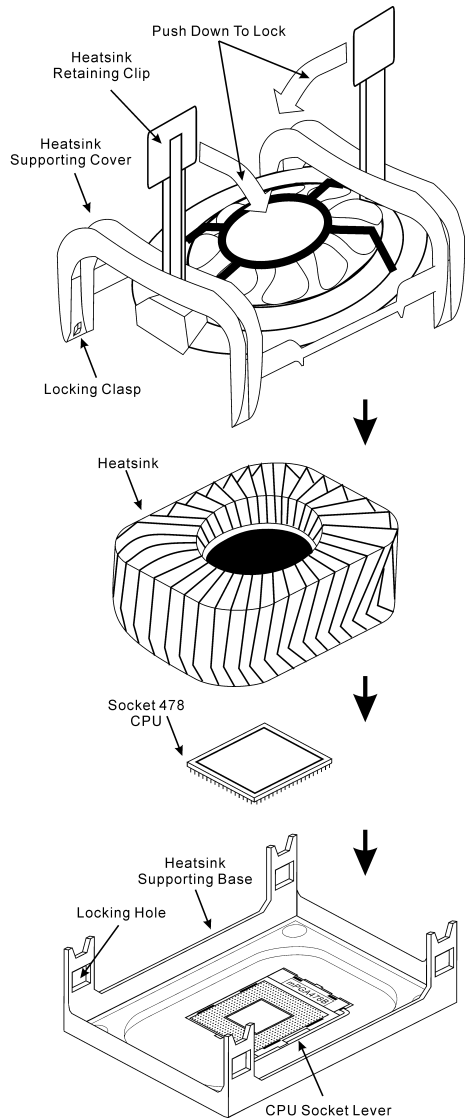
BG7mL 主機板主要元件配置圖



處理器的安裝

若您置入處理器的方向不對，您將無法輕易地將處理器插入 Socket 478 插座，而且處理器的針腳將無法完全進入腳座。如果發現有這種現象時，請您改變處理器的方向，直到它能輕易且完全插入 Socket 478。同時您必需檢視處理器溫度偵測熱敏電阻的高度（如果有的話），然後再小心的將 Intel Pentium 4 處理器安裝到 Socket 478 腳座上去。

安裝散熱器與散熱風扇是必需的，那樣可以讓您的處理器適當地散熱。未安裝這些散熱裝置可能導致處理器過熱並且會損壞您的處理器。Intel Socket 478 處理器在運作時會產生大量的熱量，所以您需要使用專門為 Intel Socket 478 處理器設計的大型散熱風扇。否則，可能導致過熱且會損壞您的處理器。處理器風扇未裝置妥當並且風扇電源線尚未連接妥當之前，請不要把 ATX 電源供應器的電源纜線接到主機板上。如此將可避免一些潛在損壞處理器的可能性。



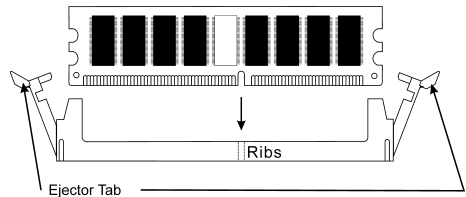
將主機板安裝到機殼上

當您將處理器安裝到主機板上之後，您便可以開始將主機板固定到電腦機殼裡去。首先；請您先將主機板固定到電腦機殼。大多數的電腦機殼底座都有許多的固定孔位，請將主機板上的固定孔位與機殼底座上的固定孔位對準。如果孔能對準並且有螺絲孔，就表示可使用銅柱來固定主機板。另外；您可以使用塑膠墊片來讓螺絲與主機板的 PCB 表層隔離（絕緣）。

安裝系統記憶體

本主機板提供 2 組 184 腳的 DDR DIMM 插座可供記憶體擴充，可支援 DDR SDRAM 的最小記憶體大小為 64MB，而最大的記憶體大小則為 2GB。

將 DDR DIMM 記憶體模組插入 DIMM 插槽。請注意記憶體模組的楔子是如何對應到 DIMM 插槽上的卡榫之上。此種設計可確保 DDR DIMM 記憶體模組僅能由一個方向插到 DIMM 插槽之上。當您將 DDR DIMM 記憶體模組完全插入



DIMM 插槽時，模組退出（固定）夾應該會將 DDR DIMM 記憶體模組自兩側卡緊並緊緊地固定住記憶體模組。請依 DIMM1~DIMM2 插槽的順序來安裝記憶體模組。

最後；您必需將所有必需的裝置纜線連接到主機板上相關的連接頭或是連接器上面，以完成您系統的硬體安裝動作。

連接器、連接頭以及附加卡的安裝

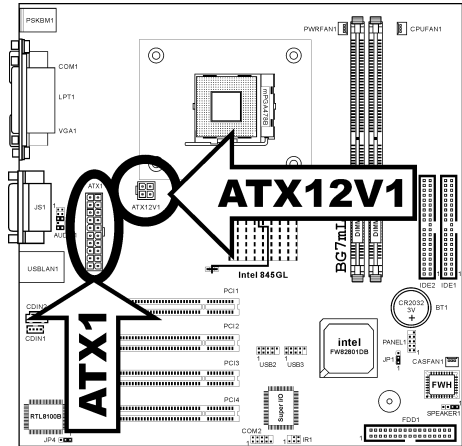
在任何一部電腦機殼的裡面，都必需連接一些纜線與插頭。這些纜線與插頭通常都是一對一的連接至主機板的連接埠上，您必需注意任何一條纜線的連接方向。如果可能的話，請一併注意連接埠第一根針腳的位置。您將會安裝一些特殊功能的附加卡到主機板上，像是 SCSI 卡或是 AGP 顯示卡等等。當您將它們安裝到主機板上適當的插槽之後，請以螺絲將這些附加卡與機殼背板牢牢地固定好，避免有鬆動的情況發生。

如您想要瞭解相關且更為詳細的資訊，請參閱我們的完整版使用手冊，裡面會有詳盡的說明。

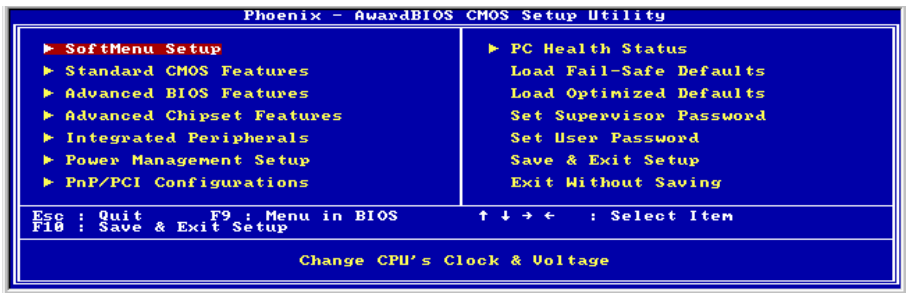
將電源供應器的電源線連接頭與主機板上的 ATX1/ATX12V 連接頭連接起來

請將電源供應器的 ATX 電源接頭確實地壓入主機板上的 ATX1/ATX12V1 接頭，並確定連接妥當。

註：請注意針腳的位置及方向。



處理器參數的設定



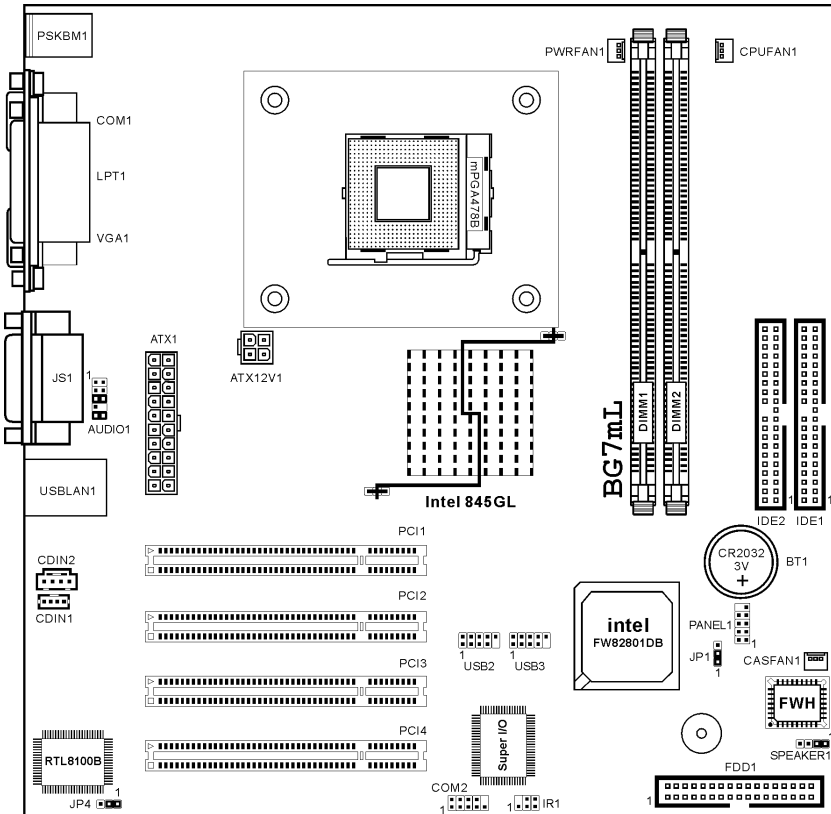
當您將所有的硬體安裝完畢以後，就可以開啓電腦的電源並進入 BIOS 的選項。如您想要瞭解相關且更爲詳細的資訊，請參閱我們的完整版使用手冊，裡面會有詳盡的說明。

1-2. (Japanese) BG7mL クイックインストールガイド

ABIT マザーボードをお買い上げいただきましてありがとうございます。このマザーボードは Intel Socket 478 Pentium 4 プロセッサ用に設計されています。最高 2GB の DDR メモリを搭載した Intel Socket-478 構造をサポートします。

このマザーボードの詳細については、ユーザーズマニュアルの完全版を参照してください。このクイックインストールガイドは、経験あるシステム構築者向けに書かれました。今回始めてコンピュータシステムをセットアップする方は、まず完全版のマニュアルをお読みになるか、専門技術者に連絡してコンピュータシステムのセットアップを行うようお勧めします。レバー

BG7mL マザーボードの配置

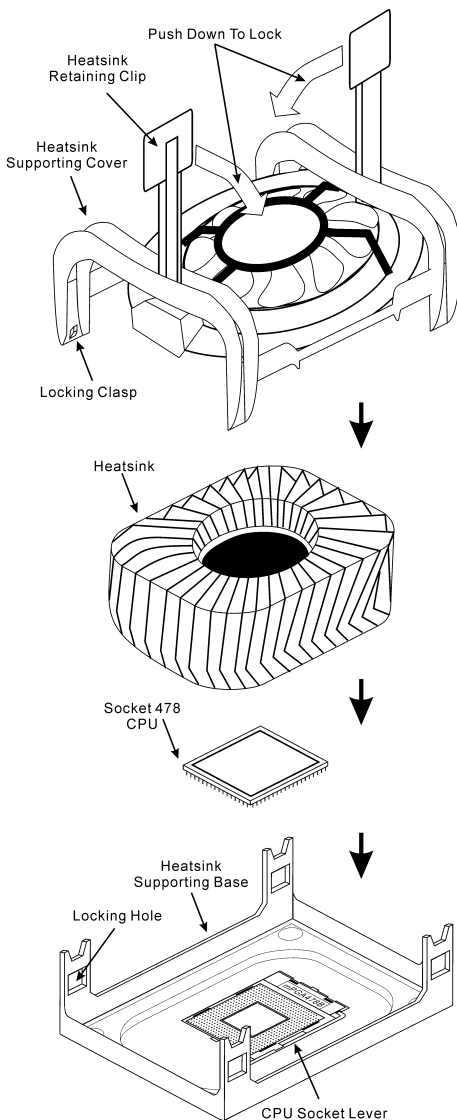


プロセッサの取り付け

方向を間違えて差し込むと、プロセッサはスムーズに入っていかず、途中で止まってしまいます。この場合、向きを変えると、Socket 478 に完全に差し込まれます。同時に、プロセッサの温度検出サーミスタの高さもチェックしてください（マザーボードにこのコンポーネントが搭載されている場合）。その後で、プロセッサを Socket 478 にゆっくり差し込むことができます。

ヒートシンクと冷却ファンの取り付けは、コンピュータから熱を分散させるために必要となります。これらのアイテムを取り付けないと、過熱してプロセッサが破損する原因となります。

Intel Socket 478 プロセッサは動作中に高熱を発生するため、Intel Socket 478 プロセッサ用に特別に設計された大きなヒートシンクが必要となります。そうでないと、過熱してプロセッサが破損することもあります。プロセッサファンとその電源ケーブルを正しく取り付けるまでは、ATX 電源ケーブルをマザーボードに決して差し込まないでください。これにより、プロセッサの破損を避けることができます。



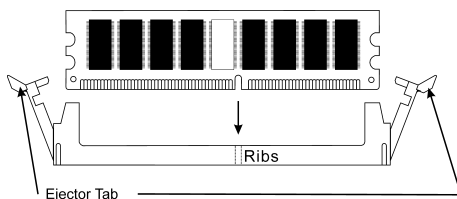
マザーボードをシャーシに取り付ける

マザーボードにプロセッサを取り付けた後、シャーシにマザーボードを固定することができるようになります。まず、シャーシにマザーボードを固定する必要があります。ほとんどのコンピュータシャーシには、多くの取り付け穴の付いた台が付属しており、それを使用することでマザーボードをしっかりと取り付けたり、同時にショートを避けることができます。シャーシに付属する飾りボタンかスパーサーを使用してマザーボードを固定します。

システムメモリの取り付け

このマザーボードでは、2つの184ピンDDR DIMM スロットメモリ拡張を提供します。最小メモリは64 MBで、最大メモリは2GB DDR SDRAMです。

DDR DIMMを図に示すように拡張スロットに差し込みます。モジュールがソケットにどのように固定されているか注意してください。これにより、DDR DIMM モジュールに差し込む方法が1つしかないことを確認できます。DDR



DIMM モジュールを DDR DIMM ソケットにしっかりと押し込み、モジュールが DDR DIMM ソケットに完全に差し込まれていることを確認します。

これらのモジュールに対して、DIMM1 から DIMM2 まで順に差し込むようにお勧めします。

次に、すべての必要なデバイスケーブルをマザーボードの関連ヘッダとコネクタに接続して、システムのハードウェア取付けを終了する必要があります。

コネクタ、ヘッダ、スイッチおよびアダプタ

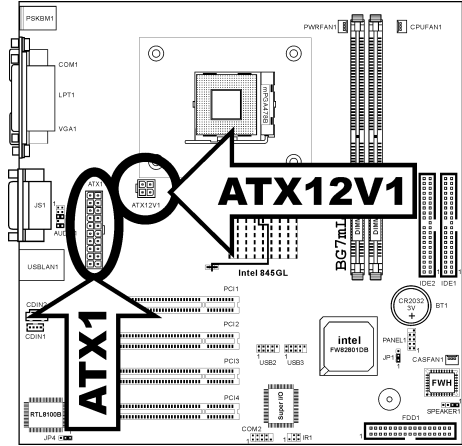
コンピュータのケース内部には、複数のケーブルやプラグを接続できます。これらのケーブルやプラグは、通常マザーボードにあるコネクタに1つずつ接続されます。ケーブルの接続方向には十分な注意を払い、また必要に応じ、コネクタの第1ピンの位置にも注目する必要があります。SCSI アダプタ、AGP アダプタのような特殊なニーズ向けには、それに対応したアダプタを取り付けてください。アダプタをマザーボードのスロットに取り付けたら、ネジでシャーシの背面パネルに固定してください。

詳細については、ユーザーズマニュアルの完全版を参照してください。

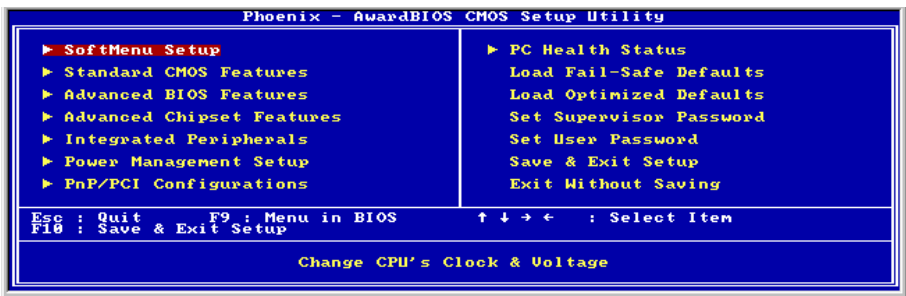
電源コネクタを ATX1/ATX12V1 コネクタに差し込む

電源装置から出ている電源ブロックコネクタをこの ATX1/ATX12V1 に接続します。コネクタが十分奥まで装着されていることをご確認ください。

注意：ピンの位置と方向を良く確認してください。



BIOS のセットアップ



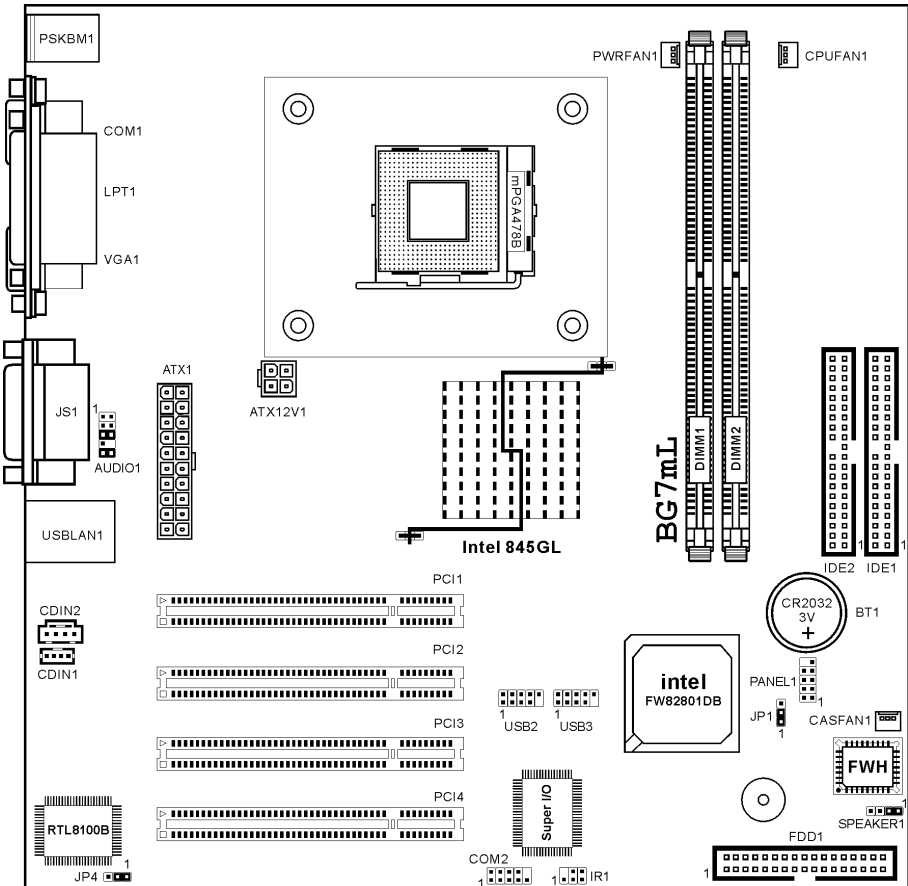
ハードウェアの取り付けが完了したら、コンピュータの電源をオンにし、BIOS Setup アイテムに移動して、プロセッサのパラメータをセットアップします。詳細については、ユーザズマニュアルの完全版を参照してください。

1-3. (German) BG7mL Schnellinstallationsanleitung

Vielen Dank für Ihren Kauf der ABIT-Hauptplatte. Diese Hauptplatte wurde für Intel Socket 478 Pentium 4 Prozessoren ausgelegt. Sie unterstützt die Intel Socket-478-Struktur und DDR-Speichersteckplätze mit der Kapazität von bis zu 2 GB RAM.

Beziehen Sie sich bitte für detaillierte Informationen über diese Hauptplatte auf die vollständige Version des Benutzerbuchs. Diese Schnellinstallationsanleitung ist für erfahrene Systemaufbauer gedacht. Ist es Ihr erster Versuch ein Computersystem aufzubauen, dann empfehlen wir Ihnen zuerst das vollständige Benutzerhandbuch zu lesen oder einen Techniker zum Aufbauen des Systems zu Hilfe zu holen.

