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KD7 Series
(KD7-G, KD7-S, KD7-RAID, KD7-B, KD7)

Socket 462 System Board
User's Manual

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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.

Contents

KD7 系列快速安裝指引

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。

處理器的安裝

本主機板提供零出力（Zero Insertion Force, ZIF）式 Socket 462，以方便安裝 AMD Socket A。您所購買的 CPU 應已配備一組散熱套件及散熱片，如果沒有，請另行購買專為 Socket A 設計的散熱套件及散熱片。

請參考這裡所表示的圖來安裝 CPU 中央處理器和散熱器。（僅供參考。您的散熱器與風扇組合可能不見得與這一個完全相同。）

1. 請找出這塊主機板的 Socket 462 位置。將 CPU 插座桿拉出至插座旁，然後將插座桿以 90 度角向上拉。

2. 將 CPU 的缺角對準 CPU 插座的缺角，CPU 插腳的一端向下置 CPU 插座。因為只能朝著一個固定的方向插入 CPU，如果遇到阻礙時，切勿勉強用力。最後壓住 CPU，拴上插座桿。

3. 請將散熱器底面的自黏膠模移除，散熱器底部凹角一端面向 CPU 插座標示 "Socket 462" 的一方，散熱器面向下蓋住 CPU，直到完全蓋住 CPU 為止。

4. 先將固定夾具短的一邊壓下扣住 CPU 插座底端的中間鎖扣。

5. 再以螺絲起子插入固定夾具長的一邊的凹槽，壓下扣住 CPU 插座底端的中間鎖扣。現在散熱器與風扇組合已互相緊扣在 CPU 插座上。

6. 將散熱器與風扇組合的風扇電源端子與主機板上面的風扇電源端子連接。

注意：請記得設定正確的處理器外頻和倍頻數值。
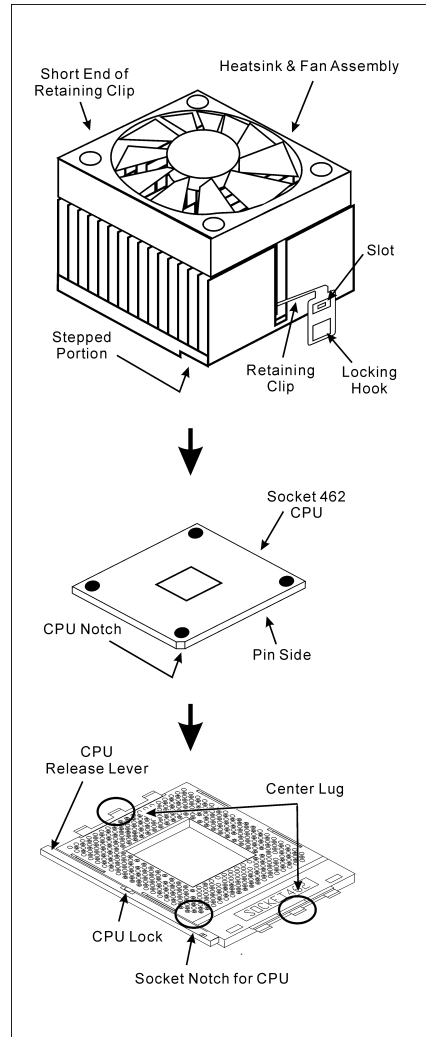
將主機板安裝到機殼上

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 4 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 3.5GB。

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~DIMM4 插槽的順序來安裝記憶體模組。

Mounting Notch   Notch Key

Rib

Ejector Tab

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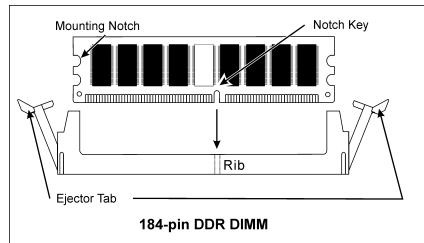
最後,您必需將所有必需的裝置纜線連接到主機板上相關的連接頭或是連接器上面,以完成您系統的硬體安裝動作。

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面,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/ATX2** 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/ATX2 接頭,並確定連接妥當。

BIOS 的設定

當您將所有的硬體安裝完畢以後,就可以開啟電腦的電源並進入 BIOS 的選項。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。

KD7 シリーズのクイックインストールガイド

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

プロセッサの取り付け

このマザーボードは ZIF（ゼロインサーションフォース）Socket 462 を提供して AMD Socket A CPU をインストールします。お買い上げになった CPU には、ヒートシンクと冷却ファンのキットが付属しています。付属していない場合、Socket A 向けに特別に設計されたキットをお求めください。

ここに示した図を参照して、CPU とヒートシンクを取り付けます（この図は参照専用です。お使いのヒートシンクとファンアセンブリはこの図と異なっていることがあります）。

1. このマザーボードの Socket 462 を探します。CPU のリリースレバーを横に引っ張って掛け金を外し、上まで引き上げます。
2. CPU のノッチを CPU のソケットのノッチに合わせます。そのピンの横側を下にして CPU のソケットに差し込みます。CPU に差し込むときに無理な力を入れないでください。ピンは一方向にだけフィットするようになっています。CPU のリリースレバーを閉じます。
3. ヒートシンクのプラスチックフィルム接着剤をはがします。ヒートシンクの段のある部分が"Socket 462"の文字のある側を向いていることを確認してください。ヒートシンクの面を下にして、プロセッサを完全に覆うまで降ろします。
4. まず支持クリップの短い方の端を押し下げて、ソケット下部のセンターラグに固定します。
5. ネジ回しを使用して、支持クリップの長い方の端のスロットに差し込みます。クリップを押し下げて、ソケット上部のセンターラグに固定します。これで、ヒートシンクとファンアセンブリが CPU のソケットにしっかり取り付けられました。
6. ヒートシンクとファンアセンブリのファンコネクタを、マザーボードのファンコネクタに取り付けます。
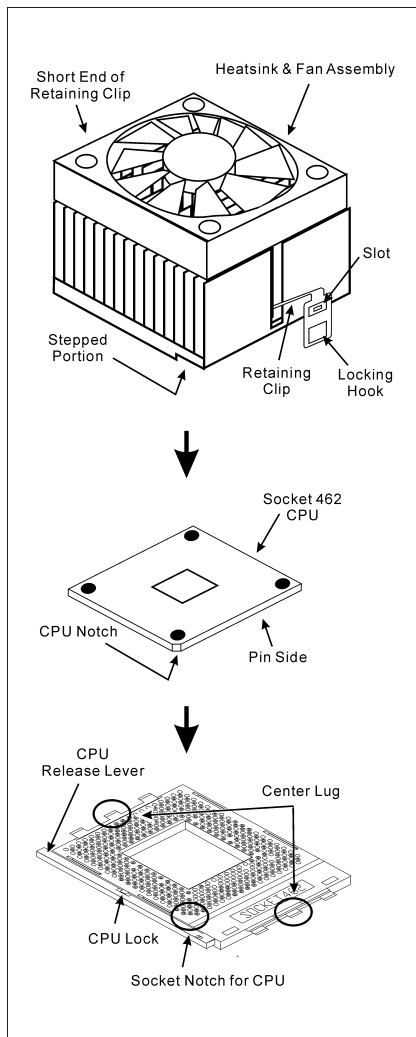
注意：プロセッサに対して、正しいバス周波数とマルチプルに設定することを忘れないでください。

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ペ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、4 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 3.5GB 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。

184-pin DDR DIMM
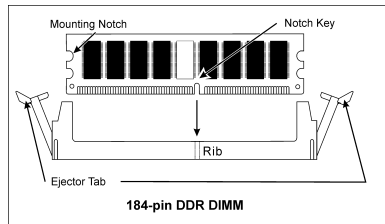
これらのモジュールに対して、DIMM1 から DIMM4 まで順に差し込むようにお勧めします。

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/ATX2 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/ATX2 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。

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、ユーザーズマニュアルの完全版を参照してください。

KD7-Serie Schnellinstallationsanleitung

Beziehen Sie sich bitte für detaillierte Informationen über diese Hauptplatine 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.

Installieren des Prozessors

Dieses Motherboard verfügt über einen ZIF (**Z**ero **I**nsertion **F**orce) Sockel 462 zur Installation eines AMD Socket A CPU. Ihre CPU sollte über ein Kühlblech und einen Lüfter verfügen. Wenn dies nicht der Fall ist, kaufen Sie bitte diese Teile speziell für den Sockel A.

Bitte schauen Sie sich zur Installation von CPU und Kühlblech diese Abbildung an. (Nur zur Referenz - Ihr Kühlblech & Lüftergefüge könnten sich von dieser Abbildung unterscheiden.)

1. Finden Sie Sockel 462 auf diesem Motherboard. Ziehen Sie den CPU-Haltehebel zur Seite, um ihn zu entriegeln und ziehen ihn dann ganz hoch.

2. Richten Sie die CPU-Kerbe mit der Sockelkerbe der CPU aus. Stecken Sie den Prozessor mit den Pins nach unten in den CPU-Sockel. Wenden Sie keine Gewalt beim Einsetzend der CPU an; sie paßt nur in eine Richtung hinein. Schließen Sie den CPU-Haltehebel.

3. Entfernen Sie den Plastikfilm vom Kühlblech. Stellen Sie sicher, daß der abgestufte Teil des Kühlblechs in Richtung des Sockelendes zeigt, auf dem "Socket 462" steht. Setzen Sie das Kühlblech mit dem Gesicht nach unten auf den Prozessor, bis es den Prozessor komplett abdeckt.

4. Drücken Sie das kurze Ende des Halteclips zuerst an, um es mit der Mittellasche unten am Sockel zu verriegeln.

5. Setzen Sie es mit einem Schraubenzieher in den Schlitz am langen Ende des Halteclips. Drücken Sie den Clip nach unten, um ihn mit der Mittellasche oben am Sockel zu verriegeln. Nun sind Kühlblech & Lüftergefüge fest mit dem CPU-Sockel verbunden.

6. Verbinden Sie den Lüfteranschluß von Kühlblech & Lüftergefüge mit dem Lüteranschluß am Motherboard.
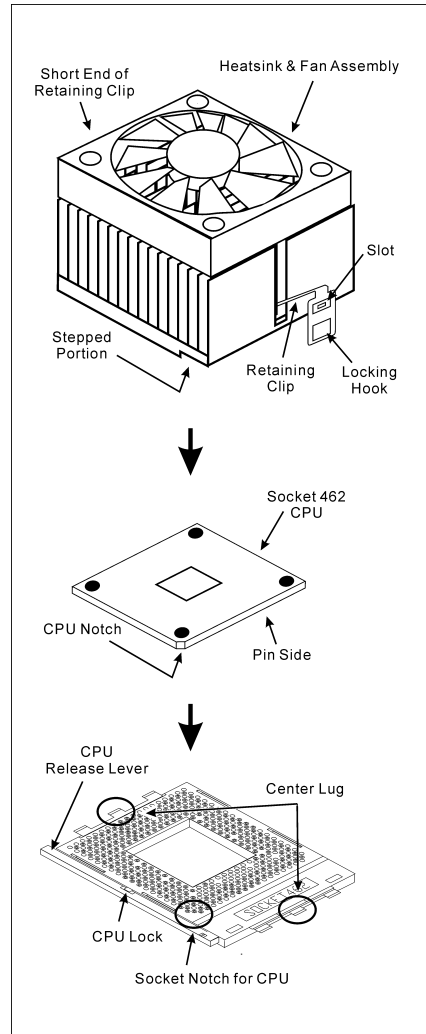
Achtung: Vergessen Sie nicht, die korrekte Busfrequenz und Multiplikator für Ihren Prozessor einzustellen.

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 4 184-polige DDR DIMM-Steckplätze an. Sie können minimal 64 MB und maximal 3.5 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 DIMM4 (in dieser Reihenfolge).
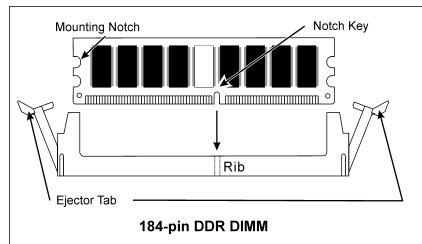
Danach müssen Sie alle nötigen Gerätekabel mit den entsprechenden Sockeln und Anschlüssen auf der Hauptplatine verbinden, um die Hardwareinstallation Ihres Systems zu vervollständigen.