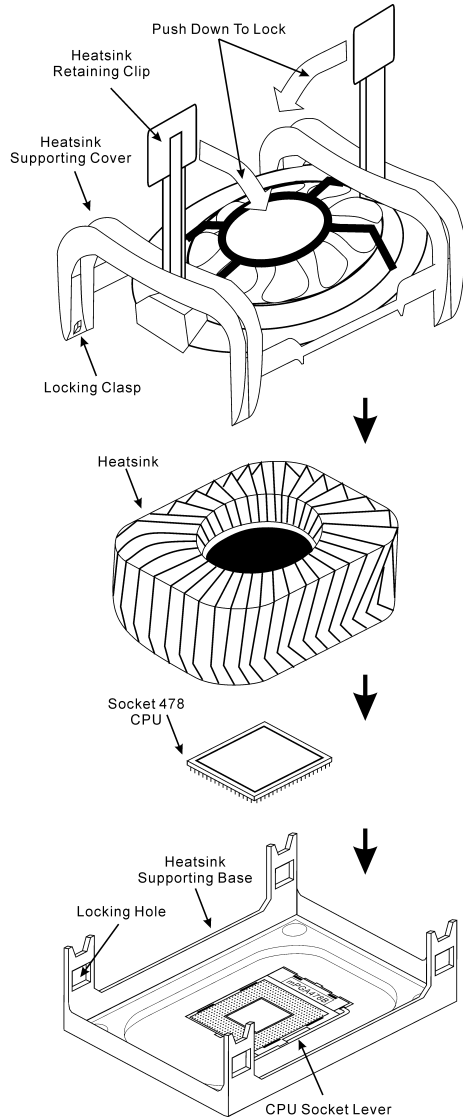
Layout der BG7mL Hauptplatte



Installieren des Prozessors

Wenn Sie beim Einstecken des Prozessors eine falsche Richtung gewählt haben, kann der Prozessor nicht leicht und komplett eingesteckt werden. Ändern Sie bitte in diesem Fall die Richtung, bis der Prozessor sich leicht und komplett in den Socket 478 einpassen lässt. Überprüfen Sie gleichzeitig die Höhe des Prozessortemperaturerkennungsthermistors (falls Ihre Hauptplatine diese Komponente besitzt). Wenn alles in Ordnung ist, stecken Sie bitte den Prozessor langsam in den Socket 478 ein.

Ein Kühlkörper und Lüfter ist erforderlich, um die Hitze des Prozessors zu vertreiben. Wurden die zwei Vorrichtungen nicht installiert, kann eine Überhitzung und ein Schaden am Prozessor entstehen. Ein Intel Socket 478 Prozessor erzeugt viel Hitze. Deshalb müssen Sie einen speziell für einen Intel Socket 478 Prozessor ausgelegten großen Kühlkörper verwenden. Ansonsten ist eine Überhitzung und ein Schaden am Prozessor möglich. Verbinden Sie niemals das ATX-Netzkabel mit der Hauptplatine, bevor der Prozessorlüfter installiert wurde und sein Netzkabel richtig angeschlossen wurde. Dies kann mögliche Schäden am Prozessor vermeiden.



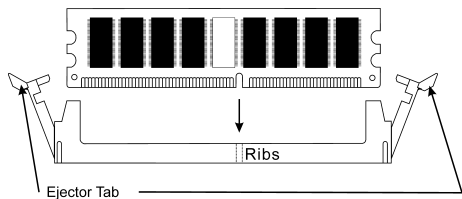
Installieren der Hauptplatine im Gehäuse

Nach der Installation des Prozessors können Sie anfangen die Hauptplatine im Computergehäuse zu befestigen. Die meisten Gehäuse haben eine Bodenplatte, auf der sich eine Reihe von Befestigungslöcher befinden, mit deren Hilfe Sie die Hauptplatine sicher verankern können und zugleich Kurzschlüsse verhindern. Verwenden Sie entweder die Dübeln oder die Abstandhalter, um die Hauptplatine auf der Bodenplatte des Gehäuses zu befestigen.

Installieren des Arbeitsspeichers

Diese Hauptplatine bietet 2 184-polige DDR DIMM-Steckplätze an. Sie können minimal 64 MB und maximal 2 GB DDR SDRAM einbauen.

Stecken Sie das DDR DIMM-Modul in den Speichersteckplatz ein, wie in der Abbildung dargestellt. Achten Sie darauf, wie die Kerbe des Moduls in den Steckplatz passt. So ist sichergestellt, dass das DDR DIMM-Modul nur in eine Richtung in den Steckplatz eingesteckt werden kann. Drücken Sie das DDR DIMM-Modul fest in den DDR DIMM-Steckplatz, bis es komplett und fest darin sitzt.



Für solche Module, empfehlen wir Ihnen die Bestückung von DIMM1 zu DIMM2 (in dieser Reihenfolge).

Danach müssen Sie alle nötigen Gerätekabel mit den entsprechenden Sockeln und Anschlüssen auf der Hauptplatine verbinden, um die Hardwareinstallation Ihres Systems zu vervollständigen.

Anschlüsse, Sockel, Schalter und Adapter

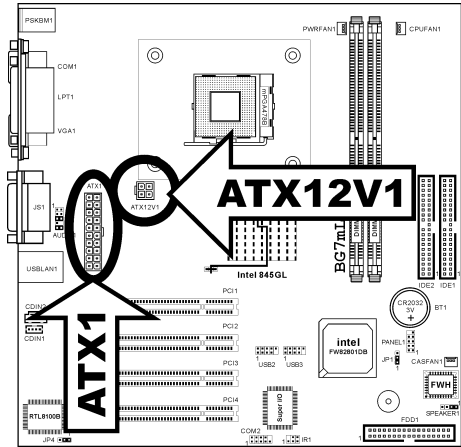
Im Inneren des Gehäuses findet man in jedem Computer viele Kabel und Stecker, die angeschlossen werden müssen. Diese Kabel und Stecker werden normalerweise einzeln mit den Anschlüssen auf der Hauptplatine verbunden. Sie müssen genau auf die Anschlussorientierung der Kabel achten und, wenn vorhanden, sich die Position des ersten Pols des Anschlusses merken. Wenn Sie Adapter wie z.B. SCSI-Adapter, AGP-Adapter usw. installieren, befestigen Sie bitte die Adapter immer mit Hilfe der Schrauben auf die Rückseite des Computergehäuses.

Für detaillierte Informationen beziehen Sie sich bitte auf das vollständige Benutzerhandbuch.

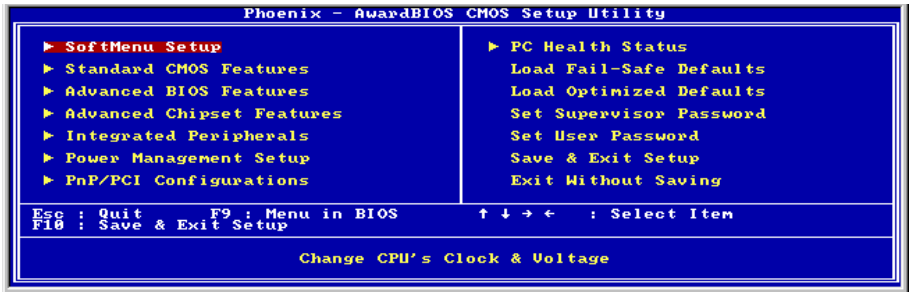
Verbinden der Netzstecker mit dem ATX11/ATX12V1-Anschluss

Denken Sie daran, den Anschluss des ATX-Netzteils fest in das Ende mit dem ATX1/ATX12V1-Anschluss zu drücken, um eine feste Verbindung zu garantieren.

Hinweis: Achten Sie auf die richtige Ausrichtung und Position der Pole.



BIOS-Setup



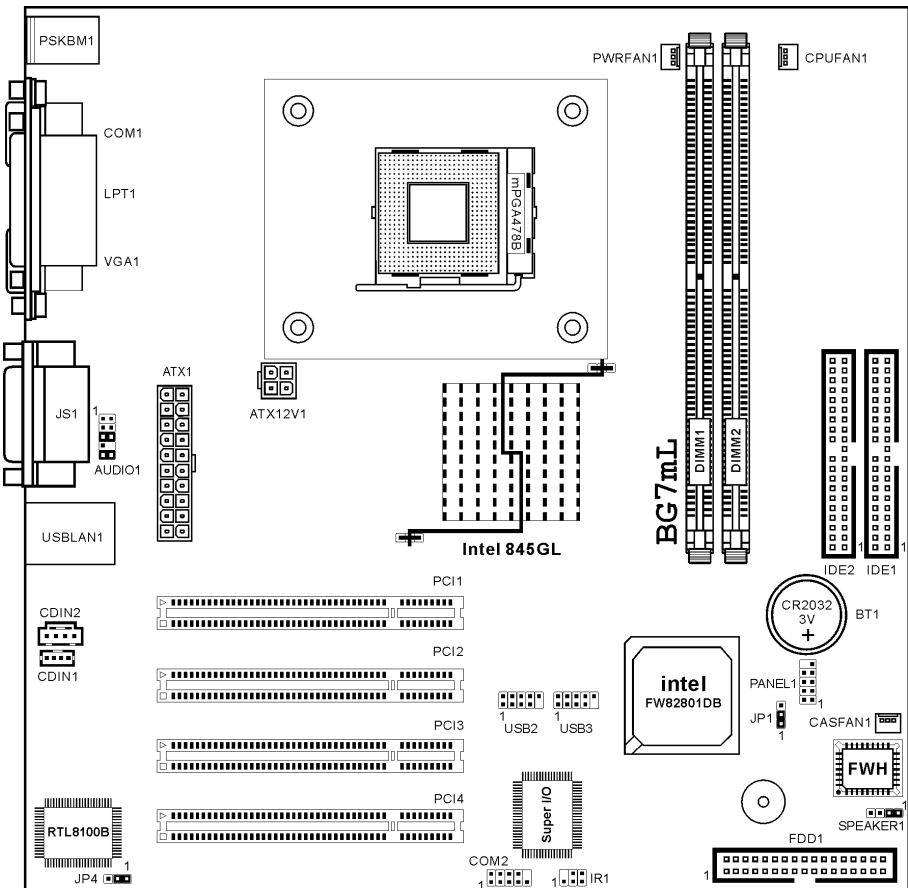
Schalten Sie nach der vervollständigten Hardwareinstallation den Computer ein und gehen zur Option im BIOS, um die Prozessorparameter einzustellen. Für detaillierte Informationen beziehen Sie sich bitte auf das vollständige Benutzerhandbuch.

1-4. (French) BG7mL Guide d'Installation Rapide

Merci d'avoir acheté la carte mère ABIT. Cette carte mère est conçue pour les processeurs Intel Pentium 4 Socket 478. Elle supporte la structure Socket-478, avec jusqu'à 2 GB de mémoire DDR.

Pour des informations relatives à cette carte mère plus détaillées, veuillez vous référer à notre version complète du manuel utilisateur. Ce guide d'installation rapide est créé pour les assembleurs système expérimentés. S'il s'agit de votre premier essai pour installer un ordinateur, nous vous suggérons de lire d'abord le manuel en version complète ou de demander l'aide d'un technicien pour vous aider à configurer le système ordinateur.

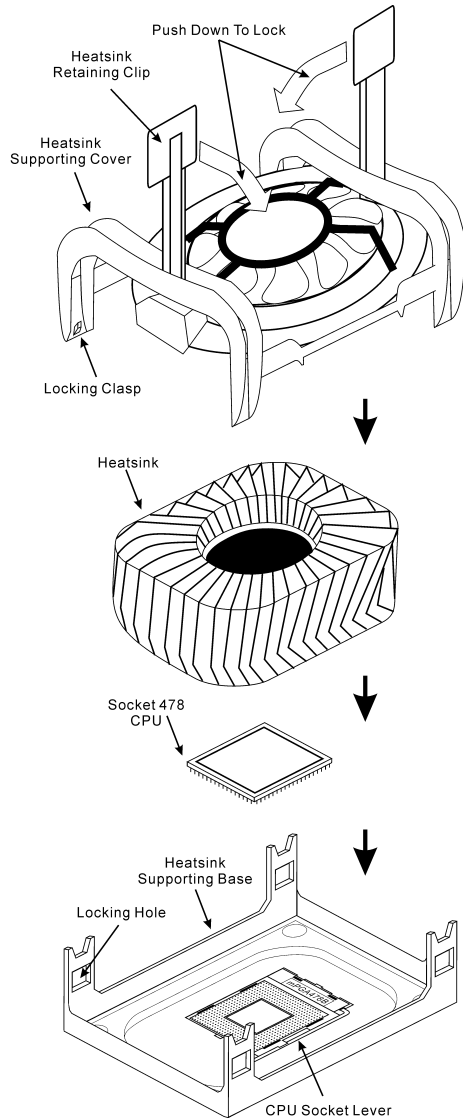
Emplacement de la Carte Mère BG7mL



Installer le Processeur

La figure vous montre à quoi ressemble l'emplacement Socket 478, et comment soulever le levier. Si vous le mettez dans un mauvais sens, vous ne pourrez pas insérer le processeur facilement, et les broches du processeur n'entreront pas entièrement dans l'emplacement. Dans ce cas, veuillez changer le sens jusqu'à ce qu'il s'insère facilement et complètement dans l'emplacement Socket 478. En même temps, vérifiez le niveau de la thermistance de détection de température du processeur (si votre carte mère possède ce composant). Ensuite, vous pouvez insérer lentement le processeur dans le Socket 478.

Installer un dissipateur thermique et un ventilateur de refroidissement est nécessaire pour que la chaleur se dégage de votre processeur. Ne pas installer ces composants pourrait provoquer une surchauffe et des dommages au processeur. Le processeur Socket 478 Intel produira beaucoup de chaleur lors de son fonctionnement, donc vous aurez à utiliser un grand dissipateur thermique qui est conçu spécialement pour le processeur Socket 478 Intel. Dans le cas contraire, il pourrait provoquer une surchauffe et des dommages au processeur. Avant que le ventilateur de votre processeur et son câble d'alimentation ne soient installés correctement, ne branchez jamais le câble d'alimentation ATX sur la carte mère. Ceci peut éviter d'éventuels dommages au processeur.



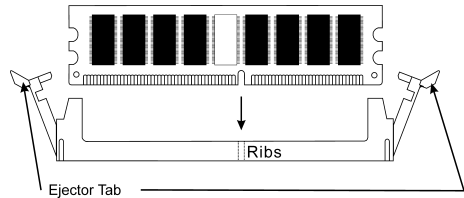
Installer la Carte Mre dans le Châssis

Une fois que vous aurez installé le processeur sur la carte mère, vous pourrez commencer à fixer la carte mère sur le châssis. Tout d'abord, vous avez besoin de fixer la carte mère sur le châssis. La plupart des châssis d'ordinateur possèdent une base sur laquelle il y a nombreux trous de montage permettant à la carte mère d'être fixée fermement, et en même temps d'éviter les court-circuits. Utilisez les talons ou les entretoises fixés sur le châssis pour fixer la carte mère.

Installer la Mémoire Système

Cette carte mère dispose de 2 emplacements DIMM DDR 184-broches pour les extensions mémoire. La mémoire minimum est de 64 MB et la mémoire maximum est de 2 GB DDR SDRAM.

Insérez le module DDR DIMM dans l'emplacement d'extension comme illustré dans le schéma. Notez comment le module est verrouillé dans l'emplacement. Ceci assure qu'il n'y qu'une manière d'insérer le module DDR DIMM. Pressez fermement le module DDR DIMM dans l'emplacement DDR DIMM; assurez-vous que le module est installé complètement dans l'emplacement DDR DIMM. Pour ces modules, nous vous suggérons de remplir de DIMM1 à DIMM2 en respectant l'ordre.



Ensuite, vous aurez à connecter les câbles de tous les périphériques nécessaires dans les socles de connexion et connecteurs correspondants se trouvant sur la carte mère pour terminer l'installation matérielle de votre système.

Connecteurs, Socles de connexion, Interrupteurs et Adaptateurs

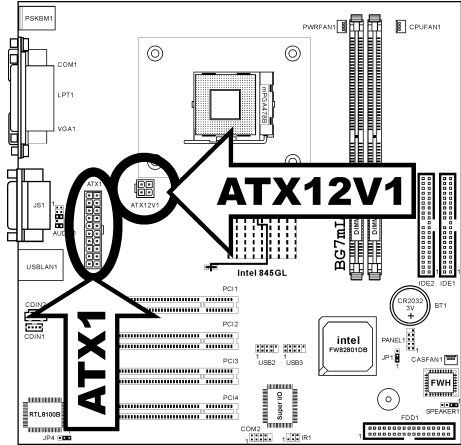
A l'intérieur du boîtier de n'importe quel ordinateur il y a plusieurs câbles et prises qui doivent être connectés. Ces câbles et prises sont habituellement connectés les uns après les autres aux connecteurs situés sur la carte mère. Vous avez besoin de faire attention au sens de connexion des câbles et, s'il y a lieu, remarquez la position de la première broche du connecteur. Vous installerez certains adaptateurs pour des besoins spéciaux, tels adaptateurs SCSI, adaptateurs AGP, etc. Lorsque vous les installez dans les emplacements situés sur la carte mère, veuillez les fixer sur le panneau arrière du châssis à l'aide des vis.

Pour les informations détaillées, veuillez vous référer au manuel utilisateur en version complète.

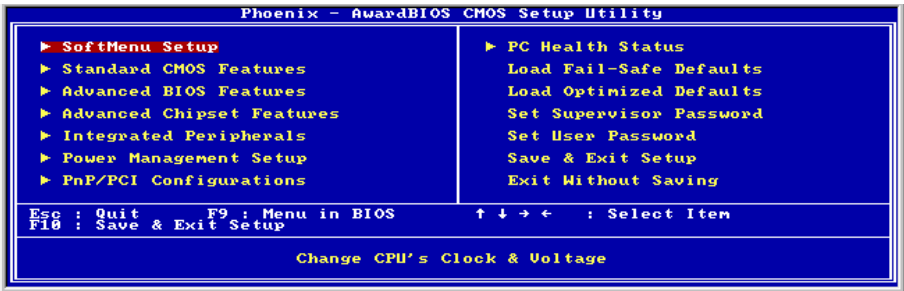
Brancher les connecteurs d'alimentation dans les connecteurs ATX1/ATX12V1

Souvenez-vous que vous devez pousser le connecteur de votre alimentation fermement dans le connecteur ATX1/ATX12V1 pour assurer une bonne connexion.

Remarque: Faites attention à la position des broches et à l'orientation.



Configuration du BIOS



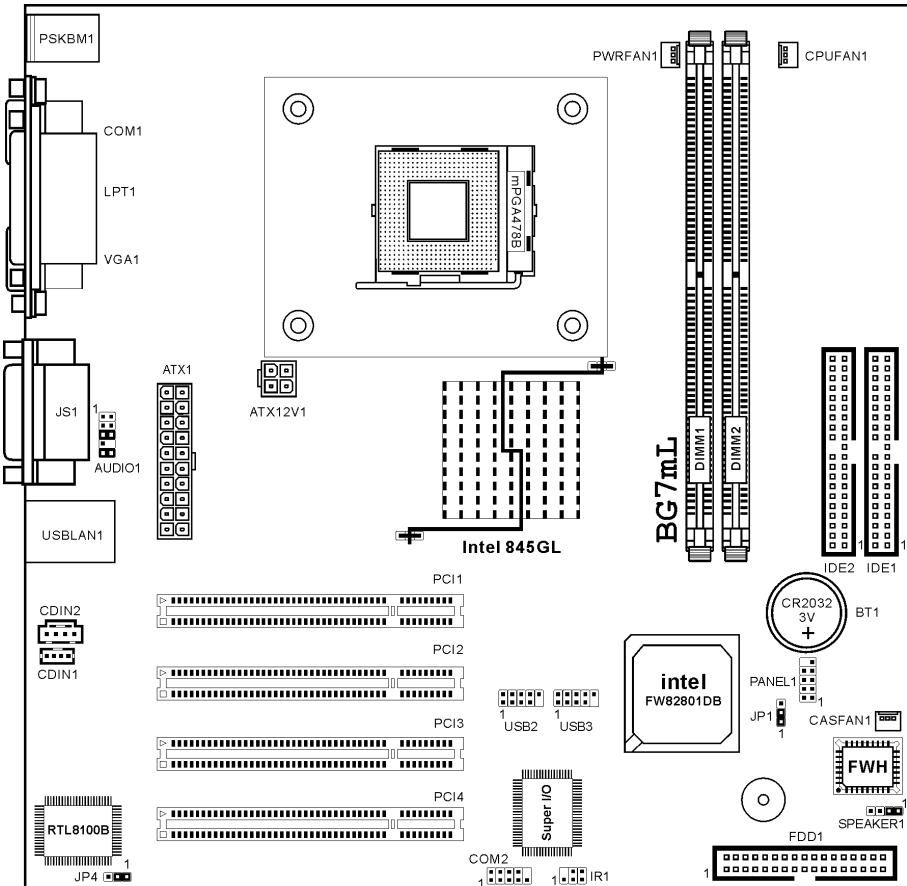
Une fois le matériel installé complètement, démarrez l'ordinateur et allez sur l'item dans le BIOS pour configurer les paramètres du processeur. Pour les informations détaillées, veuillez vous référer à la version complète du manuel utilisateur.

1-5. (Russian) Краткое руководство по установке BG7mL

Благодарим вас за приобретение материнской платы производства АБИТ. Эта материнская плата предназначена для использования с процессорами Intel Socket 478. Она поддерживает структуру Intel Socket 478, максимальный объем памяти DDR составляет 2 Гбайт.