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 ATX1/ATX2-Anschluss

Denken Sie daran, den Anschluss des ATX-Netzteils fest in das Ende mit dem ATX1/ATX2-Anschluss zu drücken, um eine feste Verbindung zu garantieren.

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.

Série KD7 Guide d'Installation Rapide

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.

Installer le Processeur

Cette carte mère fournit un support ZIF (**Z**ero **I**nsertion **F**orce) Socket 462 permettant d'installer le Microprocesseur AMD Socket A. Le microprocesseur que vous achetez doit être muni d'un système de refroidissement avec dissipateur thermique et ventilateur. Dans le cas contraire, veuillez en acheter un, conçu spécialement pour les microprocesseurs Socket A.

Veuillez vous référer à la figure illustrée ci-contre pour installer le processeur et le dissipateur thermique. (Démonstration donnée à titre indicatif uniquement. L'assemblage de votre dissipateur thermique et de votre ventilateur peut ne pas être tout à fait identique à celui-ci.)

1. Repérez le support Socket 462 situé sur cette carte mère. Tirez le levier de maintien du processeur vers l'extérieur pour le libérer puis soulevez-le complètement vers le haut.

2. Alignez l'encoche du processeur avec celle du support pour processeur. Installez le processeur avec sa broche faisant face au support pour processeur. Ne forcez pas en insérant le processeur; il ne peut s'insérer que dans une seule direction. Rabattez le levier de maintien du processeur.

3. Retirez le film adhésif du dissipateur thermique. Assurez-vous que la partie surélevée du dissipateur thermique fait face à l'extrémité du support marquée "Socket 462". Installez le dissipateur thermique pour qu'il fasse face au processeur et jusqu'à ce qu'il couvre complètement le processeur.

4. Tout d'abord, poussez vers le bas l'extrémité courte de la bride de fixation pour verrouiller sur le crochet central situé en bas du support.

5. Utilisez un tournevis pour insérer dans la fente la longue extrémité de la bride de fixation. Poussez la bride de fixation vers l'avant pour verrouiller sur le crochet central situé en haut du support. L'assemblage du dissipateur Thermique et du ventilateur est maintenant solidement fixé sur le support du CPU.

6. Fixez le connecteur du ventilateur du dissipateur thermique & du ventilateur sur le connecteur correspondant de la carte mère.
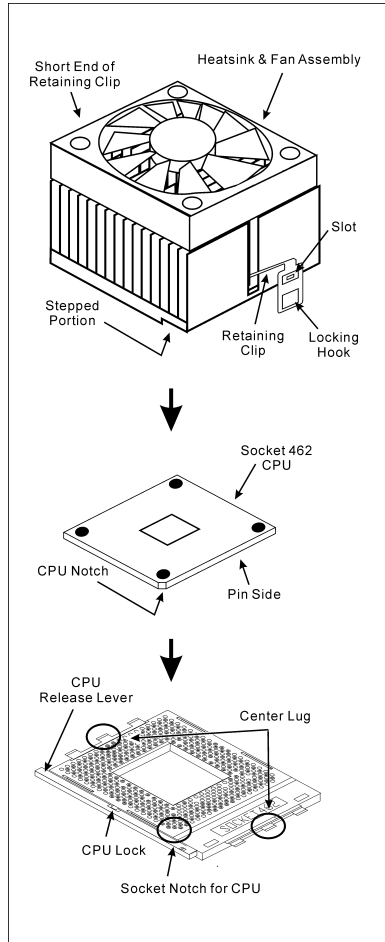
Attention: N'oubliez pas de régler une fréquence de   Bus et un coefficient multiplicateur corrects pour votre processeur.

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 4 emplacements DIMM DDR 184-broches pour les extensions mémoire. La mémoire minimum est de 64 MB et la mémoire maximum est de 3.5 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 a 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 DIMM4 en respectant l'ordre.

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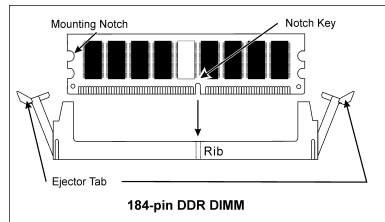
Ensuite, vous aurez à connecter les câbles de tous les périphériques nécessaires dans les socles de connexion et connecteurs correspondants se trouvant sur la carte mère pour terminer l'installation matérielle de votre système.

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/ATX2

Souvenez-vous que vous devez pousser le connecteur de votre alimentation fermement dans le connecteur ATX1/ATX2 pour assurer une bonne connexion.

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.

Краткое руководство по установке KD7 серия

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.

Установка процессора

На этой системной плате используется гнездо ZIP (с нулевым усилием установки) типа 'Socket 462' для процессора AMD Socket A. В комплект приобретаемого процессора должны входить радиатор и вентилятор. В противном случае следует приобрести радиатор и вентилятор, предназначенные для процессора AMD с разъемом 'Socket A'.

Для установки процессора и радиатора, посмотрите пожалуйста на рисунок, показанный на этой странице. (Только для справочной работы. Ваш радиатор и комплект вентилятора может быть не точно такой же как показанный рисунок здесь.)

1. Найтите на этой плате гнездо "Socket 462". Вытяните рычаг гнезда процессора в сторону от гнезда, затем поднимите его.

2. Расположите зарубку процессора и зарубку гнезда для процессора по одной линии. Положите процессор со стороной контактов в гнездо процессора. Устанавливая процессор, не прикладывайте чрезмерных усилий. Его установка возможна только в одном положении. Опустите рычаг гнезда процессора.

3. Уберите ту пластическую оболочку, находящуюсь на радиаторе. Ступенчатная часть радиатора должна находиться лицом к стороне гнезда, где показано слово "Socket 462". Поместите радиатор плоской стороной на процессор так, чтобы процессор был полностью закрыт.

4. Сначала, прижмите вниз короткую сторону фиксирующего зажима до его фиксации в центральной проушине на нижней части гнезда.