Более подробные сведения о материнской плате приведены в руководстве пользователя. Краткое руководство по установке предназначено для опытных специалистов. Если вы собираете компьютер впервые, ознакомьтесь сперва с руководством пользователя или попросите техника помочь в настройке компьютерной системы.

Расположение компонентов BG7mL

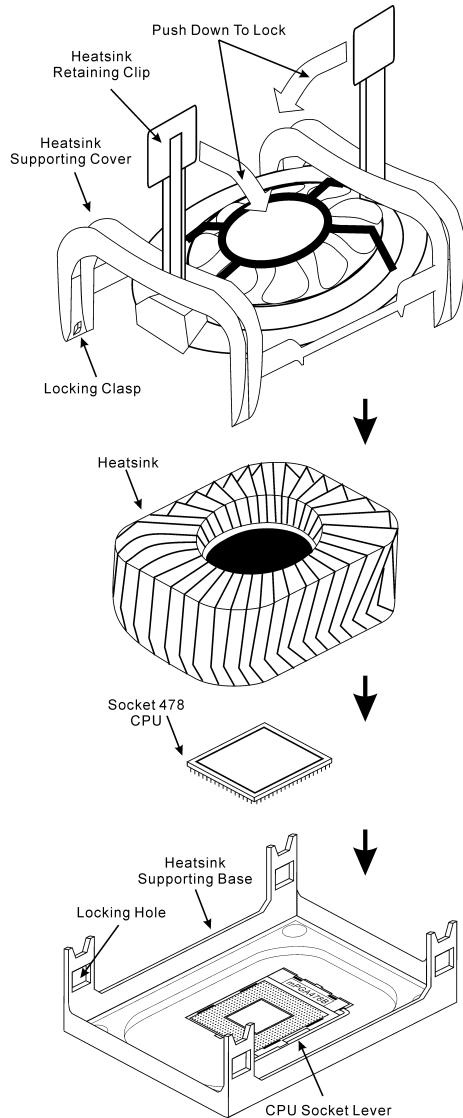


Установка процессора

Если рычаг будет смещен не в нужную сторону, легко установить процессор не удастся, а контакты процессора не попадут в гнезда. Если так получилось, измените направление перемещения, до тех пор, пока процессор не станет на свое место в гнездо “Socket 478”.

В то же время проверьте высоту температурного датчика (если он установлен на материнской плате). Теперь можно установить процессор в гнездо “Socket 478”.

Установка радиатора и вентилятора необходима для рассеивания тепла от процессора. Неустановка радиатора и вентилятора может привести к перегреву и повреждению процессора. Процессор Intel Socket 478 сильно нагревается в процессе работы, поэтому необходимо пользоваться специальным радиатором, разработанным для процессора Intel Socket 478. В противном случае процессор может перегреться и выйти из строя. Не подключайте кабель питания ATX к материнской плате до тех пор, пока вентилятор процессора не установлен и кабель питания вентилятора процессора не подключен к материнской плате. Так можно предотвратить возможное повреждение процессора.



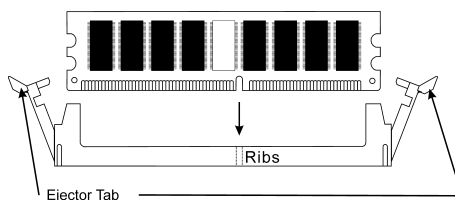
Установка материнской платы в корпус

После установки процессора на материнскую плату можно начинать установку материнской платы в корпус. Большая часть корпусов оборудована основанием, в котором проделаны монтажные отверстия, которые позволяют надежно закрепить материнскую плату и предотвратить короткие замыкания. Для крепления материнской платы к основанию используются винты и прокладки.

Установка модулей памяти

На плате имеется 2 184-контактных гнезда расширения DDR DIMM для памяти. Минимальный объем памяти равен 64 Мбайт, максимальный объем равен 2 Гбайт DDR SDRAM.

Установите модуль памяти DDR DIMM в гнездо расширения, как показано на рисунке. Обратите внимание, что модуль фиксируется в гнезде. Таким образом, гарантируется единственно возможный способ установки модуля DDR DIMM. Вставьте модуль DDR DIMM в гнездо DDR DIMM; и убедитесь, что модуль надежно установлен в гнездо DDR DIMM. Для этих модулей мы рекомендуем устанавливать память начиная с DIMM1 и далее по DIMM2.



Подключите все необходимые кабели для подключения устройств к соответствующим разъемам на материнской плате, чтобы завершить установку аппаратуры вашей системы.

Разъемы, переключатели и адаптеры

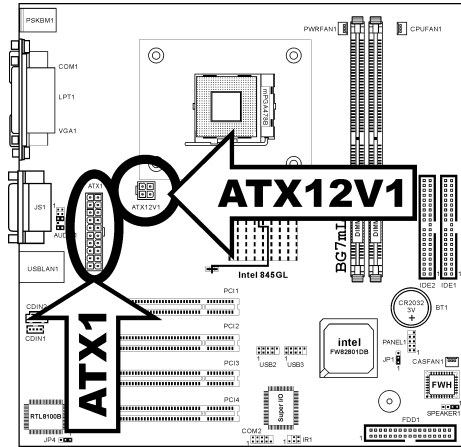
Внутри корпуса компьютера необходимо расположены несколько кабелей и вилок, которые необходимо подключить. Обычно эти кабели подключаются к разъемам, расположенным на материнской плате. При подключении любого кабеля необходимо обращать внимание на расположение первого контакта разъема. Для особых целей могут потребоваться специальные адаптеры, например, адаптер SCSI, адаптер AGP и т.п.. При установке адаптеров в гнезда материнской платы закрепите их на задней панели с помощью винтов.

За более подробной информацией обращайтесь к полному руководству пользователя.

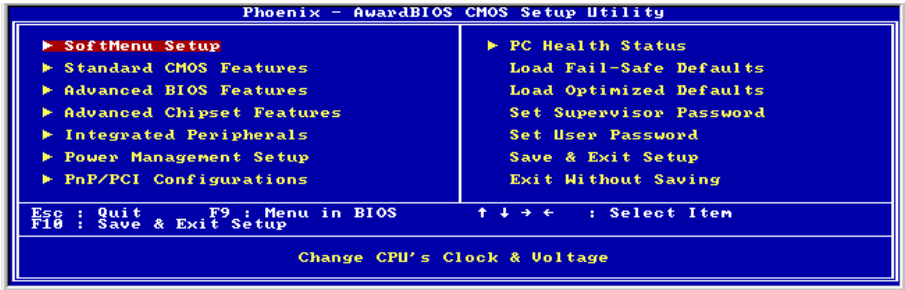
Подключение кабелей питания к разъемам ATX1/ATX12V1

Обратите внимание, разъем блока питания ATX необходимо вставить в разъем ATX1/ATX12V1 до упора, чтобы обеспечить надежное соединение.

Примечание: Обратите внимание на положение контактов и ориентацию разъема.



Настройка BIOS



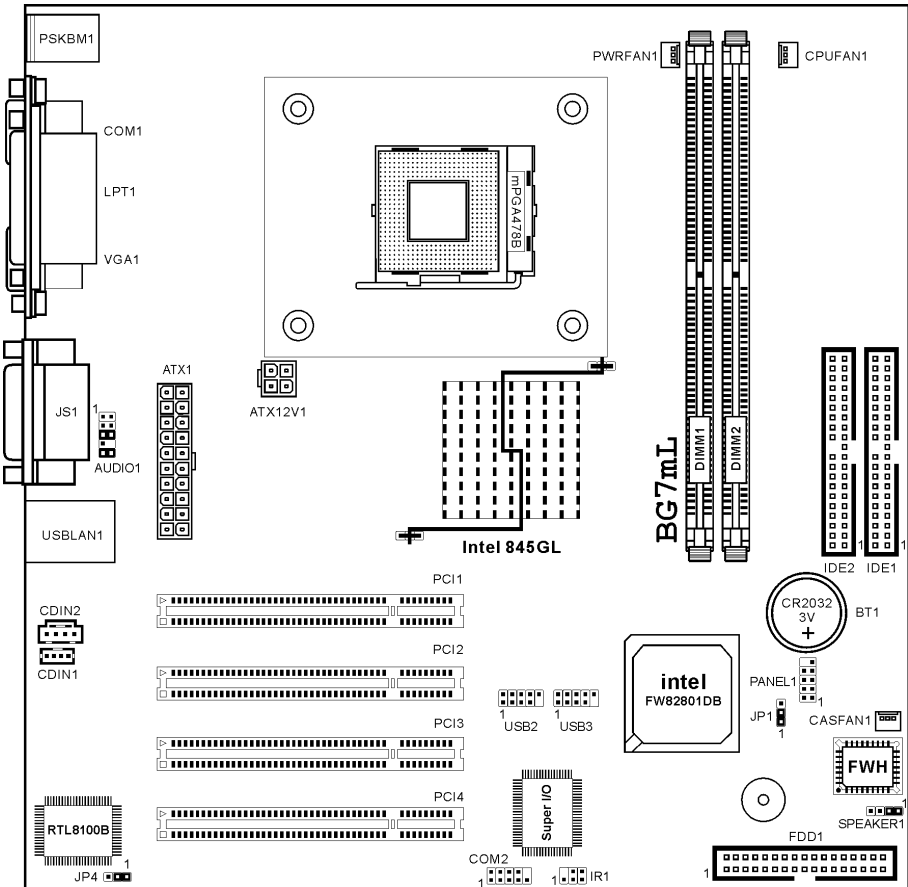
По окончании установки аппаратуры включите питание и перейдите в меню BIOS Setup, чтобы настроить параметры процессора. За более подробной информацией обращайтесь к руководству пользователя.

1-6. (Italian) Guida all'installazione veloce Scheda madre BG7mL

Complimenti per l'acquisto di una scheda madre ABIT. Questa scheda madre è progettata per processori Intel Pentium 4. Supporta la struttura Socket 478 con fino a 2GB di memoria DDR.

Per maggiori e dettagliate informazioni su questa scheda madre si prega di fare riferimento alla versione integrale del Manuale utente. Questa guida all'installazione veloce è intesa per costruttori esperti di sistemi. Se questa è la prima volta che si cerca di installare un sistema, si consiglia di leggere, innanzi tutto, la versione integrale del manuale oppure di chiedere aiuto ad un tecnico per l'installazione.

Disposizione scheda madre BG7mL

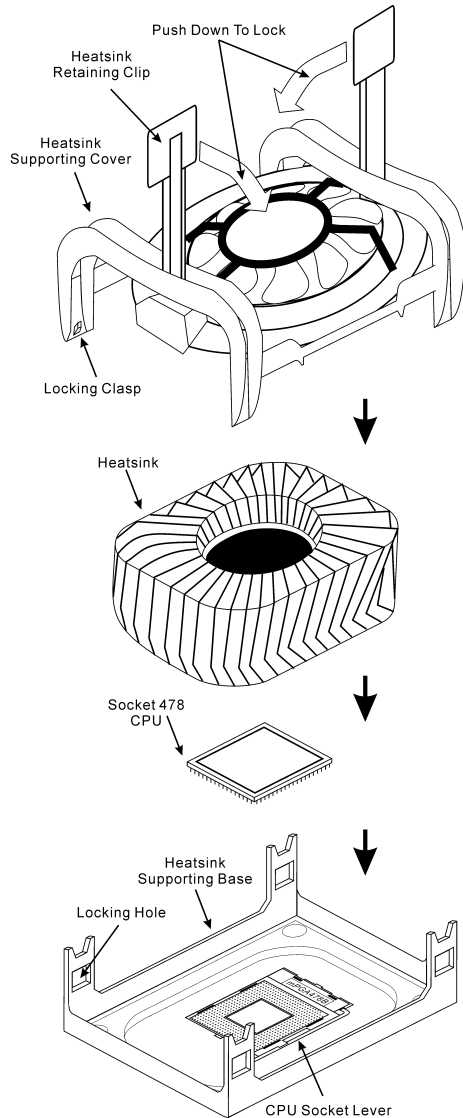


Installazione del processore

Se il processore è collocato nella posizione sbagliata, non si sarà in grado di inserirlo con facilità e non si riuscirà ad inserirlo completamente nella presa. In questo caso cambiare la posizione – direzione finché il processore si inserisce completamente e con facilità nella presa Socket 478.

Allo stesso tempo controllare la condizione del termostato per il rilevamento della temperatura (se la scheda madre possiede questo elemento). Poi è possibile inserire lentamente il processore nella presa Socket 478.

L'installazione di un dispersore di calore e di una ventolina di raffreddamento è necessaria per dissipare il calore generato dal processore. Diversamente si provocherà il surriscaldamento e conseguente danneggiamento del processore. I processori Intel Socket 478 producono una gran quantità di calore, è quindi necessario impiegare un dispersore di calore potente che sia progettato specialmente per processori Intel Socket 478. Diversamente si provocherà il surriscaldamento e conseguente danneggiamento del processore. Non collegare mai il cavo d'alimentazione ATX alla scheda madre prima di avere installato in modo appropriato la ventolina del processore ed il suo cavo d'alimentazione. Ciò può prevenire possibili danni al processore.



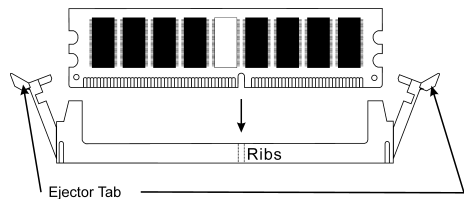
Installazione della scheda madre sul telaio

Dopo avere installato il processore sulla scheda madre si può iniziare a fissare la scheda madre sul telaio. Innanzi tutto è necessario fissare la scheda madre al telaio. La maggior parte dei telai ha una base sulla quale sono presenti diversi fori di montaggio che permettono di fissare in modo accurato la scheda madre e, allo stesso tempo, di prevenire corto circuiti. Impiegare le borchie o gli spaziatori attaccati al telaio per fissare la scheda madre.

Installazione della memoria di sistema

Questa scheda madre fornisce 2 slot d'espansione di memoria DDR DIMM da 184 pin. La memoria minima è di 64 MB, quella massima è di 2 GB DDR SDRAM.

Inserire il modulo DDR DIMM nello slot d'espansione come mostrato dell'illustrazione- Notare come il modulo è impernato nella presa. Ciò assicura che ci sia un unico modo per collegare il modulo DDR DIMM. Premere con fermezza il modulo DDR DIMM nello slot DDR DIMM, assicurandosi che il modulo sia inserito completamente nello slot DDR DIMM. Per questi moduli si suggerisce di inserire con ordine i chip elettronici da DIMM1 a DIMM2.



Per completare l'installazione dell'hardware del sistema, bisogna collegare tutti i cavi delle attrezzature necessarie ai relativi collettori e connettori sulla scheda madre.

Connettori, collettori, interruttori ed adattatori

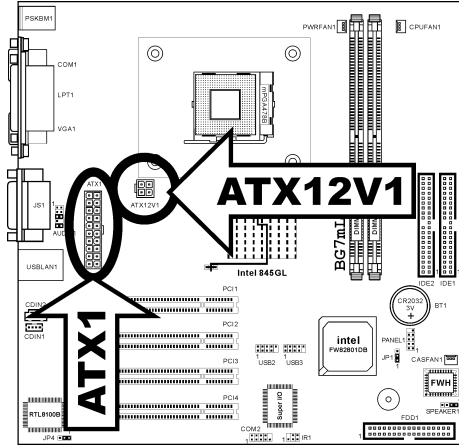
All'interno della copertura di ogni computer ci sono diversi cavi e prese che devono essere collegati. Questi cavi e prese sono solitamente collegati uno ad uno ai connettori situati sulla scheda madre. E' necessario prestare particolare attenzione a qualunque orientamento del collegamento che possono avere i cavi e, se necessario, notare la posizione del primo pin del connettore. Si installeranno alcuni adattatori per particolari necessità quali l'adattatore SCSI, AGP, eccetera. Quando si installano gli adattatori sugli slot della scheda madre, si ricorda di fissarli con le viti anche sul pannello posteriore del telaio.

Per informazioni dettagliate si prega di fare riferimento alla versione integrale del Manuale utente.

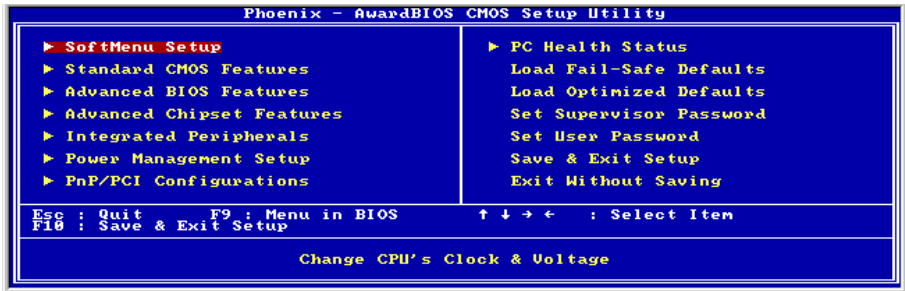
Collegamento dei connettori d'alimentazione ai connettori ATX1/ATX12V1

Ricordarsi che è necessario spingere con fermezza fino in fondo il connettore della sorgente d'alimentazione ATX al connettore ATX1/ATX12V1, assicurando così un buon collegamento.

Nota: Prestare attenzione alla posizione ed all'orientamento dei pin.



Impostazione BIOS



Quando l'hardware è stato installato completamente, accendere il computer ed andare alla voce BIOS per impostare i parametri del processore. Per informazioni dettagliate si prega di fare riferimento alla versione integrale del Manuale utente.

Chapter 2. Introduction

2-1. Features

Congratulations on purchasing this motherboard. This motherboard is a Micro-ATX motherboard that uses a 4-layer printed circuit board and measures 244 mm x 244 mm. The motherboard is design to support the mPGA Socket 478 Intel P4 Willamette/Northwood processors and the new Intel 845-GL chipset.

With system bus speeds up to 400MHz/533MHz, this motherboard represents the most powerful desktop and cost-effective integrated solution available today.

The motherboard incorporates the 845-GL (GMCH) and 82801DB (ICH4) chipsets which combines support for PS/2 keyboard and mouse connectors, two USB ports, a LAN connector, a high-speed serial port, a VGA port, an EPP/ECP parallel port, audio jacks for microphone, line-in, line-out and CD-in and a game port, as well as supporting Plug and Play.

In addition to its excellent performance and stability, this motherboard is highly suited for Internet and rich multimedia applications, including streaming video download and are ideal for workstations and high-end home use.

2-2. Specifications

1. CPU

- Supports Intel Pentium® 4 socket 478 processor
- 400MHz/533MHz System Data Bus

2. Chipset

- Intel 82845GL (GMCH) + 82801DB (ICH4)
- Integrated graphics architecture yields higher 2D/3D performance
- Supports AGP 4X 1.5V device only
- Supports Hi-Speed Universal Serial Bus (USB v2.0)

3. Memory

- Supports two 184-pin DDR DIMM modules up to 2GB Max.
- Supports PC1600 and PC2100 (DDR200 and DDR266)
- Do not support ECC functionality and registered DIMMS

4. Audio

- AC'97 Digital Audio controller integrated
- AC'97 2-channel Audio CODEC on board

5. System BIOS

- Award Plug and Play BIOS supports APM and ACPI
- Write-Protect Anti-Virus function by AWARD BIOS

6. Multi I/O Functions

- 2 channels of Bus Master IDE Ports supporting up to Ultra ATA/100
- PS/2 Keyboard and PS/2 Mouse connectors
- 1 floppy port (up to 2.88MB)
- 1 parallel port (EPP/ECP)
- 1 serial port
- 2 USB 2.0 ports/1 RJ45 LAN port
- 1 standard 15 pin VGA connector
- 2 onboard USB header to connect 4 extra USB ports
- Audio connector (Line-in, Line-out, Mic-in, and Game Port)

7. LAN

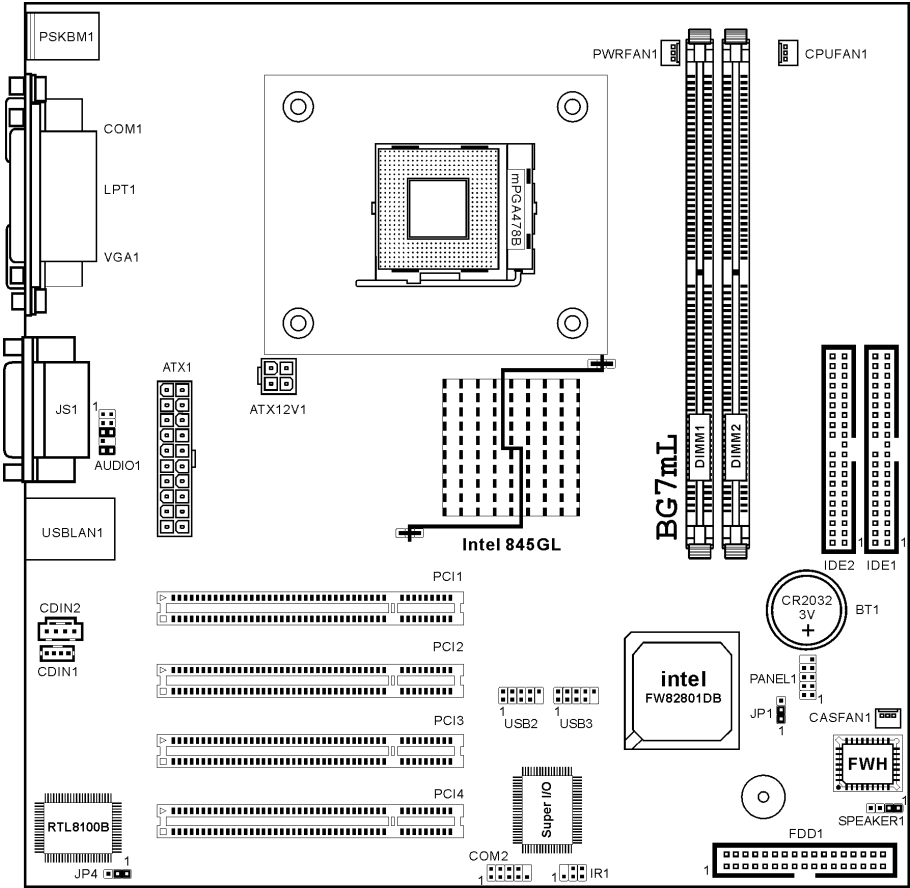
- On-board RTL8100B single chip Ethernet controller with power management
- 10/100Mb Operation
- Supports Full Duplex Flow Control (IEEE 802.3x) and compliant to PCI Revision 2.2

8. Miscellaneous

- Support STR (Suspend to RAM)

- Micro ATX form factor (244 x 244 mm)
 - 4 PCI slots
 - Hardware Monitoring – including Fan Speed, Voltages, CPU and system temperature and one thermal header for other devices temperature monitoring
 - Keyboard and Mouse Power On
 - Built-in IrDA TX/RX header
- ✱ **The Switching Power Supply must meet ATX 2.03 specification with ATX12V and AUX Power connectors.**
- ✱ **Specifications and information contained herein are subject to change without notice.**

2-3. Layout Diagram



Chapter 3. Hardware Setup

This motherboard provides all standard equipment for classic personal computers with great flexibility for meeting future upgrade demands. This chapter will introduce step-by-step all of the standard equipment and will also present, as completely as possible, future upgrade capabilities.