5. Вставьте отвёрку в паз, находящийся на длинной стороне фиксирующего зажима. Прижмите зажим вниз до его фиксации в центральной проушине на верхней части гнезда. Радиатор и комплект вентилятора
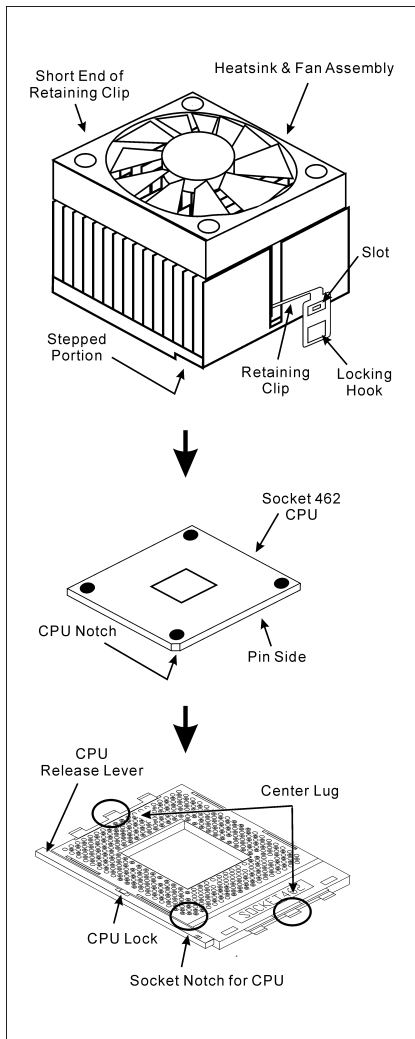
должны быть надежно скреплены к гнезду процессора.

6. Подключите разъём раздиатора и комплекта вентилятора к разъёму вентилятора на материнской плате.

Внимание: Не забудьте установить для процессора надлежащую частоту шины и множитель.

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 4 184-контактных гнезда расширения DDR DIMM для памяти. Минимальный объем памяти равен 64 Мбайт, максимальный объем равен 3.5 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 DIMM4.

Mounting Notch   Notch Key

Rib

Ejector Tab

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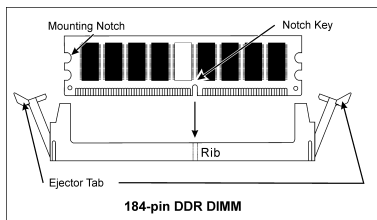
Подключите все необходимые кабели для подключения устройств к соответствующим разъемам на материнской плате, чтобы завершить установку аппаратуры вашей системы.

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/ATX2

Обратите внимание, разъем блока питания ATX необходимо вставить в разъем ATX1/ATX2 до упора, чтобы обеспечить надежное соединение.

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.

# Guida all'installazione veloce Scheda madre serie KD7

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.

Installazione del processore

Questa scheda madre fornisce una presa "Socket 462" ZIF (**Z**ero **I**nsertion **F**orce – forza d'inserimento zero) per installare il processore AMD Socket A. Il processore acquistato dovrebbe essere fornito di dispersore di calore e ventolina per il raffreddamento. In caso contrario acquistare un dispersore di calore specifico per la presa Socket A.

Per il montaggio della CPU e del termodispersore, consultare la figura accanto. Si noti che il gruppo termodispersore-ventola illustrati possono non essere identici a quelli effettivamente da montare.

1. Individuare il socket 462 sulla scheda madre. Tirare lateralmente la leva di sblocco della CPU e sollevare la CPU completamente.

2. Allineare la tacca della CPU con quella del socket CPU. Appoggiare il processore con il lato di connessione verso il basso nel socket, senza forzare. La CPU può essere montata in una sola direzione. Chiudere la leva di sblocco della CPU.

3. Staccare la pellicola adesiva dal termodispersore. the plastic film adhesive on the heatsink. Accertarsi che la superficie del termodispersore provvista di gradino sia rivolta verso l'estremità del socket indicato come "Socket 462". Applicare il termodispersore con il lato inferiore verso il basso sul processore fino a coprirlo completamente.

4. Tirare verso il basso il lato corto del clip di ritegno fino ad impegno con la linguetta centrale sul lato inferiore del socket.

5. Con l'aiuto di un cacciavite, inserire la linguetta nella fessura sul lato lungo del clip di ritegno. Spingere il clip verso il basso fino ad impegno con la linguetta centrale della parte superiore del socket. A questo punto, il gruppo termodispersore-ventola è saldamente fissato al socket CPU.

6. Fissare il connettore ventola del gruppo termodispersore-ventola al connettore ventola della scheda madre .
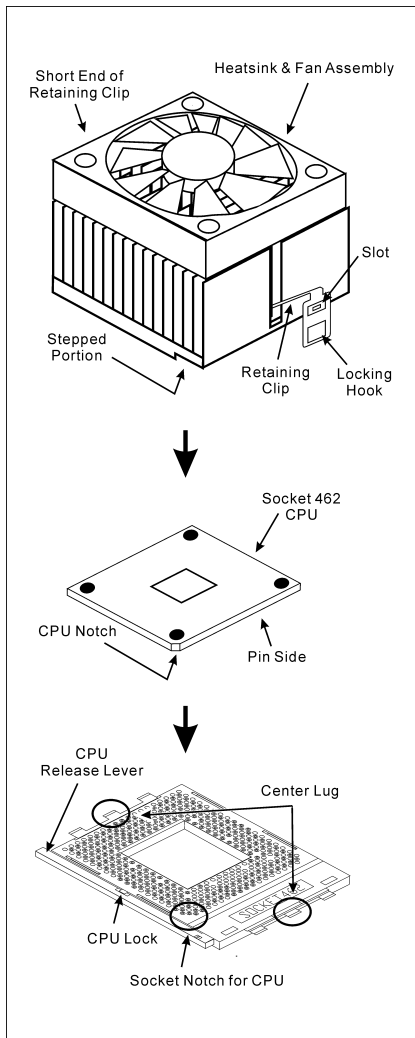
**Attenzione:** Non dimenticare di impostare la corretta frequenza BUS e multiplier per il processore.

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 4 slot d'espansione di memoria DDR DIMM da 184 pin. La memoria minima è di 64 MB, quella massima è di 3.5 GB DDR SDRAM.

Inserire il modulo DDR DIMM nello slot d'espansione come mostrato dell'illustrazione- Notare come il modulo è imperniato 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 DIMM4.

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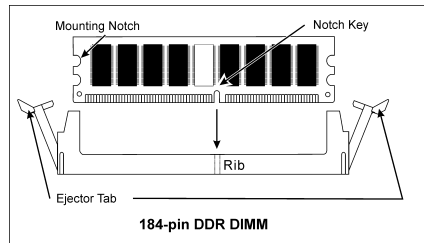
Per completare l'installazione dell'hardware del sistema, bisogna collegare tutti i cavi delle attrezzature necessarie ai relativi collettori e connettori sulla scheda madre.

Connettori, collettori, interruttori ed adattatori

All'interno della copertura di ogni computer ci sono diversi cavi e prese che devo 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/ATX2

Ricordarsi che è necessario spingere con fermezza fino in fondo il connettore della sorgente d'alimentazione ATX al connettore ATX1/ATX2, assicurando così un buon collegamento.

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 1. Introduction

1-1. Features & Specifications

1. CPU
- Supports AMD-K7 Athlon / Athlon XP Socket A 200/266/333MHz FSB Processors
- Supports AMD-K7 Duron Socket A 200MHz FSB Processors

2. Chipset (VIA KT400 and VT8235)
- Supports Ultra ATA 33/66/100/133 IDE protocol
- Supports **A**dvanced **C**onfiguration and **P**ower Management **I**nterface (ACPI)
- Accelerated Graphics Port connector supports AGP 4X/8X(1.5V/0.8V) mode (Sideband) device. (AGP 3.0 Compliant)
- Supports 200/266/333/400MHz (100/133/166/200MHz Double Data Rate) memory bus settings
- Supports Hi-Speed Universal Serial Bus (USB 2.0)

3. Memory (System Memory)
- Four 184-pin DIMM sockets
- Supports 2 DIMM DDR 333/400 (Max. 2GB)
- Supports 3 DIMM Unbuffered DDR 200/266 (Max. 3GB)
- Supports 4 DIMM Registered DDR 200/266 (Max. 3.5GB)

4. LAN
- Onboard Broadcom Gigabit PCI Ethernet Controller (For KD7-G)
- Onboard 10/100M PCI Fast Ethernet Controller (For KD7-S, KD7-RAID, KD7-B, KD7)

5. Serial ATA 150 (For KD7-G & KD7-S)
- Onboard Silicon Image SIL3112A Controller
- Support 2 ports SATA 150 (1.5G bps)
- Supports Serial ATA data transfer rates of 150 MB/sec
- Supports RAID 0 (Stripping mode for boosting performance) mode
- Supports RAID 1 (Mirroring mode for data security) mode

6. ATA133 RAID (For KD7-RAID)
- HighPoint HPT372 IDE controller
- Supports Ultra ATA 133MB/sec data transfer rate
- Supports RAID 0 (Stripping mode for boosting performance) mode
- Supports RAID 1 (Mirroring mode for data security) mode
- Supports RAID 0+1 (Stripping and Mirroring) mode

7. Audio
- Onboard RealTek ALC650 6-Channel AC 97 CODEC
- Professional digital audio interface supports 24-bit S/PDIF Out

8. **System BIOS**
    - SoftMenu™ Technology to set CPU parameters
    - Award PnP (**P**lug a**n**d **P**lay) BIOS supports APM and DMI (**D**esktop **M**anagement **I**nterface)
    - Supports ACPI (**A**dvanced **C**onfiguration **P**ower **I**nterface)
    - Write-Protect Anti-Virus function by AWARD BIOS

9. **Internal I/O Connectors**
    - 1x AGP slot
    - 6x PCI slots
    - 1x floppy port supports up to 2.88MB
    - 2x Ultra ATA 33/66/100/133 connectors (KD7-G, KD7-S, KD7-B, KD7)
    - 4x Ultra ATA 33/66/100/133 connectors (KD7-RAID)
    - 2x Serial ATA 150 connectors (KD7-G, KD7-S)
    - 2x USB headers
    - 1x CD-IN, 1x AUX-IN header
    - 1x IrDA header

10. **Back Panel I/O**
    - 1x PS/2 keyboard, 1x PS/2 mouse
    - 2x Serial, 1 x Parallel
    - 1x S/PDIF Output
    - AUDIO1 connector (Mic-In, Line-In, Front-Left/Front-Right)
    - AUDIO2 connector (Rear-Left / Rear-Right, Center/Subwoofer)
    - 2x USB, 1x RJ-45 LAN Connector

11. **Miscellaneous**
    - ATX form factor
    - Hardware Monitoring – Including Fan speed, Voltages, CPU and System temperature

12. **Order Information**

Model	Features
KD7-G	SATA, Gigabit LAN
KD7-S	SATA, 10/100M LAN
KD7-B	10/100M LAN
KD7-RAID	ATA133 RAID, 10/100M LAN
KD7	10/100M LAN

❈   **Supports Wake On LAN, Modem, but your ATX power supply 5V standby power must be able to provide at least a 720mA current capacity. Otherwise, the functions may not work normally.**

❈   **For KD7-RAID: PCI slot 5 shares IRQ signals with the HPT 372 IDE controller (supports Ultra ATA/133). The driver for HPT 372 IDE controller supports IRQ sharing with other PCI devices. But if you install a PCI card that doesn't allow IRQ sharing with other devices into PCI slot 5, you may encounter some problems. Furthermore, if your Operating System doesn't allow peripheral devices to share IRQ signals with each other, such as Windows® NT for example, you can't install a PCI card into PCI slot 5.**

❈   **For KD7-RAID: HPT 372 IDE controller is designed to support high-speed and high performance mass storage devices. Do not connect non-disk devices in ATA/ATAPI interfaces, such as CD-ROM, to HPT 372 IDE connector (IDE3 & IDE4).**

❈   **This motherboard supports the standard bus speeds of 66MHz/100MHz/133MHz/166MHz that are used by specific PCI, processor and chipset specifications. Exceeding these standard bus speeds is not guaranteed due to the specific component specifications.**

❈   **The Serial ATA controller only supports Ultra DMA/ATA100 or higher hard drive. Do not use hard drives under this specification, or it won't work.**

❈   **Specifications and information contained in this manual are subject to change without notice.**