Before Proceeding with the Installation: Please be reminded to turn the ATX12V power supply switch off (fully turn the +5V standby power off), or disconnect the power cord before you install or unplug any connectors or add-on cards. Failing to do so may cause the motherboard components or add-on cards to malfunction or damaged.

3-1. Install The Motherboard

Most computer chassis have a base with many mounting holes to allow motherboard to be securely attached on and at the same time, prevented from short circuits. There are two ways to attach the motherboard to the chassis base:

- use with studs
- or use with spacers

Figure 2-1 shows the shape of studs and spacers. There may be several types, but all look similar.

In principle, the best way to attach the board is to use with studs. Only if you are unable to do this should you attach the board with spacers. Line up the holes on the board with the mounting

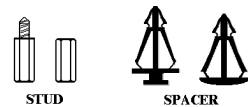


Figure 2-1. The outline of stud and spacer

holes on the chassis. If the holes line up and there are screw holes, you can attach the board with studs. If the holes line up and there are only slots, you can only attach with spacers. Take the tip of the spacers and insert them into the slots. After doing this to all the slots, you can slide the board into position aligned with slots. After the board has been positioned, check to make sure everything is OK before putting the chassis back on. Figure 2-2 shows the ways to fix the board to chassis by studs or spacers.

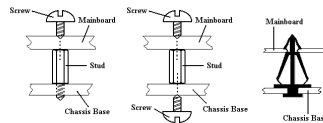


Figure 2-2. The way we fixed the motherboard

ATTENTION: To prevent shorting the PCB circuit, please REMOVE the metal studs or spacers if they are already fastened on the chassis base and are without mounting-holes on the motherboard to align with.

3-2. Install Pentium® 4 CPU and Heatsink Supporting-Base

This motherboard provides a ZIF (Zero Insertion Force) Socket 478 to install Intel® Pentium® 4 CPU. The CPU you bought should have a kit of heatsink and cooling fan along with. If that's not the case, buy one specially designed for Pentium® 4 Socket 478. Please refer to figure 2-3 to install CPU.

1. Locate the Socket 478. Fasten the heatsink supporting-base onto the motherboard.

ATTENTION: If you are using chassis specially designed for Pentium® 4, please pay attention to the location of metal studs or spacers if they are already installed on the chassis. Be careful not let the metal studs or spacers contact the printed circuit wire or parts on the PCB.

2. Pull the CPU socket lever sideways away from the socket and then upwards to 90 degree. Insert the CPU with the correct orientation. Do not use extra force to insert CPU; it only fit in one orientation. Closing down the socket lever while holding down the CPU.
3. Put the heatsink faces down onto the CPU until it completely covers the CPU.
4. Put the heatsink supporting-cover onto the heatsink. Make sure all the four locking clasp at each side of the supporting cover reach in the locking holes.
5. Push down the retaining clip at both sides of the supporting cover to lock up together with the supporting base. Watch out the direction for pushing down the clip.
6. The heatsink supporting cover and base should now firmly locking up with each other with the heatsink inside.

ATTENTION: Do not forget to set the correct bus frequency and multiple for your processor.

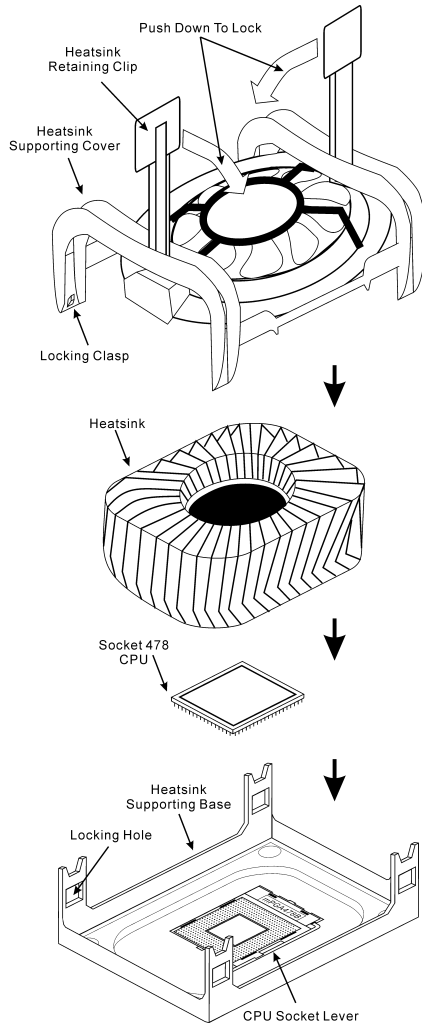


Figure 2-3. Installing P4 Socket 478 CPU and its heatsink into supporting base.

3-3. Install System Memory

This motherboard provides two 184-pin DDR DIMM sites for memory expansion available from minimum memory size of 64MB to maximum memory size of 2GB DDR SDRAM.

Table 2-1. Valid Memory Configurations

Bank	Memory Module	Total Memory
Bank 0, 1 (DIMM1)	64, 128, 256, 512MB, 1GB	64MB ~ 1GB
Bank 2, 3 (DIMM2)	64, 128, 256, 512MB, 1GB	64MB ~ 1GB
Total System Memory		64MB ~ 2GB

ATTENTION: Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

1. Power off the computer and disconnect the AC power cord.
2. Locate the DDR DIMM slot.
3. Push both ejector tabs of the DDR DIMM slot outward.
4. Insert the memory module into the DDR DIMM slot. Note how the module is keyed to the slot. ***This insures the memory module will be plugged into the slot in one way only.***
5. Firmly press the memory module into the DDR DIMM slot until both ejector tabs snap into places.

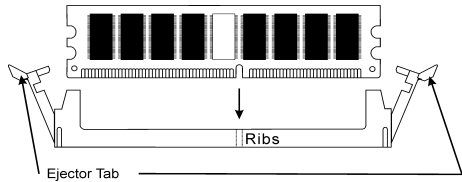


Figure 2-4. Memory module installation

3-4. Connectors, Headers and Switches

Inside the case of any computer there are several cables and plugs that have to be connected. These cables and plugs are usually connected one-by-one to connectors located on the board. You have to pay attention carefully to any connection orientation the cables may have and, if any, notice the position of the first pin.

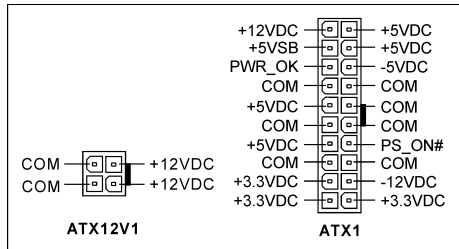
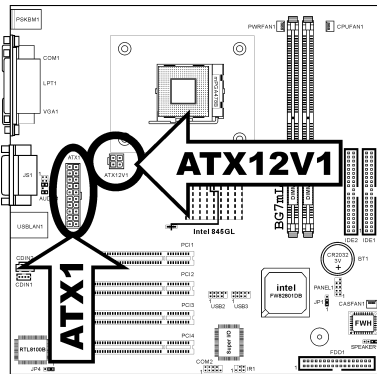
Here we will show you all of the connectors, headers and switches, and how to connect them. Please read the entire section for necessary information before attempting to finish all the hardware installation inside the computer chassis. A complete enlarged layout diagram is shown in section “Layout Diagram” for all the position of connectors and headers on the board that you may refer to.

All the connectors, headers and switches mentioned here are depending on your system configuration. Some features you may (or may not) have to connect or to configure depending on the peripherals you have connected.

WARNING: Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to do so may cause severe damage to your motherboard and/or peripherals. Plug in the AC power cord only after you have carefully checked everything.

(1). ATX12V: ATX Power Input Connectors

The Pentium 4 requires a power supplier different from the regular one. It’s a newly designed ATX12V power with 300W, 20A +5VDC capacity at least for heavily loaded system, and 720mA +5VSB at least for supporting Wake-On-LAN feature.

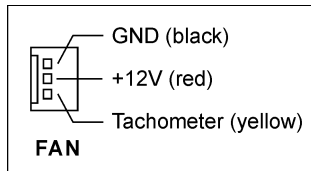
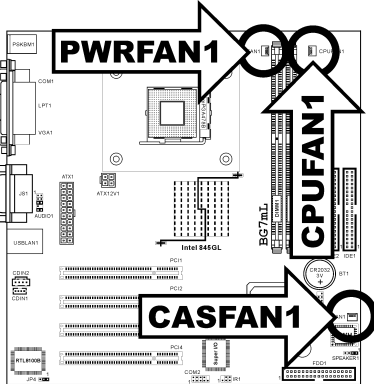


(2). FAN Connectors:

CPUFAN1: CPU Fan

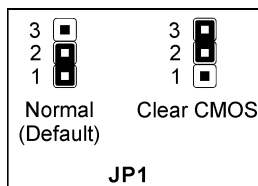
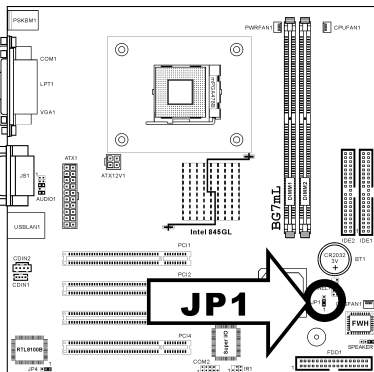
PWRFAN1: Power Fan

CASFAN1: Chassis Fan 1



(3). JP1: CMOS Memory Clearing Header

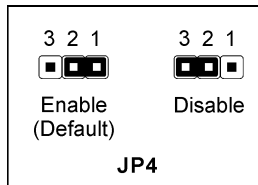
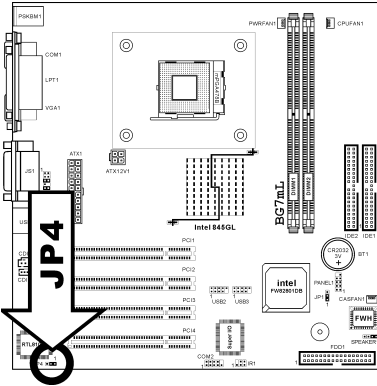
This header uses a jumper to clear the CMOS memory. Short pin 2 and pin 3 only when you want to clear the CMOS memory. The default setting is pin 1 and pin 2 shorted for normal operation.



NOTE: Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.

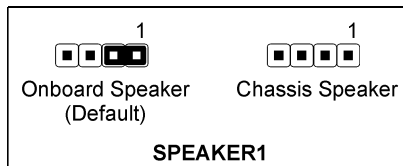
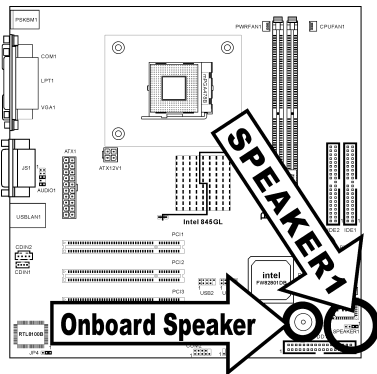
(4). JP4: Onboard LAN Selector

This selector enables or disables the onboard LAN network adapter. Short pin 2 and pin 3 only when you want to disable the onboard LAN and to use the add-on LAN adapter. The default setting is pin 1 and pin 2 shorted for onboard LAN adapter.



(5). SPEAKER1: Speaker Connection Header

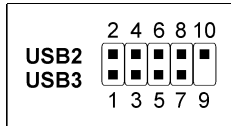
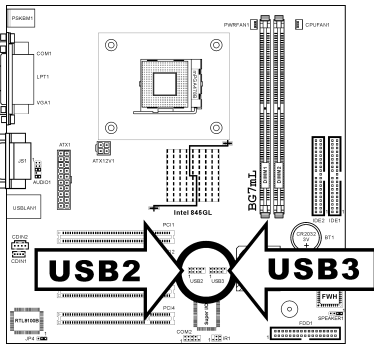
This header connects to the onboard or chassis speaker. Remove the jumper-hat for chassis speaker operation. The default setting is pin 1 and pin 2 shorted for onboard speaker operation.



(6). USB2/USB3: Additional USB Port Headers

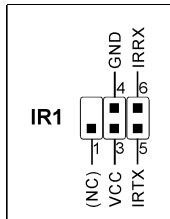
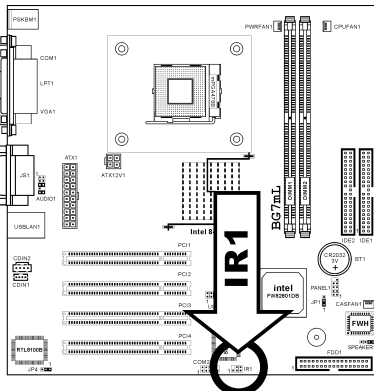
This motherboard provides totally 6 USB 2.0 ports controlled by ICH4. Two of them are through the onboard USB connectors; four of them are available through these headers.

Pin Number	Pin Assignment	Pin Number	Pin Assignment
1	VCC	2	VCC
3	Data0 -	4	Data1 -
5	Data0 +	6	Data1 +
7	Ground	8	Ground
9	NC	10	NC



(7). IR1: Infrared Device Header

This header connects to an optional IR device attached to chassis. This motherboard supports standard IR transfer rates.

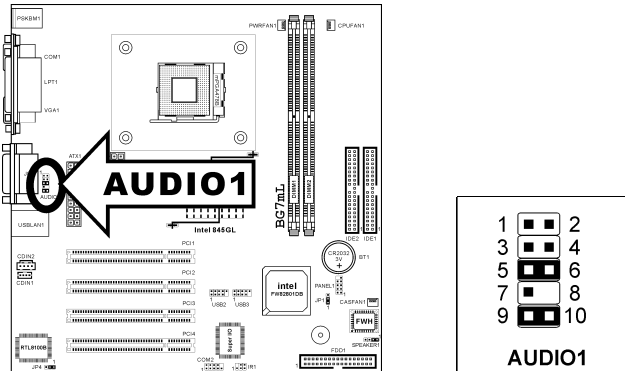


(8). AUDIO1: Front panel audio connection header

This header provides the connection to audio connector at front panel.

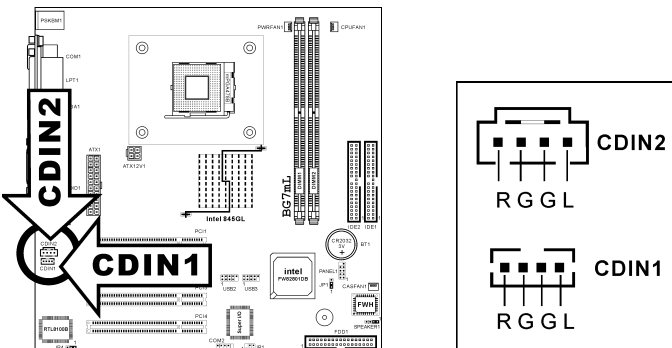
- To use the audio connector at front panel, remove all the jumpers on this header, and then connect to front panel by the extension cable provided with the chassis.
- To use the audio connector at rear panel, disconnect the extension cable, attach the jumpers back at pin 5-6, and pin 9-10 (default setting).

Pin	Pin Assignment	Pin	Pin Assignment
1	Audio Mic.	2	Ground
3	Audio Mic. Bias	4	VCC
5	Speaker Out Right Channel	6	Speaker Out Right Channel Return
7	X	8	NC
9	Speaker Out Left Channel	10	Speaker Out Left Channel Return



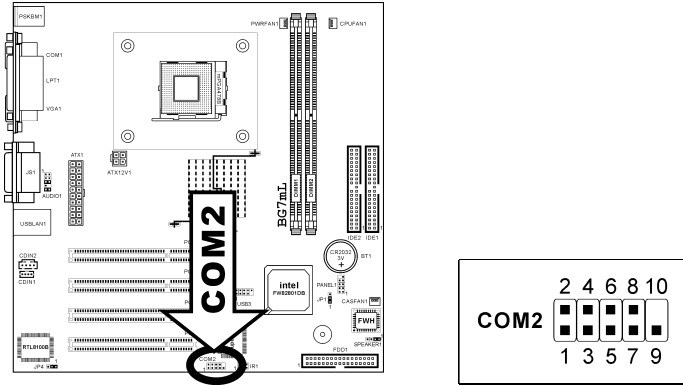
(9). CDIN1/CDIN2: Internal Audio Connector

These connectors connect to the audio output of internal CD-ROM drive or add-on card.



(10).COM2: Onboard Serial Port Header

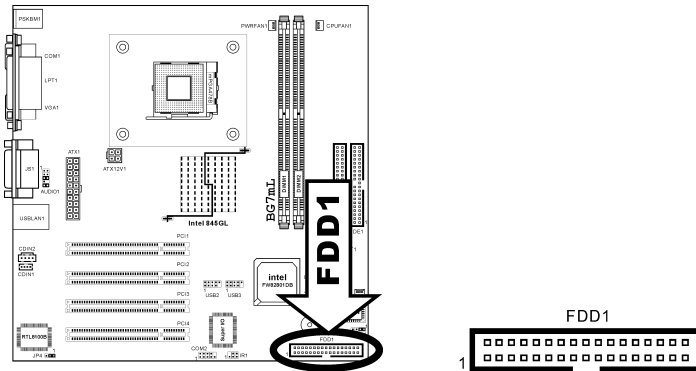
Use this header to connect to second serial port with an extension bracket.



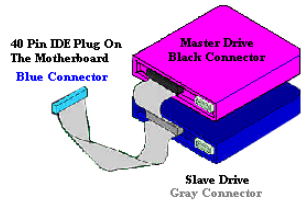
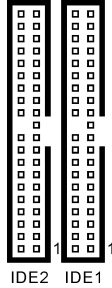
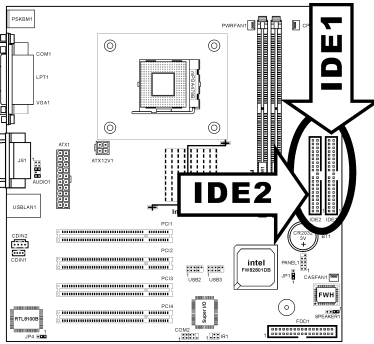
(11).FDD1 Connector

There are 34 wires and two connectors on each floppy cable providing two floppy disk drives connection. Connect the single end at the longer length of ribbon cable to this FDC1, and the two connectors on the other end to the floppy disk drives. Generally you need only one floppy disk drive in your system.

Note: The red line on the ribbon cable should be aligned with pin 1 on this connector.



(12). IDE1 and IDE2 Connectors



This motherboard provides two IDE ports to connect up to four IDE drives at Ultra ATA/100 mode by Ultra ATA/66 ribbon cables. Each cable has 40-pin 80-conductor and three connectors, providing two hard drives connection with motherboard. Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port on motherboard, and the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors on hard drives.

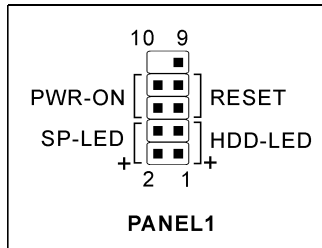
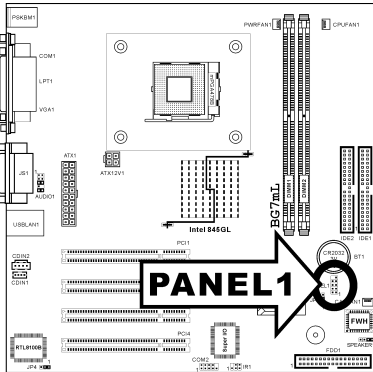
If you want to connect two hard drives together through one IDE channel, you must configure the second drive to Slave mode after the first Master drive. Please refer to the drives' documentation for jumper settings. The first drive connected to IDE1 is usually referred to as "Primary Master", and the second drive as "Primary Slave". The first drive connected to IDE2 is referred to as "Secondary Master" and the second drive as "Secondary Slave".

Keep away from connecting one legacy slow speed drive, like CD-ROM, together with another hard drive on the same IDE channel; this will drop your integral system performance.

(13). PANEL1 Header

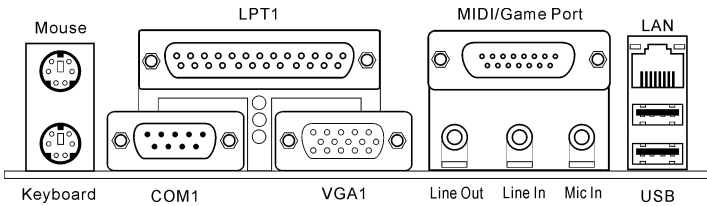
This header is used for connecting switches and LED indicators on the chassis front panel.

Watch the power LED pin position and orientation. The mark “+” align to the pin in the figure below stands for positive polarity for the LED connection. Please pay attention to connect these headers. A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could cause system malfunction.



- **Pin 1-3: HDD-LED**
Connects to the HDD LED cable of chassis front panel.
- **Pin 5-7: RESET**
Connects to the Reset Switch cable of chassis front panel.
- **Pin 2-4: SP-LED**
Connects to the Suspend LED cable (if there is one) of chassis front panel.
- **Pin 6-8: PWR-ON**
Connects to the Power Switch cable of chassis front panel.

(14). Back Panel Connectors



- **Mouse: PS/2 Mouse Connector**
Connects to PS/2 mouse.
- **Keyboard: PS/2 Keyboard Connector**
Connects to PS/2 keyboard.
- **LPT1 Connector**
Connects to printer or other devices that support this communication protocol.
- **COM1 Connector**
This motherboard provides two COM ports to connect external modem, mouse or other devices that support this communication protocol. One is located at the on-board COM1 connector, and the other one is available with an extension cable and I/O shield connected through the COM2 header.
- **VGA1 Connector:**
Connects to monitor.
- **MIDI/GAME Port Connector:**
Connects to joystick, game pad, or other simulation hardware devices.
- **Line Out**
Connects to headphone or an external powered stereo speaker.
- **Line In**
Connects to the line out from external audio sources.
- **Mic In**
Connects to the plug from microphone.
- **LAN Connector**
Connects to Local Area Network.
- **USB Port Connectors**
Connects to USB devices such as scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc.

Chapter 4. BIOS Setup

The BIOS is a program located on a Flash Memory chip on the motherboard. This program will not be lost when you turn the computer off. This program is also referred to as the boot program. It is the only channel the hardware circuit has to communicate with the operating system. Its main function is to manage the setup of the motherboard and interface card parameters, including simple parameters such as time, date, hard disk drive, as well as more complex parameters such as hardware synchronization, device operating mode, and setup of CPU speed. The computer will operate normally, or will operate at its best, only if all of these parameters are correctly configured through the BIOS.

Don't change the parameters inside the BIOS unless you fully understand their meanings and consequences: The parameters inside the BIOS are used to setup the hardware synchronization or the device-operating mode. If the parameters are not correct, they will produce errors, the computer will crash, and sometimes you will not even be able to boot the computer after it has crashed. We recommend that you do not change the parameters inside the BIOS unless you are very familiar with them. If you are not able to boot your computer anymore, please refer to the description of JP1 "CMOS Memory Clearing Header" in Chapter 3.

When you start the computer, the BIOS program controls it. The BIOS first operates an auto-diagnostic test called POST (Power On Self Test) for all of the necessary hardware. It then configures the parameters of the hardware synchronization, and detects all of the hardware. Only when these tasks are completed does it give up control of the computer to the next level, which is the operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performs at its best. After the BIOS has achieved the auto-diagnostic and auto-detection operations, it will display the following message:

PRESS DEL TO ENTER SETUP

The message will be displayed for three to five seconds, if you press the key, you will access the BIOS Setup menu. At that moment, the BIOS will display the following screen:

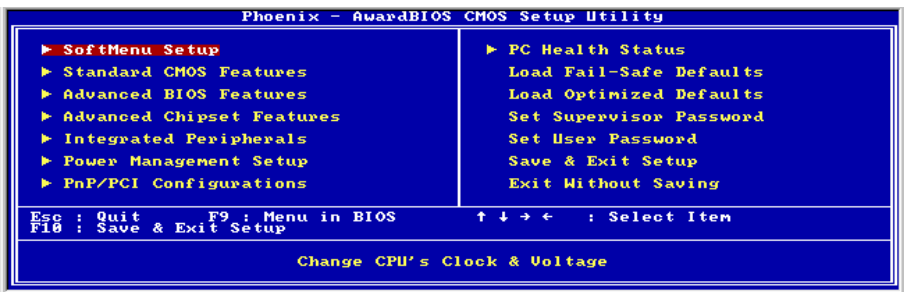


Figure 4-1. CMOS Setup Utility

NOTE: Because the BIOS menu is being constantly improved to increase stability and performance, the BIOS screens in this manual may not completely match your BIOS version. All the default settings in this chapter are taken from the Load Optimized Defaults settings, which are different from those taken from Load Fail-Safe Defaults.

In the BIOS Setup main menu of Figure 4-1, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press **Esc** to quit the BIOS Setup.
- Press **↑ ↓ ← →** (up, down, left, right) to choose, in the main menu, the option you want to confirm or to modify.
- Press **F10** when you have completed the setup of BIOS parameters to save these parameters and to exit the BIOS Setup menu.
- Press **Page Up/Page Down** or **+/-** keys when you want to modify the BIOS parameters for the active option.

4-1. SoftMenu Setup

This menu specifies your settings for CPU frequency and voltage control.

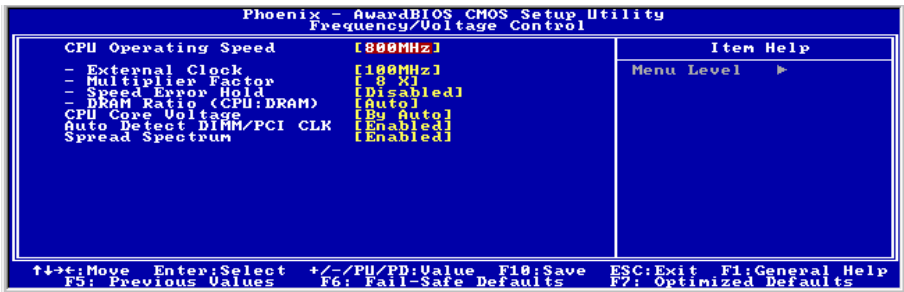


Figure 4-2. SoftMenu Setup

CPU Operating Speed:

This option sets the CPU speed. Select the CPU speed according to the type and speed of your CPU.

User Define:

WARNING: The wrong settings of the multiplier and external clock in certain circumstances may cause CPU damage. Setting the working frequency higher than the PCI chipset or processor specs, may cause abnormal memory module functioning, system hangs, hard disk drive data lose, abnormal functioning of the VGA card, or abnormal functioning with other add-on cards. Using non-specification settings for your CPU is not the intention of this explanation. These should be used for engineering testing, not for normal applications.

If you use non-specification settings for normal operation, your system may not be stable, and may affect system reliability. Also, we do not guarantee the stability and compatibility for settings that are not within specification, and any damage of any elements on the motherboard or peripherals, is not our responsibility.

✱ **External Clock:**

After choosing the “**CPU Operating Speed**” option as “**User Define**”, you can choose the external clock frequency from 100MHz to 250 MHz. The best frequency is either 100MHz or 133MHz depending on the CPU type and its speed. The default setting is **100MHz**.

✱ **Multiplier Factor:**

This item determines the multiplier factor of your CPU.

NOTE: Some processors might have this multiplier factor locked, so there is no way to choose a higher multiplier factor.

✱ **Speed Error Hold:**

The default setting is **Disabled**. If you change the setting to “Enabled” when the CPU speed setting is wrong, the system will hold.

✱ **DRAM Ratio (CPU:DRAM):**

This item determines the frequency ratio between CPU and DRAM.

CPU Core Voltage:

This item selects the CPU core voltage.

ATTENTION: A wrong voltage setting may cause the system unstable or even damage the CPU. Please leave it to default settings unless you are fully aware of its consequences.

Auto Detect DIMM/PCI CLK:

This item enables or disables to detect the DIMM and PCI clock frequency automatically.

Spread Spectrum:

This item is used for EMC (**E**lectro-**M**agnetic **C**ompatibility) testing for optimal results.

4-2. Standard CMOS Features Setup Menu

This section contains the basic configuration parameters of the BIOS. These parameters include date, hour, VGA card, FDD and HDD settings.



Figure 4-3. Standard CMOS Setup Screen Shot

Date (mm:dd:yy):

You can set the date in this item: month (mm), date (dd) and year (yy).

Time (hh:mm:ss):

You can set the time in this item: hour (hh), minute (mm) and second (ss).

IDE Primary Master / Slave and IDE Secondary Master / Slave:

These items have a sub-menu to let you choose further options. You can refer to figure 4-4 to check what options are available.



Figure 4-4. IDE Primary Master Setup Screen Shot

IDE HDD Auto-Detection:

Press the <Enter> key for the BIOS to auto detect all detailed parameters of the hard disk

drives (HDD). If auto detection is successful, the correct values will be shown in the remaining items of this menu.

NOTE: A new IDE HDD must be first formatted, otherwise it can not read/write. The basic step in using a HDD is to make a **HDD low-level format**, then run FDISK, and then FORMAT the drive. Most current HDDs have already been subjected to low-level format at the factory, so you can probably skip this operation. Remember though, the primary IDE HDD must have its partition set to active within the FDISK procedure.

If you are using an old HDD that is already formatted, auto detection can not detect the correct parameters. You may need to do a low-level format or set the parameters manually, and then check if the HDD is working.

IDE Primary Master:

Three settings are available: *Auto, Manual and None*. If you choose Auto, the BIOS will automatically check what kind of hard disk you are using. If you want to set the HDD parameters yourself, make sure you fully understand the meaning of the parameters, and be sure to refer to the manual provided by the HDD manufacturer to get the settings right.

Access Mode:

Since old operating systems were only able to support HDDs with capacities no bigger than 528MB, any hard disk with more than 528MB was unusable. AWARD BIOS features a solution to this problem: you can, according to your operating system, choose four operating modes: NORMAL → LBA → LARGE → Auto.

The HDD auto detection option in the sub-menu will automatically detect the parameters of your hard disk and the mode supported.

Auto: Lets the BIOS detect your HDD access mode and make the decisions.

Normal mode: Standard normal mode supports hard disks of up to 528MB or less. This mode directly uses positions indicated by Cylinders (CYLS), Heads, and Sectors to access data.

LBA (Logical Block Addressing) mode: The earlier LBA mode can support HDD capacities of up to 8.4GB, and this mode uses a different method to calculate the position of disk data to be accessed. It translates Cylinders (CYLS), Heads and Sectors into a logical address where data is located. The Cylinders, Heads, and Sectors displayed in this menu do not reflect the actual structure of the hard disk. They are just reference values used to calculate actual positions. Currently, all high capacity hard disks support this mode and that is why **we recommend you use this mode**. Currently, the BIOS can support the INT 13h extension function, enabling the LBA mode to support hard disk drive capacities exceeding 8.4GB.

Large Mode: When the number of cylinders (CYLS) of the hard disk exceeds 1024 and DOS is not able to support it, or if your operating system does not support LBA mode, you should select this mode.

Capacity:

This item auto displays your HDD size. Note that this size is usually slightly greater than the size given by a disk checking program of a formatted disk.

NOTE: All the items below are available when you set the item “Primary IDE Master” to “Manual”.

Cylinder:

When disks are placed directly above one another along the shaft, the circular vertical “slice” consisting of all the tracks located in a particular position is called a cylinder. You can set the number of cylinders for a HDD. The minimum number you can enter is 0, the maximum number you can enter is 65536.

Head:

This is the tiny electromagnetic coil and metal pole used to create and read back the magnetic patterns on the disk (also called the read/write head). You can configure the number of read/write heads. The minimum number you can enter is 0, the maximum number you can enter is 255.

Precomp:

The minimum number you can enter is 0, the maximum number you can enter is 65536.

WARNING: Setting a value of 65536 means no hard disk exists.

Landing Zone:

This is a non-data area on the disk's inner cylinder where the heads can rest when the power is turned off. The minimum number you can enter is 0, the maximum number you can enter is 65536.

Sector:

The minimum segment of track length that can be assigned to stored data. Sectors usually are grouped into blocks or logical blocks that function as the smallest units of data permit. You can configure this item to sectors per track. The minimum number you can enter is 0, the maximum number you can enter is 255.

Drive A & Drive B:

If you have installed the floppy disk drive here, then you can select the type of floppy drive it can support.

Floppy 3 Mode Support:

Mode floppy disk drives (FDD) are 3 1/2” drives used in Japanese computer systems. If you need to access data stored in this kind of floppy, you must select this mode, and of course you must have a 3 Mode floppy drive.

Video:

You can select the VGA modes for your video adapter.

Halt On:

You can select which type of error will cause the system to halt.

4-3. Advanced BIOS Features Setup Menu

With each item, you can press <Enter> at any time to display all the options for that item.

ATTENTION: Advanced BIOS Features Setup Menu has already been set for maximum operation. If you do not really understand each of the options in this menu, we recommend



Figure 4-5. Advanced BIOS Features Setup Screen

Virus Warning:

When this feature is enabled, if there is any attempt from a software or an application to access the boot sector or the partition table, the BIOS will warn you that a boot virus is attempting to access the hard disk.

CPU L1 & L2 Cache:

This item is used to enable or to disable the CPU level 1 cache. When the cache is set to *Disabled*, it is much slower, so the default setting for this item is *Enabled* since it will speed up memory access. Some old and very poorly written programs will make the computer malfunction or crash if the system speed is too high. In this case, you should disable this feature. The default setting is *Enabled*.

Quick Power On Self Test:

After the computer has been powered on, the BIOS of the motherboard will run a series of tests in order to check the system and its peripherals. If the Quick Power on Self-Test feature is enabled, the BIOS will simplify the test procedures in order to speed up the boot process.

First Boot Device:

When the computer boots up, the BIOS attempts to load the operating system from the

devices in the sequence selected in these items: floppy disk drive A, LS/ZIP devices, hard drive C, SCSI hard disk drive or CD-ROM.

Second Boot Device:

Description is the same as the *First Boot Device*, the default setting is **HDD-0**.

Third Boot Device:

Description is same as the *First Boot Device*, the default setting is **LS120**.

Boot Other Device:

This setting allows the BIOS to try three kinds of boot devices that are set from the above three items.

Swap Floppy Drive:

When set to enabled, you don't need to open the computer case to swap the position of floppy disk drive connectors. Drive A can be set as drive B and drive B can be set as drive A.

Boot Up Floppy Seek:

When the computer boots up, the BIOS detects if the system has an FDD or not. When this item is enabled, if the BIOS detects no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test.

Boot Up NumLock Status:

On: At boot up, the Numeric Keypad is in numeric mode. (Default Settings)

Off: At boot up, the Numeric Keypad is in cursor control mode.

Gate A20 Option:

This item allows you to select how gate A20 is handled. Gate A20 is a device used to address memory above 1 Mbytes. When set to **Fast**, the system chipset controls Gate A20. When set to **Normal**, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to **Fast** improves system speed, particularly with OS/2 and Windows.

Typematic Rate Setting:

This item allows you to adjust the keystroke repeat rate. When set to *Enabled*, you can set the two keyboard typematic controls that follow (*Typematic Rate* and *Typematic Rate Delay*). If this item is set to *Disabled*, the BIOS will use the default setting.

Typematic Rate (Chars/Sec):

When you press a key continuously, the keyboard will repeat the keystroke according to the rate you have set (Unit: characters/second).

Typematic Delay (Msec):

When you press a key continuously, if you exceed the delay you have set here, the keyboard will automatically repeat the keystroke according to a certain rate (Unit: milliseconds).

Security Option:

This option can be set to System or Setup. The default setting is **Setup**. After you have created a password through PASSWORD SETTING, this option will deny access to your system (System) or modification of computer setup (BIOS Setup) by unauthorized users.

SYSTEM: When you choose System, a password is required each time the computer boots up. If the correct password is not given, the system will not start.

SETUP: When you choose Setup, a password is required only when accessing the BIOS Setup. If the correct password is not given, you can't enter the BIOS setup menu.

To disable security, select *Set Supervisor Password* at main menu and then you will be asked to enter the password. Do not type anything and just press the <Enter> key and it will disable security. Once security is disabled, the system will boot and you can enter the *BIOS setup menu* freely

NOTE: Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all previously set options.

APIC Mode:

If you set to *Enabled*, the next item will be available to choose. When you set it to *Disabled*, the system will use the default six PCI IRQs for all devices, and will not increase the number of PCI IRQs.

MPS Ver. Control For OS:

This item specifies which version of MPS (Multi-Processor Specification) this motherboard will use. If you use an older OS for dual processor executing, please set this option to 1.1.

OS Select For DRAM > 64MB:

When the system memory is bigger than 64MB, the communication method between the BIOS and the operating system will differ from one operating system to another. If you use OS/2, select *OS2*; if you are using another operating system, select *Non-OS2*.

HDD S.M.A.R.T. Capability:

SMART (Self-Monitoring Analysis and Reporting Technology) is a techniques which warns users of the HDD's defects and informs the users to transfer HDD's data to other places. Therefore, this technique results in improving the confidence in data preservation and the HDD itself. Therefore, if you make sure your HDD has supports this feature, then set this item to Enabled. This allows the operating system to take the necessary precautions and warn the

user. For detailed information of your HDD specs, please read the HDD's user's manual or contact the dealer.

Report No FDD For WIN 95:

When using Windows® 95 without a floppy drive, please set this item to *Yes*. Otherwise, set it to *No*. The default setting is *No*.

Small Logo(EPA) Show:

This item determines to show the EPA logo when booting. The default setting is *Disabled*.

4-4. Advanced Chipset Features Setup Menu

The Chipset Features Setup Menu is used to modify the contents of the buffers in the chipset on the motherboard. Since the parameters of the buffers are closely related to hardware, if the setup is not correct or is false, the motherboard will become unstable or you will not be able to boot up. If you don't know the hardware very well, use default values (i.e. use the LOAD SETUP DEFAULTS option). The only time you might consider making any changes is if you discover that data is being lost while using your system.

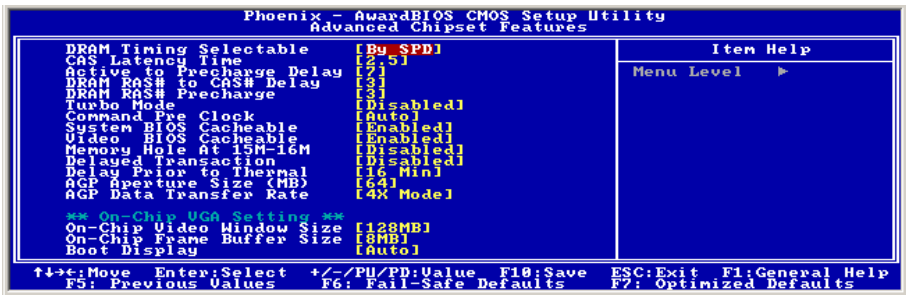


Figure 4-6. Chipset Features Setup Screen

DRAM Timing Selectable:

This item sets the optimal timings for the following four items, depending on the memory module you are using. The default setting "By SPD" configures these four items by reading the contents in the SPD (Serial Presence Detect) device. The EEPROM on the memory module stores critical parameter information about the module, such as memory type, size, speed, voltage interface, and module banks.

*** CAS Latency Time:**

This item controls the latency between the DRAM read command and the time that the data becomes actually available. The options are: 1.5, 2, and 2.5.

*** Active to Precharge Delay:**

The options are: 7, 6, and 5.

*** DRAM RAS# to CAS# Delay**

This item controls the latency between the DRAM active command and the read/write command. The options are: 2 and 3.

*** DRAM RAS# Precharge:**

This item controls the idle clocks after issuing a precharge command to the DRAM.