1-2. Layout Diagram (KD7-G)
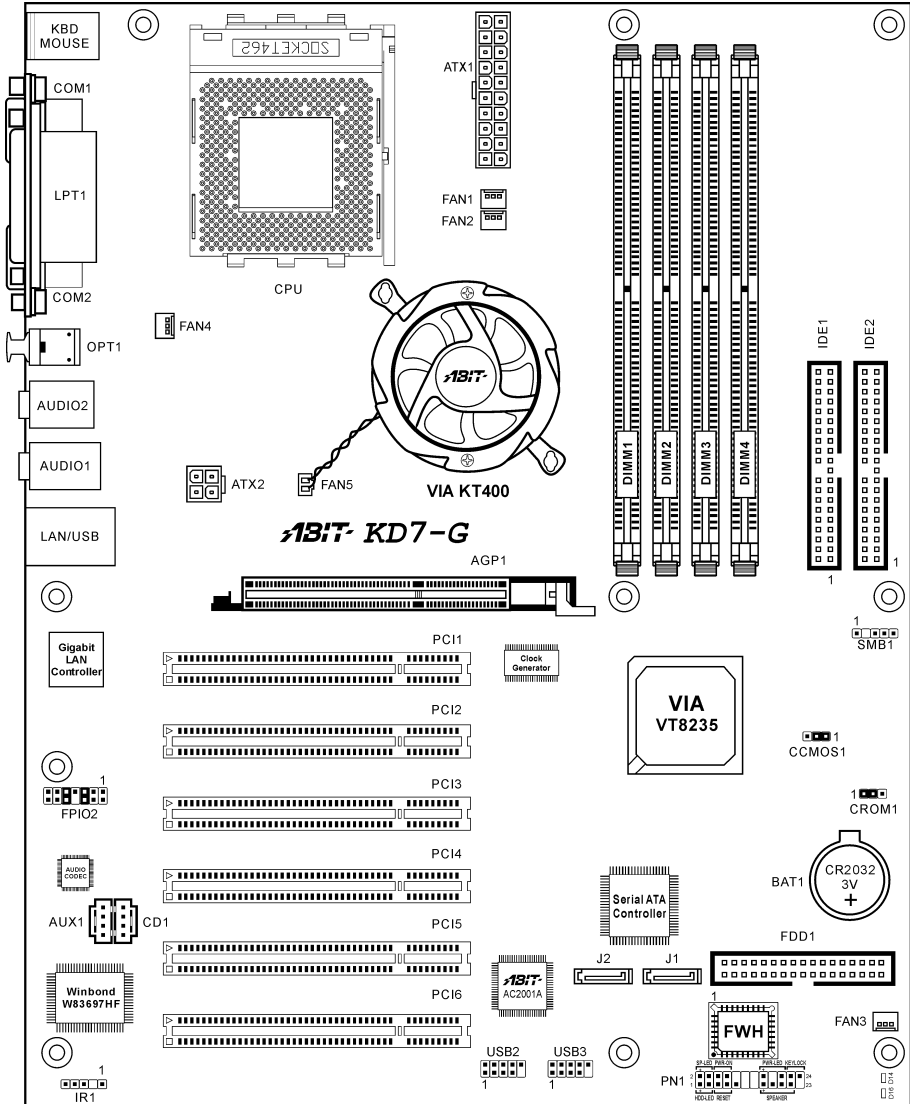
1-3. Layout Diagram (KD7-S)
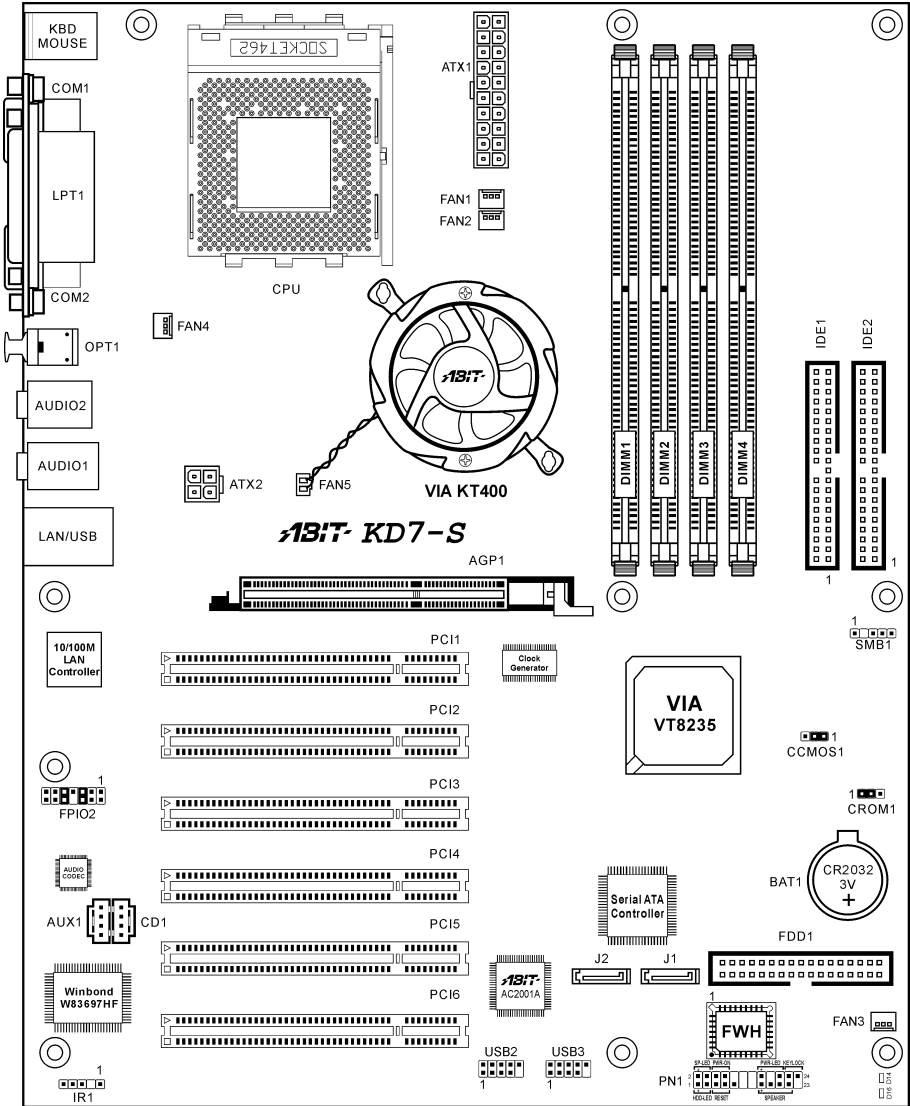
1-4.   Layout Diagram (KD7-RAID)

1-5. Layout Diagram (KD7-B)