Turbo Mode:

This item enhances performance by selecting *Enabled*, but the system might be unsteady. The default setting is *Disabled*.

Command Pre Clock:

This item enhances performance by selecting *Optimal*, but the system might be unsteady. The default setting is *Auto*.

System BIOS Cacheable:

You can select Enabled or Disabled. The default setting is *Enabled*. When you select *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS Cacheable:

You can select Enabled or Disabled. The default setting is *Enabled*. *Enabled* allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Memory Hole At 15M-16M:

Two options are available: Enabled and Disabled. The default setting is *Disabled*. This option is used to reserve the memory block 15M-16M for ISA adapter ROM. Some special peripherals need to use a memory block located between 15M and 16M, and this memory block has a size of 1M. We recommend that you disable this option.

Delayed Transaction:

Two options are available: Enabled and Disabled. The default setting is *Disabled*. Set the option to enabled or disabled PCI 2.1 features including passive release and delayed transaction for the chipset. This function is used to meet the latency of PCI cycles to or from the ISA bus. This option must be enabled to provide PCI 2.1 compliance. If you have an ISA card compatibility problem, you can try to enable or disable this option for optimal results.

Delay Prior to Thermal:

The options are: 4, 8, 16, and 32 Minutes. The default setting is *16 Min.*

AGP Aperture Size:

This option specifies the amount of system memory that can be used by the AGP device.

AGP Data Transfer Rate:

You can select the AGP device data transfer rate capability.

On-Chip Video Window Size:

This option specifies the amount of system memory that can be used by the AGP graphic data.

On-Chip Frame Buffer Size:

This option selects the size of on-chip frame buffer.

Boot Display:

This item is used for Intel define ADD card only. Leave this item to its default settings.

4-5. Integrated Peripherals

In this menu, you can change the onboard I/O device, I/O port address and other hardware settings.

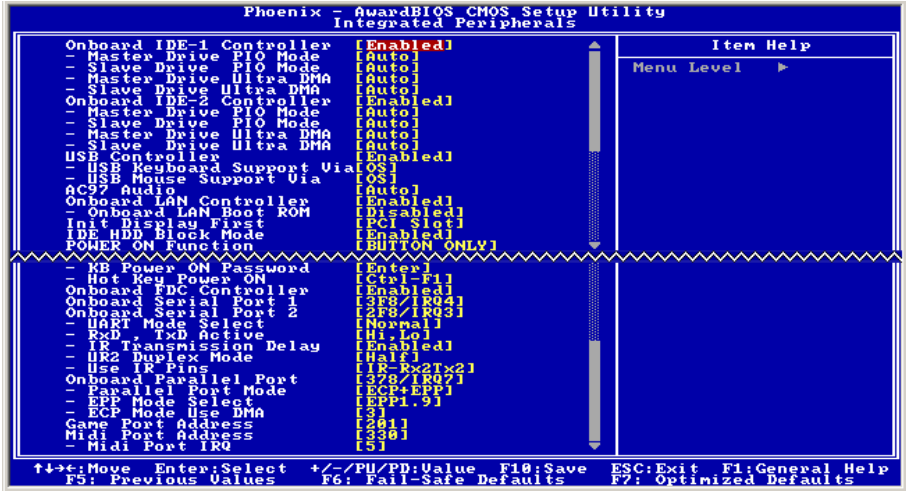


Figure 4-7. Integrated Peripherals Menu Screen

Onboard IDE-1 Controller:

The onboard IDE 1 controller can be set as Enabled or Disabled. The default setting is *Enabled*. The integrated peripheral controller contains an IDE interface with support for two IDE channels. If you choose *Disabled*, it will effect the settings of four items not available. For example, if you disabled the *Onboard IDE-1 Controller*, you will also disable the *Master/Slave Drive PIO Mode* and *Master/Slave Drive Ultra DMA*.

* Master/Slave Drive PIO Mode

Six options are available: Auto → Mode 0 → Mode 1 → Mode 2 → Mode 3 → Mode 4. The five IDE PIO (Programmed Input/Output) items let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode (default setting), the system automatically determines the best mode for each device.

* Master/Slave Drive Ultra DMA

Two options are available: Auto and Disabled. The default setting is *Auto*. Ultra DMA is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 100 MB/sec.

Ultra DMA/33 or Ultra DMA/66/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows® 95 OSR2 / 98 / ME / NT / 2000 or a third-party IDE bus master driver).

Auto: If your hard drive and your system software both support Ultra DMA, select *Auto* to enable BIOS support.

Disabled: If you encounter a problem in using Ultra DMA devices, you can try to disable this item.

Onboard IDE-2 Controller:

The description is same as the *Onboard IDE-1 Controller*.

USB Controller:

Two options are available: Enabled and Disabled. The default setting is **Enabled**. This motherboard provides two Universal Serial Bus (USB) ports, thus supporting USB devices. If you don't want to use USB devices, set it to *Disabled*, then the item *USB Keyboard Support & USB Mouse Support* will also be disabled.

*** USB Keyboard Support:**

Two options are available: OS and BIOS. The default setting is **OS**. If you want to use USB keyboard in DOS environment, please set it to BIOS.

*** USB Mouse Support:**

Two options are available: OS and BIOS. The default setting is **OS**. If you want to use USB mouse in DOS environment, please set it to BIOS.

AC97 Audio

When set to *Auto*, it will allow the BIOS to detect the audio device you use. If an audio device is detected, the onboard audio controller will be able to support it. If you want to use another audio adapter card to connect the audio connectors, please set this item to *Disabled*.

Onboard LAN Controller:

This option enables or disables the LAN controller. The default setting is **Enabled**.

Onboard LAN Boot ROM:

This option enables or disables the Boot ROM on LAN controller. The default setting is **Enabled**.

Init Display First:

Two options are available: PCI Slot and AGP. The default setting is **PCI Slot**. When you install an additional display card, you can choose either a PCI display card or an AGP display card to activate the display boot-up screen.

IDE HDD Block Mode:

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select *Enabled* for automatic detection of the optimal number of block read/writes per sector the drive can support. The default setting is *Enabled*.

POWER ON Function:

This item allows you to select which way you want your system to power on. Seven items are available: Password → Hot Key → Mouse Left → Mouse Right → Any Key → BUTTON ONLY → Keyboard 98. The default setting is *BUTTON ONLY*.

NOTE: The mouse wake up function can only be used with the PS/2 mouse, not with a mouse that uses the COM port and USB connection. *Mouse Left (Mouse Right)* means you need to double click the mouse *left (right)* button, for the computer to power on. You also need to note the compatibility issue with your PS/2 mouse. Some PS/2 mice cannot wake up the system because of compatibility problems. Also, if the specs of your keyboard are too old, it may fail to power on.

KB Power ON Password: This option allows you to set a password required in order to Power ON your computer. You will be asked to enter your password and then to confirm it. Do not forget your password. Should you forget your password, you will have to open your computer case, clear the CMOS and reset all parameters again in order to be able to utilize this function.

Hot Key Power ON: There are twelve options are available, Ctrl-F1 to Ctrl-F12. You can select this item and using the <Ctrl> plus the one of each function key (F1 to F12) to power on the computer. The default setting is *Ctrl-F1*.

Onboard FDC Controller:

This item enables or disables the onboard FDC controller.

Onboard Serial Port 1:

This is used to specify the I/O address and IRQ of Serial Port 1. Six options are available: Disabled → 3F8/IRQ4 → 2F8/IRQ3 → 3E8/IRQ4 → 2E8/IRQ3 → AUTO. The default setting is *3F8/IRQ4*.

Onboard Serial Port 2:

This is used to specify the I/O address and IRQ of Serial Port 2. Six options are available: Disabled → 3F8/IRQ4 → 2F8/IRQ3 → 3E8/IRQ4 → 2E8/IRQ3 → AUTO. The default setting is *2F8/IRQ3*.

UART Mode Select: Four options are available: Normal, IrDA, ASKIR (Amplitude Shift Keyed IR), and SCR. The default setting is *Normal*. When you choose the “Normal ” or “SCR ”, item UR2 Duplex Mode become available.

RxD , TxD Active: Four options are available: Hi, Hi → Hi, Lo → Lo, Hi → Lo, Lo. The default setting is *Hi, Lo*. Set IR transmission/reception polarity as High or Low.

IR Transmission Delay: Two options are available: Enabled and Disabled. The default setting is *Enabled*. Set IR transmission delays 4 character-time (40 bit-time) when SIR is changed from RX mode to TX mode.

UR2 Duplex Mode: Two options are available: Full and Half. The default setting is *Half*. This item lets you choose the operation mode for your IR KIT. Some IR device only can work at half duplex mode. Refer to your IR KIT user's guide to find out which setting is correct.

Use IR Pins: Two options are available: RxD2, TxD2 and IR-Rx2Tx2. The default setting is *IR-Rx2Tx2*. If you choose *RxD2, TxD2*, your motherboard must support a COM port IR KIT connection. Otherwise, you can only choose the *IR-Rx2Tx2* to use the IR header on your motherboard to connect your IR KIT. Please use the default setting.

Onboard Parallel Port:

Sets the I/O address and IRQ of the onboard parallel port. Four options are available: Disable → 378/IRQ7 → 278/IRQ5 → 3BC/IRQ7. Default setting is *378/IRQ7*.

Parallel Port Mode: Four options are available: SPP → EPP → ECP → ECP+EPP. The default setting is *SPP* mode.

EPP Mode Select: Two options are available: EPP1.7 → EPP1.9. The default setting is *EPP 1.7*. When the mode selected for the parallel port mode is EPP, the two EPP version options are available.

ECP Mode Use DMA: Two options are available: 1 → 3. The default setting is *3*. When the mode selected for the parallel port mode is ECP, the DMA channel selected can be Channel 1 or Channel 3.

Game Port Address:

This item sets the address of the onboard game port connector.

Midi Port Address:

This item sets the address of the onboard midi port connector.

Midi Port IRQ: This item sets the IRQ of the onboard midi port connector. If you choose disable the *Midi Port Address*, then this field is not available.

NOTE: If you bought an audio adapter and wanted to replace the use of onboard audio solution, you have to disable three items in BIOS. Otherwise, your audio adapter may not work well. These three items are:

AC 97 Audio: set to *Disabled*

Game Port Address: set to *Disabled*

Midi Port Address: set to *Disabled*

4-6. Power Management Setup Menu

This menu sets up the power management in order to reduce power consumption.



Figure 4-8. Power Management Setup Menu

ACPI Suspend Type

This item specifies the power saving mode for ACPI (Advanced Configuration and Power Interface). The options are: S1(POS), S3(STR), S1 & S3.

- **S1 (POS):** Enables the function of Power On Suspend.
- **S3 (STR):** Enables the function of Suspend to RAM.

Run VGABIOS if S3 Resume:

This item decides to run the VGABIOS or not if the S3 status resumes.

USB Dev Wake-Up From S3

This item allows you to use a USB device to wake up a system that is in the S3 (STR) state.

Modem Use IRQ:

You can specify the IRQ for modem use. Eight options are available: NA → 3 → 4 → 5 → 7 → 9 → 10 → 11. The default setting is *NA*.

Soft-Off by PBTN

Two options are available: Instant-off and Delay 4 Sec.. The default setting is *Instant-off*. Pressing the power button for more than four seconds forces the system to enter the Soft-Off state when the system has “hung”.

CPU THRM-Throttling

This option is used during Suspend To RAM (STR) mode. It controls the CPU speed as a percentage of regular power.

Wake-Up by PCI card(PME#):

This item allows you wake-up your computer by PCI devices. For instance, if you had installed a PCI LAN card with Wake-Up on LAN capability, then you could wake-up your computer from another computer via a network by sending a wake-up frame signal. This feature also allows the PCI card built-in hardware function to support the wake up function without special cables connected to the motherboard.

NOTE: This feature needs a specific network interface (optional). Also your ATX power supply +5V standby power must be at least 720mA compatible.

Power On by Ring:

Two options are available: Enabled and Disabled. Default setting is *Disabled*. If you connect an external modem to the onboard serial port, the system will be turned on when a telephone ring-up occurs.

Wake-Up by Onboard Lan:

This item allows to wake up the system through the onboard LAN.

Resume by Alarm:

Two options are available: Enabled and Disabled. Default setting is *Disabled*. The RTC alarm can turn on the system. You can set Date (of month) and Time (hour, minute, and second) when you set this item to *Enabled*.

Reload Global Timer Events

When one of the specified events occur, the count down made for entry in power saving mode goes back to zero. Since the computer will enter a power saving mode only after an inactivity delay specified (time specific for Doze, Standby and Suspend modes) and after it has no activity, during this time period, any event will cause the computer to re-count the time elapsed. Resume events are operations or signals that cause the computer to resume time counting.

Primary IDE 0 / Primary IDE 1: Two options are available: Enabled and Disabled. The default setting is *Disabled*. If any primary IDE master/slave I/O activity occurs, it will cause the computer to re-count the time elapsed.

Secondary IDE 0 / Secondary IDE 1: Two options are available: Enabled and Disabled. Default setting is *Disabled*. If any secondary IDE master/slave I/O activity occurs, it will cause the computer to re-count the time elapsed.

FDD, COM, LPT Port: Two options are available: Enabled and Disabled. Default setting is *Disabled*. If any floppy disk, COM ports and Parallel port I/O activity occurs, it will cause the computer to re-count the time elapsed.

PCI PIRQ[A-H]#: Two options are available: Enabled and Disabled. Default setting is *Disabled*. If any INTA~INTD signal activity occurs, it will cause the computer to re-count the time elapsed.

PWR ON After PWR-Fail:

This setting lets you set the system action after a power failure. Three options are available: Off → On → Former-Sts. The default setting is *Off*.

4-7. PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

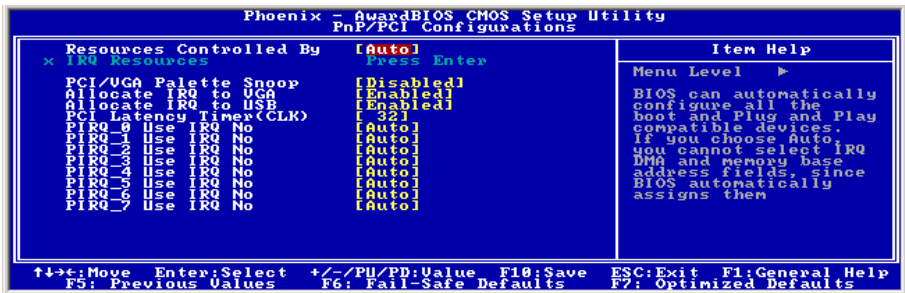


Figure 4-9. PnP/PCI Configurations Setup Screen Shot

Resources Controlled By:

Two options are available: Auto(ESCD) and Manual. Default setting is *Auto(ESCD)*. When the setting is Auto(ESCD), the *IRQ Resources* and *Memory Resources* can not be changed. When resources are controlled manually, the *IRQ Resources* and *Memory Resources* can then be changed.

PCI PnP devices compliant with the Plug and Play standard, whether designed for the PCI bus architecture.

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices. If you select *Auto (ESCD)*, the IRQ Resources item

will be disabled, as the BIOS automatically assigns them. But if you have trouble in assigning the interrupt resources automatically, you can select *Manual* to set which IRQ is assigned to PCI PnP cards.

The following figure shows you the screen of IRQ resources. Each item has two options: PCI Device and Reserved. The default setting is *PCI Device*.

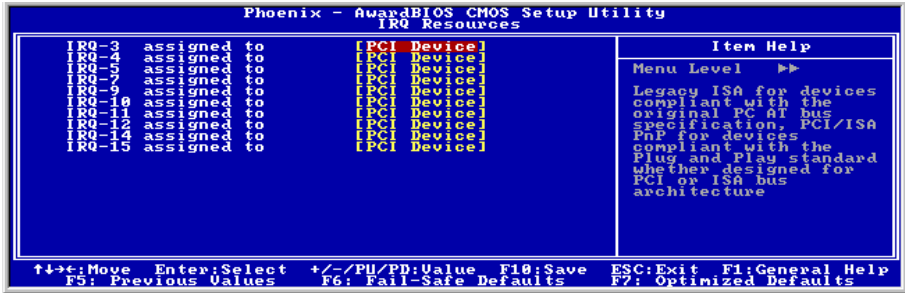


Figure 4-10. IRQ Resources Setup Screen Shot

PCI/VGA Palette Snoop:

This option allows the BIOS to preview VGA Status, and to modify the information delivered from the Feature Connector of the VGA card to the MPEG Card. This option can solve the display inversion to black after you have used the MPEG card.

Allocate IRQ to VGA :

Two options are available: Disabled or Enabled. The default setting is *Enabled*. Name the interrupt request (IRQ) line assigned to the USB/VGA/ACPI (if any) on your system. Activity of the selected IRQ always awakens the system. You can assign an IRQ for the PCI VGA or *Disabled*.

Allocate IRQ to USB:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. If you need another IRQ to be freed up, you can choose to disable this item, and you can get an IRQ. But in some situations in Windows® 95 it may cause the USB port to malfunction or have other problems!

PCI Latency Timer(CLK):

This option selects the controls for the amount of time that the ICH2 arbiter allows a PCI initiator to perform multiple back-to-back transactions on the PCI bus. The options are: 32, 64, 96, 128, 160, 192, 224, and 248 PCI Clocks. The default setting is *32 PCI Clocks*.

PIRO 0 Use IRQ No. ~PIRO 7 Use IRQ No. :

This item allows the IRQ number for the device installed on PCI slots to be specified by the

system automatically or you can specify a fixed IRQ number. This is a useful function when you want to fix the IRQ for a specific device. For example, if you want to move your hard disk to another computer and don't want to re-install Windows[®] NT, then you can specify the IRQ for the device installed on the new computer to fit the original computer settings.

This feature is for the operating system that will record and fix the PCI configuration status, if you want to change it.

For the relations between the hardware layout of PIRQ (the signals from the ICH chipset), INT# (means PCI slot IRQ signals) and devices, please refer to the table below:

Signals	PCI-1	PCI-2	PCI-3	PCI-4
PIRQ_0 Assignment				
PIRQ_1 Assignment	INT A	INT D	INT C	INT B
PIRQ_2 Assignment	INT B	INT A	INT D	INT C
PIRQ_3 Assignment	INT C	INT B	INT A	INT D
PIRQ_4 Assignment	INT D	INT C	INT B	INT A
PIRQ_5 Assignment				
PIRQ_6 Assignment				
PIRQ_7 Assignment				

4-8. PC Health Status

You can set the warning temperature for your computer system, and you can check the fan speeds and power supply voltages of your computer system. The features are useful for monitoring all the important parameters within your computer system. We call it the *PC Health Status*.

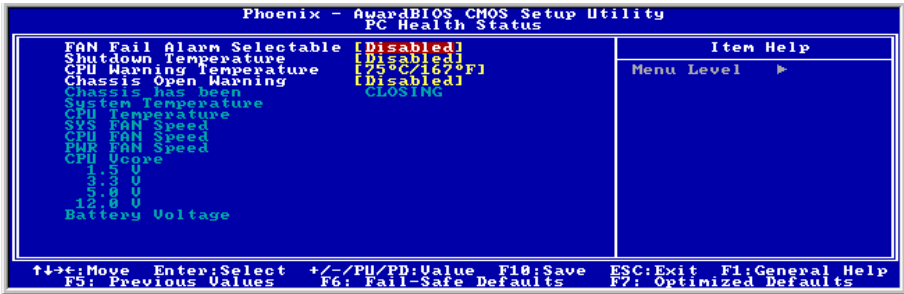


Figure 4-11. PC Health Status Screen Shot

FAN Fail Alarm Selectable:

This item lets you select which one of the fans will be monitored for malfunction.

Shutdown Temperature:

Once the system or CPU temperature exceeds the temperature specified, the CPU will shutdown automatically to avoid damaging. This function only works for an ACPI OS such as Windows 98/Windows 2000 with ACPI activated.

CPU Warning Temperature:

This item lets you select the temperature at which you want the system to send out a warning message to the PC speakers of when the temperature goes beyond either limit. You can select the temperatures you want. The ranges are from 30°C/86°F to 120°C/248°F, default setting is 75°C/167°F °.

Chassis Open Warning:

This item enables or disables the chassis-open warning function.

All Voltages, Fans Speed and Thermal Monitoring:

These unchangeable items list the current status of the CPU and environment temperatures, fan speeds, and system power voltage.

NOTE: The hardware monitoring features for temperatures, fans and voltages will occupy the I/O address from 294H to 297H. If you have a network adapter, sound card or other add-on cards that might use those I/O addresses, please adjust your add-on card I/O address to avoid using these addresses.

4-9. Load Fail-Safe Defaults

Loads Fail Safe settings into the BIOS Setup program. These options are designed to slow the system down for troubleshooting purposes. To load the default values, highlight this option and press <Enter>. Enter “Y” in the confirmation screen and press <Enter> again. User-defined options in the **Standard CMOS Setup** are not affected.

4-10. Load Optimized Defaults

Loads the default values for best performance into the BIOS Setup program. To load the default values, highlight this option and press <Enter>. Enter “Y” in the confirmation screen and press <Enter> again. User-defined options in the **Standard CMOS Setup** are not affected.