1-6. Layout Diagram (KD7)
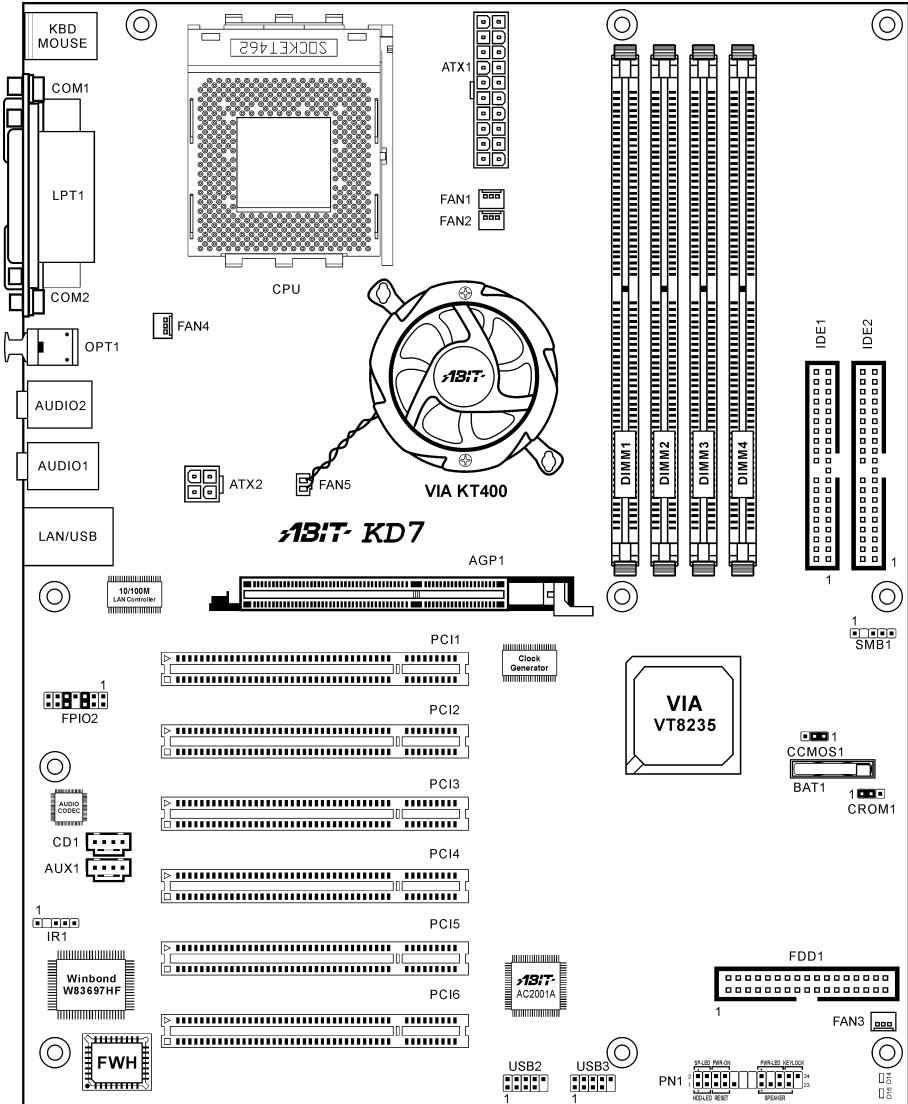
Chapter 2. Hardware Setup