4-11. Supervisor Password and User Password Setting

Password can be set to provide protection for the BIOS configuration options, or to restrict access to computer itself.

When enabled, User Password will request all users to enter a password in order to use the system, and/or enter the BIOS setup (but can't change its contents). A Supervisor Password is used to protect the stored CMOS options from being changed by unauthorized users.

Keep in mind that when set, a password is required only when booting the system. It will not provide protection to a system that is already booted.

The password check option is set in Advanced BIOS Features by choosing either System (the password appears every time the system is powered on) or Setup (the password prompt appears only when the users enter the BIOS Setup). The password is stored in CMOS RAM, and can be cleared by the Clear CMOS jumper.

To Set a Password:

You must first set the *Supervisor Password* by choosing (*Supervisor*) Password and pressing <Enter>. Setup prompts for a password.

Enter a 1-8 character password using letters, numbers, or a combination of both. The specific characters are not shown as you enter them. Press <Enter>.

A confirmation box appears asking you to re-enter the password. Enter the password again. Press <Enter>. Follow the same procedure to set the *User Password*.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Changing a Password:

Select the appropriate password option (Supervisor or User) from the main menu and press <Enter>. Enter the current password and press <Enter>. The screen does not display the characters entered. Enter in the new password, then the confirmation. You cannot change the current password unless you know it.

Erasing a Password:

If you know the current password, but want to disable password checking, follow the procedure for changing the password. When Setup prompts for the new password, simply press <Enter>. You will see a message indicating that the password is disabled.

If you do not know the current password, the CMOS must be cleared by the CMOS clearing jumper.

* This will clear all user-defined BIOS Setup options.

4-12. Save & Exit Setup / Exit Without Saving

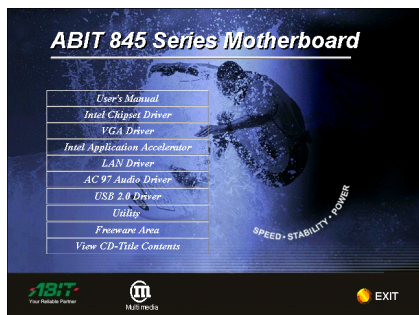
Selecting Save & Exit Setup to save into the CMOS memory all modifications specified during the current session. To save the configuration changes, highlight this option in the main menu and press <Enter>. The system displays a confirmation message on the screen. Press “Y” and then <Enter>. Press the “N” and then <Enter> to abort. The Exit Without Saving options allows the user to exit the BIOS Setup without updating any changes made during the current session.

Appendix A. Install Intel Chipset Driver

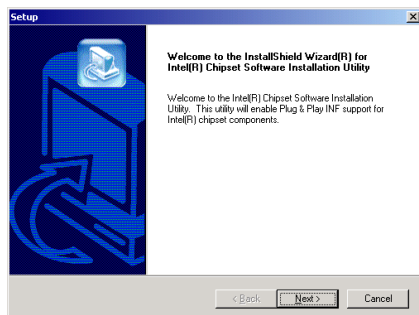
NOTE: Please install this Intel Chipset Driver before installing VGA and Audio driver.

The installation procedures and screen shots in this chapter are based on Windows 2000 operating system. Please follow the on-screen instruction for those of other operating system.

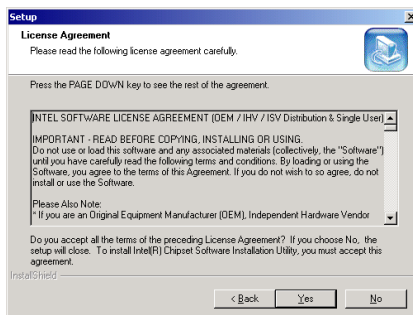
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



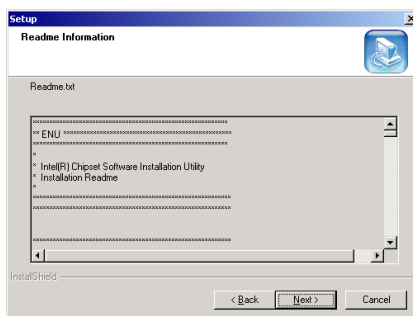
1. Click “Intel Chipset Driver”.



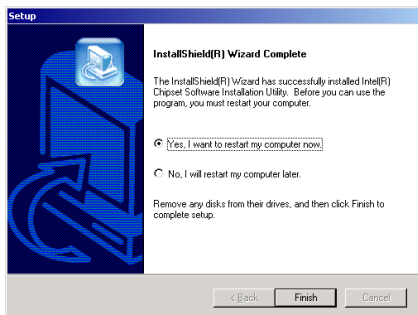
2. Click “Next>”.



3. Click “Yes”.



4. Click “Next>”.



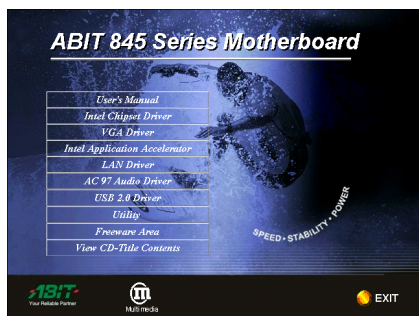
5. Choose **“Yes, I want to restart my computer now”**, and click **“Finish”** to end the installation.

Appendix B. Install Intel Application Accelerator

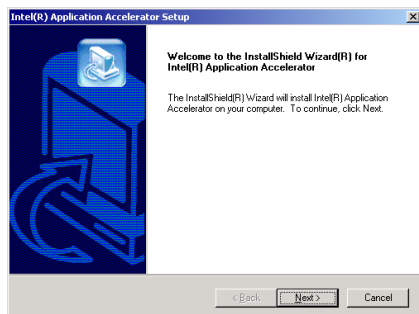
NOTE: Please make sure to install the “Intel Chipset Driver” first and to reboot the system before installing this “Intel Application Accelerator”.

The installation procedures and screen shots in this chapter are based on Windows 2000 operating system. Please follow the on-screen instruction for those of other operating system.

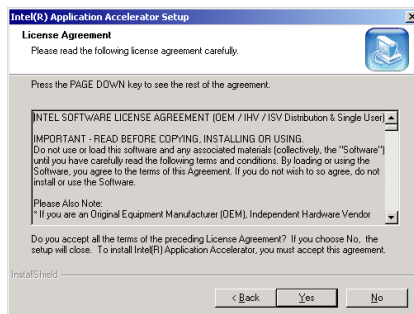
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



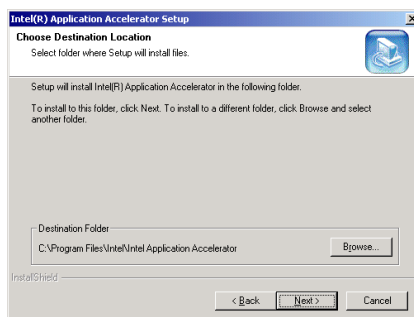
1. Click “Intel Application Accelerator”.



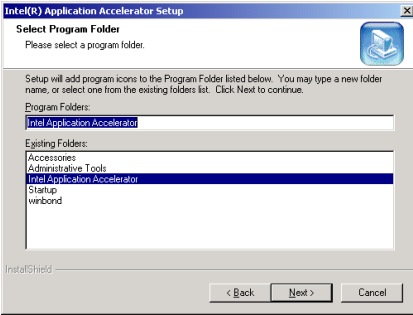
2. Click “Next>”.



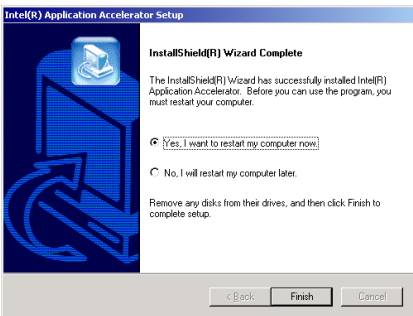
3. Click “Yes”.



4. Click “Next>”.



5. Click “**N**ext>”.



6. Choose “**Yes, I want to restart my computer now**”, and click “**F**inish” to end the installation.

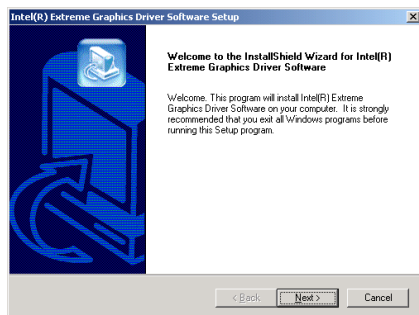
Appendix C. Install VGA Driver

The installation procedures and screen shots in this chapter are based on Windows 2000 operating system. Please follow the on-screen instruction for those of other operating system.

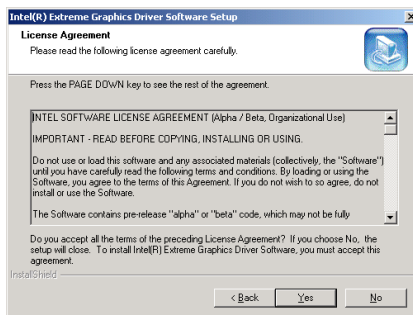
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



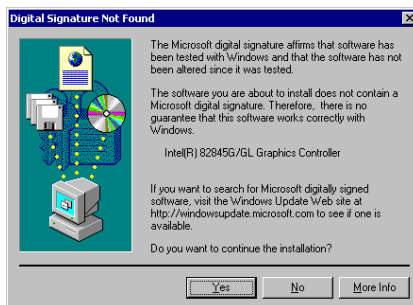
1. Click “VGA Driver”.



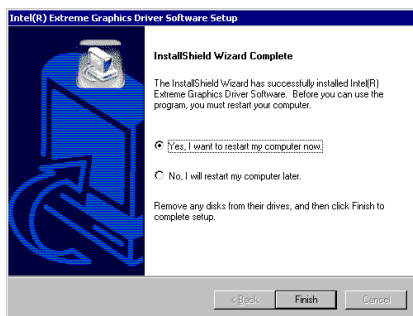
2. Click “Next>”.



3. Click “Yes”.



4. Click “Yes”.



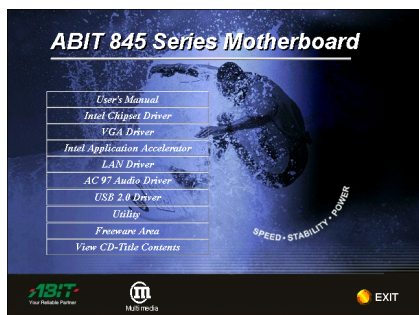
5. Choose “Yes, I want to restart my computer now”, and click “Finish” to end the installation.



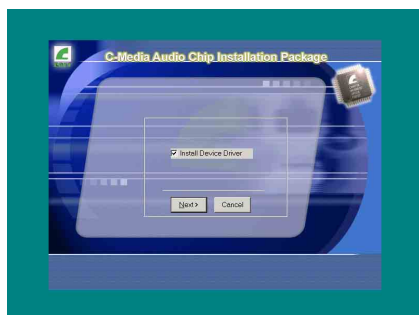
Appendix D. Install Audio Driver

The installation procedures and screen shots in this chapter are based on Windows 2000 operating system. Please follow the on-screen instruction for those of other operating system.

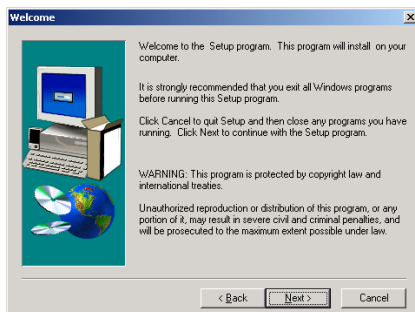
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



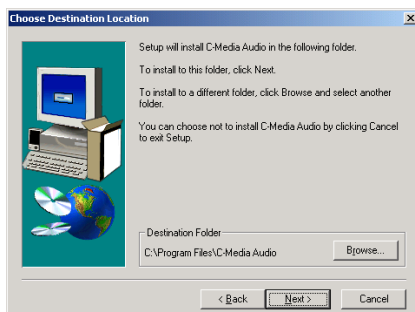
1. Click “AC97 Audio Driver”.



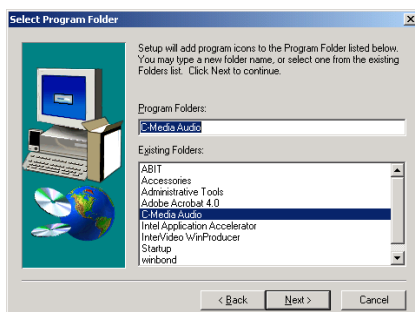
2. Click “Next>”.



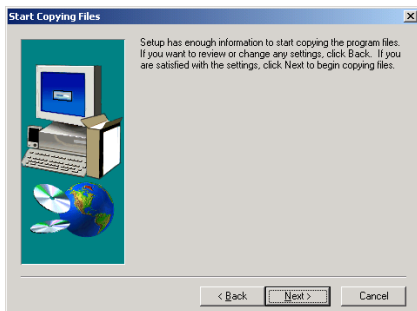
3. Click “Next>”.



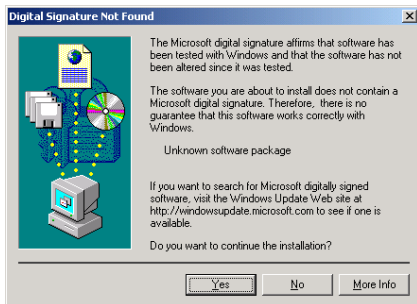
4. Click “Next>”.



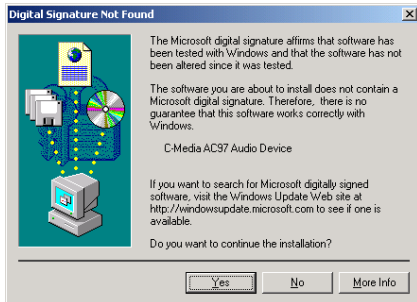
5. Click “Next>”.



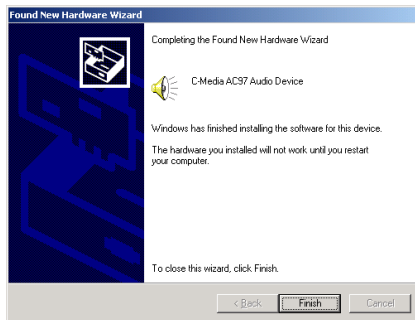
6. Click "Next>".



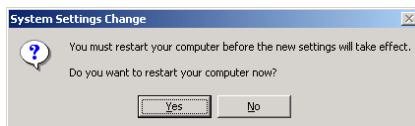
7. Click "Yes".



8. Click "Yes".



9. Click "**F**inish".

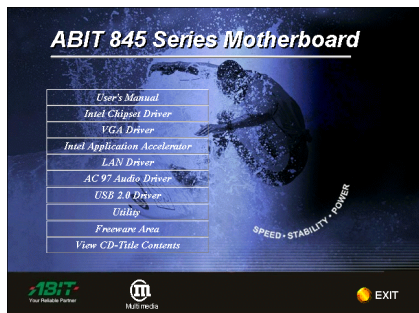


10. Click "**Y**es" to end the installation and to restart the computer now.

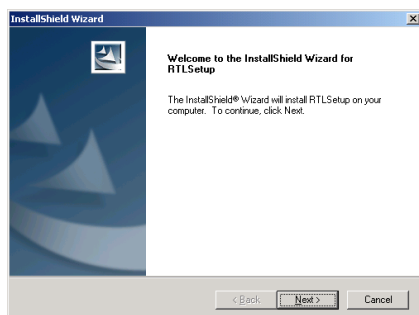
Appendix E. Install LAN Driver

The installation procedures and screen shots in this chapter are based on Windows 2000 operating system. Please follow the on-screen instruction for those of other operating system.

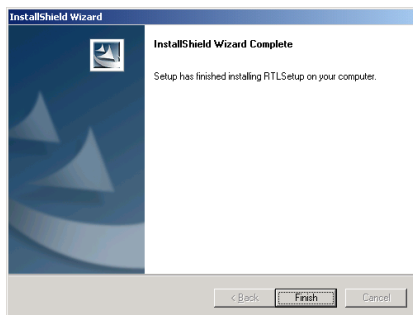
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



1. Click "LAN Driver".



2. Click "Next >".



3. Click "Finish".



Appendix F. Install USB2.0 Driver

USB 2.0 Driver Information

Windows USB 2.0 Driver for Intel ICH4 will be available through ABIT web site announcement:
<http://www.abit.com.tw/abitweb/webjsp/english/faqs/ich4usb2.htm>

SPEED • STABILITY • POWER

ABIT
Your Reliable Partner

Multi media

Previous EXIT

For Intel ICH4 USB 2.0 Driver: Please look into our Web site at <http://www.abit.com.tw/abitweb/webjsp/english/faqs/ich4usb2.htm> for the formal driver release.



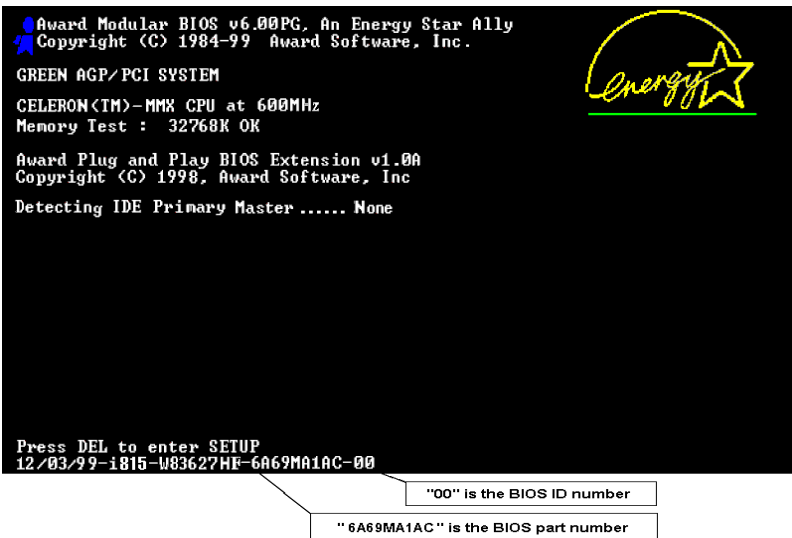
Appendix G. BIOS Update Guide

The procedure illustrated here is based on the model SE6 as an example; all other models follow the same process.

1. First, find out the model name and version number of this motherboard. You can find a sticker with model name and version number on one slot or at the back of the motherboard.



2. Find out the current BIOS ID.



For example, in this case, the current BIOS ID is "00". If you already have the latest BIOS, no any update action is necessary. If your BIOS is not the latest BIOS, go on to the next step.

3. Download the correct BIOS file from our Web site.

[SE6]

Filename:

[SE6SW.EXE](#)

Date: 07/06/2000

ID: SW

NOTE:

1. Fixes SCSI HDD detection problem when booting from SCSI CD-ROM and executing FDISK.
2. Supports 512MB memory modules.
3. Sets the In-Order Queue Depth default to 4, increasing the integrated video performance.

Go to our Web site and choose the correct BIOS file and download it.

4. Double click the download file, it will self-extract to .bin file.

```
LHA's SFx 2.13S <c> Yoshi, 1991
SE6_SW.BIN .....
```

5. Make a bootable floppy disk and copy the necessary files onto it.

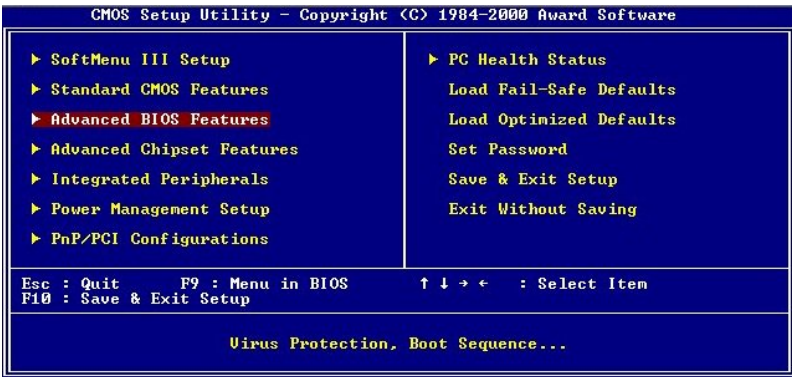


You may make a floppy disk bootable either in Explorer or in the DOS prompt mode.

```
[c:\>]format a: /s
```

After formatting and transferring the system to the floppy disk, copy two files into it. One is the BIOS flash utility "**awdfflash.exe**" and the other is the decompressed BIOS binary file.

6. Boot off floppy disk.



Please set the first boot sequence as “floppy” in BIOS and boot off the floppy disk.

7. Flash the BIOS in pure DOS mode.

```
A:\>awdf flash se6_sw.bin /cc /cd /cp /py /sn /cks /r_
```

After successfully booting off of the floppy, execute the flash utility according to these instructions.

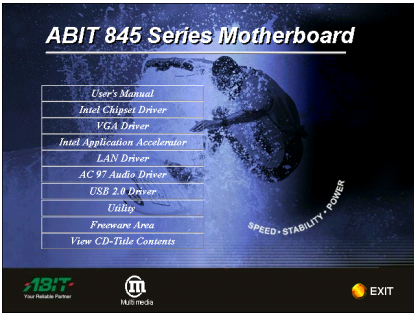
Note

- We strongly recommend you use the above parameters following 'awdf flash' to flash your BIOS.
DO NOT just type "awdf flash se6_sw.bin" without the above parameters following the ".bin" file.
- The Award flash utility cannot be completed under the Windows® environment. It must be done in a pure DOS environment.
- You should check which BIOS file is to be used with your motherboard, don't flash with the wrong BIOS file. Otherwise, it may cause system malfunctions.
- Please do not use the Award flash memory writer version earlier than Version 7.52C to flash the BIOS. Otherwise, it may cause flash fail or un-anticipated problems.
- During the updating, the progress will be measured by white blocks. The last four *blue* blocks of the flash update process represent the "BIOS boot block". The BIOS boot block is used to prevent the BIOS from becoming corrupt during programming. It should not be programmed every time. If this "BIOS boot block" remains intact when the BIOS becomes corrupt during programming, then you can boot from a bootable floppy next time you boot your computer. This allows you to flash your BIOS again without the need for technical support from the dealer.

Appendix H. The Winbond Hardware Doctor Utility

The Winbond Hardware Doctor is a self-diagnostic system for PCs used with Winbond W83627HF chipset. It protects PC hardware by monitoring several critical items including power supply voltages, CPU & system fan speeds and CPU and system temperatures. These items are important for the system operation. Errors may result in permanent damage to the PC. Once any item is out of its normal range, a warning message pops up reminding you to take proper measures.

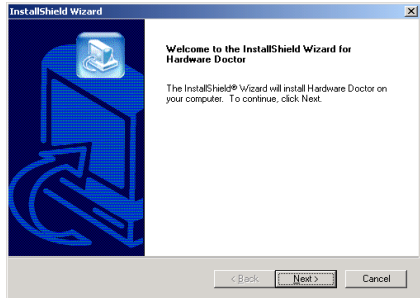
Insert the Installation Disk into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this Installation Disk to enter the installation menu.



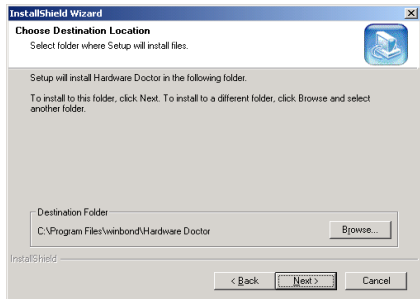
1. Click “Utility”.



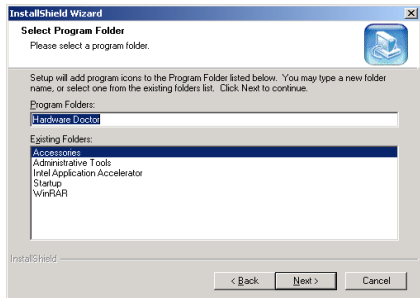
2. Click “Winbond Hardware Doctor”.



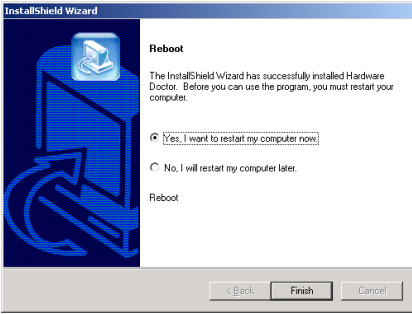
3. Click “Next >”.



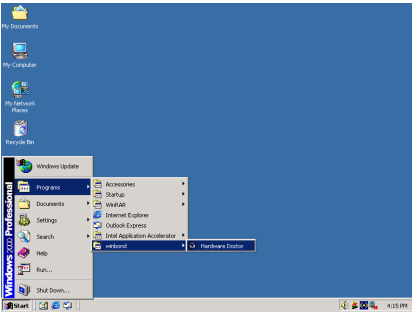
4. Click “Next >”.



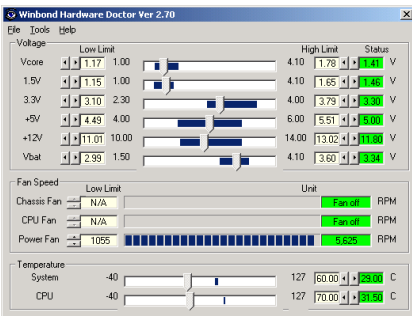
5. Click “Next >”.



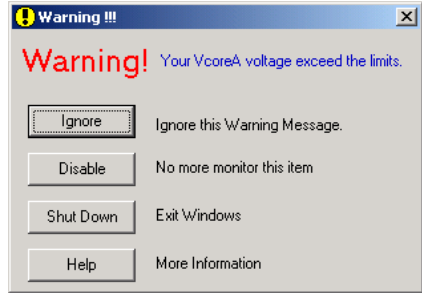
6. Choose “Yes, I want to restart my computer now”, and then click “Finish” to end the installation.



7. Execute the Hardware Doctor by entering the Windows Menu “Start” → “Programs” → “Winbond” → “Hardware Doctor”.



8. This screen appears. Hardware Doctor shows you the status of Voltage, Fan Speed, and Temperature readings as well. If any reading is critical or over its limitation, the reading turns red. Also, a pop-up window appears warning you the system has a problem!



9. This is the warning message window:

Ignore: You can ignore the warning message of the item, but it will pop up again when an error of the same item reoccurs.

Disable: The chosen item will be no longer monitored thereafter, unless you activate it in the “Configuration” page.

Shutdown: Choosing this button will shutdown the computer.

Help: You can read more information and self-diagnose simple problems.

If the warning message pops up due to the wrong warning limit, you can adjust it in the “Configuration” option. For example, if you set the temperature high limit to 40°C, you will easily exceed the “proper” temperature.

Pay attention to two things when you want to make any change to the “Configuration” option. Firstly, you have to make sure your new setting is in the proper range. Secondly, after you finished the configuration, you have to save it. Otherwise, the program will start with the default value next time.

If you encounter any problem or have any question about the software settings and adjustments, please use the Winbond hardware doctor on-line help. It should give you enough information to answer your questions.

Appendix I. Installation Guide for Suspend to RAM

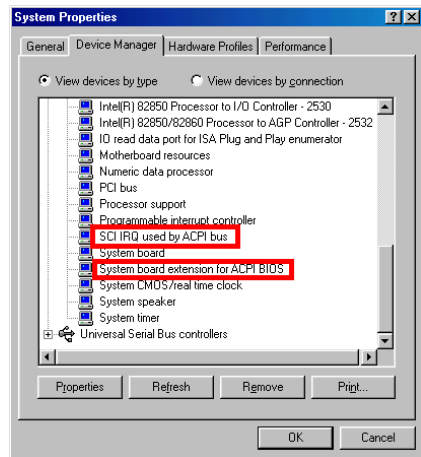
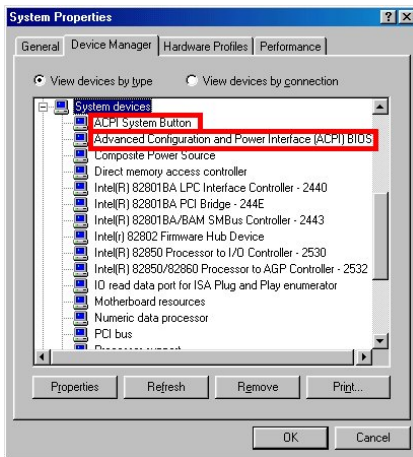
Suspend To RAM (STR) is a cost-effective, optimal implementation of the ACPI 1.0 specification. The ACPI specification defines the S3 sleep state, in which all system context is lost except system memory. CPU, cache, and chip set context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

The STR function enables a PC to achieve the S3 state during idle periods, then quick “wake up” and retrieve the last “state” of the system before it went to sleep. When idle, STR-enabled systems consume only a small fraction of the power used for full operation. Instead of shutting down the system to save power when not in use and then having to reboot later, users can let the STR function take over and not have to worry about using power to run all the electronics, fans and disks. When needed, a PC with STR function can restore all applications and features to an operational state within a few seconds.

The following description will tell you how to install the STR function and use it.

NOTE: To get Windows® 98 to enable the ACPI BIOS function, you have to type the parameter after the setup command, for example, setup /p j. This command will let Windows® 98 automatically install the necessary elements for the ACPI BIOS. If you have already installed Windows® 98 without using this command, you have to re-install Windows® 98 and use the /p j command. Otherwise, your Windows® 98 ACPI function may not work.

As above note mentioned, you have to use the parameter come with the setup command to install your Windows® 98. After you complete Windows® 98 installation and reboot your computer, you can see these items show up in the *System Properties* → *Device Manager*:



- ♦ ACPI System Button
- ♦ Advance Configuration and Power Interface (ACPI) BIOS
- ♦ SCI IRQ use by ACPI bus
- ♦ System board extension for ACPI BIOS

After these items show up, you can go to the next step for the STR function setting.

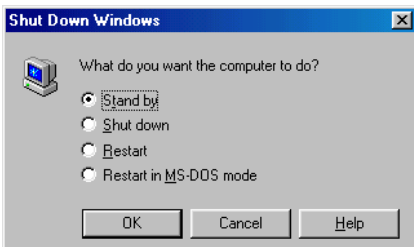
How to use the STR function:

There are two ways to put your system into STR mode:

Method 1: Select “Stand by” in the “Shut Down Windows” area.

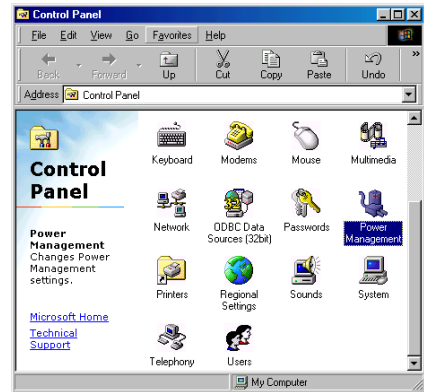


1. Click “Start” in the Windows Tools Bar, and then select “Shut Down...”

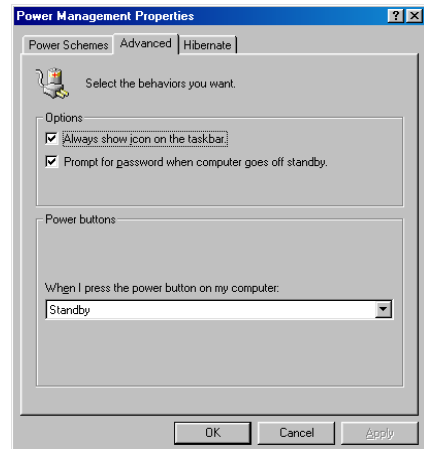


2. Select “Stand by”, and then click “OK”.

Method 2: Define the case “Power” button to initiate STR sleep Mode



1. Open “Control Panel”, and then enter “Power Management”.



2. Select “Advanced”, and then set the “Power Buttons” to “Standby”.

Restart your computer to put these settings into effect. Now you will only need to press the “Power” button on the front panel of the chassis when you want to put your computer into STR sleep mode.

Appendix J. Troubleshooting (Need Assistance?)

Motherboard Troubleshooting:

Q & A:

Q: Do I need to clear the CMOS before I use a new motherboard to assemble my new computer system?

A: Yes, we highly recommend that you clear the CMOS before installing a new motherboard. Please move the CMOS jumper from its default 1-2 position to 2-3 for a few seconds, and then back. When you boot up your system for the first time, follow the instructions in the user's manual to load the optimized defaults.

Q: If my systems hang when I update the BIOS or set the wrong CPU parameters, what should I do?

A: Whenever you update the BIOS or if the system hangs due to wrong CPU parameters setting, always clear CMOS jumper before booting up again.

Q: How can I get a quick response to my request for technical support?

A: Be sure to follow the guidelines as stated in the "Technical Support Form" section of this manual.

If you have a problem during operation, in order to help our technical support personnel quickly determine the problem with your motherboard and give you the answers you need, before filling in the technical support form, eliminate any peripheral that is not related to the problem, and indicate it on the form. Fax this form to your dealer or to the company where you bought the hardware in order to benefit from our technical support. (You can refer to the examples given below)

Example 1: With a system including: motherboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, MPEG CARD, SCSI CARD, SOUND CARD, etc. After the system is assembled, if you cannot boot up, check the key components of the system using the procedure described below. First remove all interface cards except the VGA card and try to reboot.

If you still cannot boot up:

Try installing another brand/model VGA card and see if the system will start. If it still does not start, note the VGA card model, motherboard model, Bios identification number, CPU on the technical support form (refer to main instructions), and describe the problem in the problem description space provided.

If you can boot up:

Insert the interface cards you have removed back into the system, one by one

and try to start the system each time you insert a card, until the system will not start. Keep the VGA card and the interface card that caused the problem inserted on the motherboard, remove any other cards or peripheral, and start again. If you still cannot start, note the information related to both cards in the add-on Card space provided, and don't forget to indicate the motherboard model, version, BIOS identification number, CPU (refer to main instructions), and give a description of the problem.

Example 2: With a system including the motherboard (with CPU, DRAM, COAST...) HDD, CD-ROM, FDD, VGA CARD, LAN CARD, MPEG CARD, SCSI CARD, SOUND CARD, after assembly and after having installed the Sound Card Driver, when you restart the system, when it runs the Sound Card Driver, it resets automatically. This problem may be due to the Sound Card Driver. During the Starting DOS... procedure, press SHIFT (BY-PASS) key, to skip CONFIG.SYS and AUTOEXEC.BAT; edit CONFIG.SYS with a text editor, and in function the line that loads the Sound Card Driver, add a remark REM, in order to disable the Sound Card Driver. See the example below.

```
CONFIG.SYS:
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE HIGHSCAN
DOS=HIGH, UMB
FILES=40
BUFFERS=36
REM DEVICEHIGH=C:\PLUGPLAY\DWCFGMG.SYS
LASTDRIVE=Z
```

Restart the system. If the system starts and does not reset, you can be sure that the problem is due to the Sound Card Driver. Write down the Sound Card model, motherboard model, BIOS identification number on the technical support file (refer to main instructions), and describe the problem in the space provided.

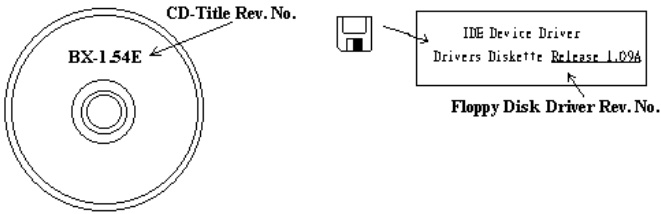
We will show you how to fill the “**Technical Support Form**”.

Main instructions:

To fill in this “**Technical Support Form**”, refer to the step-by-step instructions given below:

- 1*. **MODEL:** Note the model number given in your user's manual.
Example: BG7mL, BD7L-RAID, etc...
- 2*. **Motherboard model number (REV):** Note the motherboard model number labeled on the motherboard as “REV:*.**”.
Example: REV: 1.01
- 3*. **BIOS ID and Part Number:** See the on screen message.

4. **DRIVER REV:** Note the driver version number indicated on the DEVICE DRIVER disk (if any) as “Release *.*”. For example:



- 5*. **OS/APPLICATION:** Indicate the operating system and applications you are running on the system.

Example: MS-DOS® 6.22, Windows® 98 SE, Windows® 2000, etc....

- 6*. **CPU:** Indicate the brand and the speed (MHz) of your CPU.

Example:(A) In the “Brand” space, write “Intel”, in the “Specifications” space, write “Pentium® 4 1.9GHz” ◦

7. **HDD:** Indicate the brand and specifications of your HDD(s), specify if the HDD is using IDE1 or IDE2. If you know the disk capacity, indicate it and check (“✓”) “”; in case you give no indication, we will consider that your HDD is “IDE1” Master.

Example: In the “HDD” space, check the box, in the Brand space, write “Seagate”, in the Specifications space, write “ST31621A (1.6GB)”.

8. **CD-ROM Drive:** Indicate the brand and specifications of your CD-ROM drive. Specify if it uses IDE1 or IDE2 , and check (“✓”) “”; in case you give no indication, we will consider that your CD-ROM is “IDE2” Master.

Example: In the “CD-ROM drive” space, check the box, in the Brand space, write “Mitsumi”, in the Specifications space, write “FX-400D”.

9. **System Memory (DDR SDRAM):** Indicate the brand and specifications (DDR DIMM) of your system memory. Such as Density, Description, Module Components, Module Part Number, CAS Latency, and Speed (MHz).

For example: In the Brand space, write “**Micron**”, in the Specifications space, write: **Density:** 128MB, **Description:** SS 16 Megx72 2.5V ECC Gold, **Module Components:** (9) 16 Megx 8, **Module Part Number:** MT9VDDT1672AG, **CAS Latency:** 2, **Speed (MHz):** 200 MHz.

Please give us the detailed information of your DDR SDRAM module; it will help us to simulate the problems you met.

10. **ADD-ON CARD:** Indicate which add-on cards you are *absolutely sure* are related to the problem.


If you cannot identify the problem’s origin, indicate all the add-on cards inserted into your system.

NOTE: Items between the “*” are absolutely necessary.

 **Technical Support Form**

 **Company Name:**

 **Phone Number:**

 **Contact Person:**

 **Fax Number:**

 **E-mail Address:**

Model	*	BIOS ID #	*
Motherboard Model No.		DRIVER REV	
OS/Application	*		
Hardware Name	Brand	Specifications	
CPU	*		
HDD	<input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2		
CD-ROM-Drive	<input type="checkbox"/> IDE1 <input type="checkbox"/> IDE2		
System Memory			
ADD-ON CARD			

Problem Description:



Appendix K. How to Get Technical Support

(From our website) <http://www.abit.com.tw>

(In North America) <http://www.abit-usa.com>

(In Europe) <http://www.abit.nl>

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators; we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry. Therefore it is quite possible that if you send an email to us that you may not receive a response.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraint we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the **greatest number of ABIT customers:**

- 1. Check the Manual.** It sounds simple but we have taken a lot of care in making a well-written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one, go to our Program Download Area of the Website or FTP server.
- 2. Download latest BIOS, software or drivers.** Please go to our Program Download area on our Website to check to see if you have the latest BIOS. They are developed over periods of time to fix bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards makers!**
- 3. Check the ABIT Technical Terms Guide and FAQ on our Website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics check out our HOT FAQ!

4. **Internet Newsgroups.** They are a great source of information and many people there can offer help. ABIT's Internet News group, alt.comp.periphs.mainboard.abit, is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

alt.comp.periphs.mainboard.abit
comp.sys.ibm.pc.hardware.chips
alt.comp.hardware.overclocking
alt.comp.hardware.homebuilt
alt.comp.hardware.pc-homebuilt

5. **Ask your reseller.** Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.
6. **Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and problems and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and don't have the resources to serve every end-user. However, we will try to do our best to help every customer. Please also remember that for many of our technical support team English is a second language, you will have a better chance of getting a helpful answer if your question can be understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

In North America and South America please contact:

ABIT Computer (USA) Corporation

46808 Lakeview Blvd.

Fremont, California 94538, U.S.A.

sales@abit-usa.com

technical@abit-usa.com

Tel: 1-510-623-0500

Fax: 1-510-623-1092

In the UK and Ireland:

ABIT Computer Corporation Ltd.

Unit 3, 24-26 Boulton Road

Stevenage, Herts SG1 4QX, UK

abituksales@compuserve.com

abituktech@compuserve.com

Tel: 44-1438-228888

Fax: 44-1438-226333

In Germany and Benelux (Belgium, Netherlands, Luxembourg) countries:

AMOR Computer B.V. (ABIT's European Office)

Van Coehoornstraat 7,

5916 PH Venlo, The Netherlands

sales@abit.nl

technical@abit.nl

Tel: 31-77-3204428

Fax: 31-77-3204420

All other territories not covered above please contact:

Taiwan Head Office

When contacting our headquarters please note we are located in Taiwan and we are 8+ GMT time. In addition, we have holidays that may be different from those in your country.

ABIT Computer Corporation

No. 323, YangGuang St.,

Neihu, Taipei, 114, Taiwan

sales@abit.com.tw

market@abit.com.tw

technical@abit.com.tw

Tel: 886-2-8751-8888

Fax: 886-2-8751-3381

7. **RMA Service.** If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.
8. **Reporting Compatibility Problems to ABIT.** Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the Internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.
9. The information listed below are some **chipset vendors' WEB site addresses** for your reference:
 - ALi's WEB site: <http://www.ali.com.tw/>
 - HighPoint Technology Inc.'s WEB site: <http://www.highpoint-tech.com/>
 - Intel's WEB site: <http://www.intel.com/>
 - SiS' WEB site: <http://www.sis.com.tw/>
 - VIA's WEB site: <http://www.via.com.tw/>

Thank you, ABIT Computer Corporation

<http://www.abit.com.tw>