Before the Installation: Turn off the power supply switch (fully turn off the +5V standby power), or disconnect the power cord before installing or unplugging any connectors or add-on cards. Failing to do so may cause the motherboard components or add-on cards to malfunction or damaged.
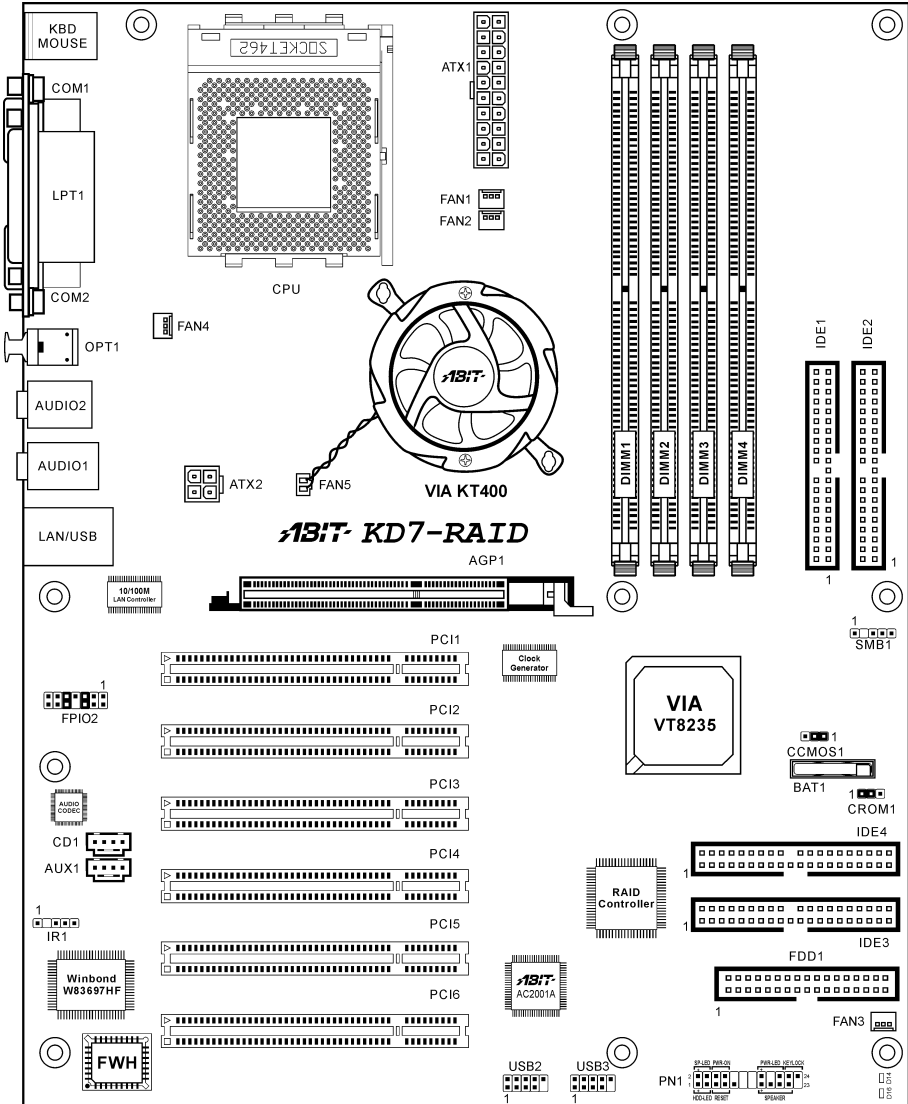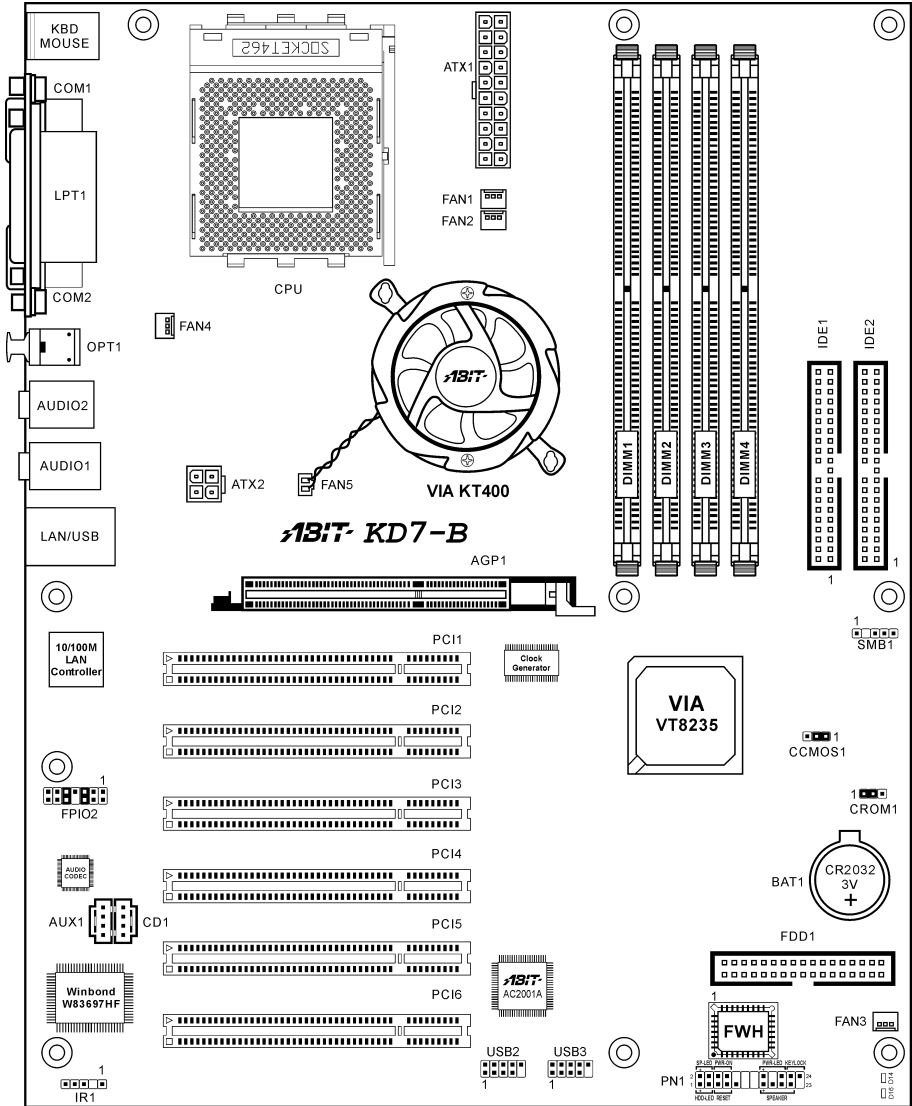
2-1. Install The Motherboard

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:

1. use with studs
2. or use with spacers

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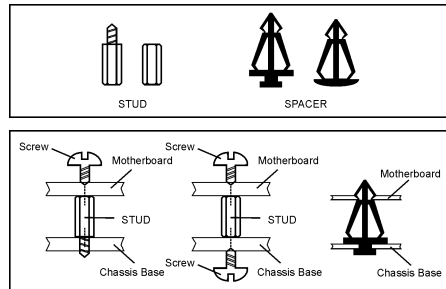
ATTENTION: To prevent shorting the PCB circuit, please REMOVE the metal studs or spacers if they are already fastened on the chassis base and are without mounting-holes on the motherboard to align with.

2-2. Install CPU and Heatsink

Note

- Installing a heatsink and cooling fan is necessary for heat to dissipate from your processor. Failing to install these items may result in overheating and processor damage.

- The AMD Socket A processor will produce a lot of heat while operating, so you need to use a large heat sink that is especially designed for the AMD socket A processor. Otherwise, it may result in overheating and processor damage.

- If your processor fan and its power cable are not installed properly, never plug the ATX power cable into the motherboard. This can prevent possible processor damage.

- Please refer to your processor installation manual or other documentation with your processor for detailed installation instructions.

This motherboard provides a ZIF (**Z**ero **I**nsertion **F**orce) Socket 462 to install AMD Socket A 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 Socket A.

Please refer to the figure shown here to install CPU and heatsink. (For reference only. Your Heatsink & Fan Assembly may not be exactly the same as this one.)

1. Locate the Socket 462 on this motherboard. Pull the CPU release lever sideways to unlatch and then raise it all the way up.

2. Align the CPU notch to the socket notch for CPU. Drop the processor with its pin side down into the CPU socket. Do not use extra force to insert CPU; it only fit in one direction. Close the CPU release lever.

3. Remove the plastic film adhesive on the heatsink. Make sure the stepped portion of the heatsink is facing toward the end of the socket that reads "Socket 462". Put the heatsink faces down onto the processor until it covers the processor completely.

4. Push down the short end of the retaining clip first to lock up with the center lug at the bottom of the socket.

5. Use a screwdriver to insert into the slot at the long end of the retaining clip. Push the clip downward to lock up with the center lug at the top of the socket. The heatsink & fan assembly is now firmly attached on the CPU socket.

6. Attach the fan connector of Heatsink & Fan Assembly with the fan connector on the motherboard.

ATTENTION: Do not forget to set the correct bus frequency and multiple for your processor.
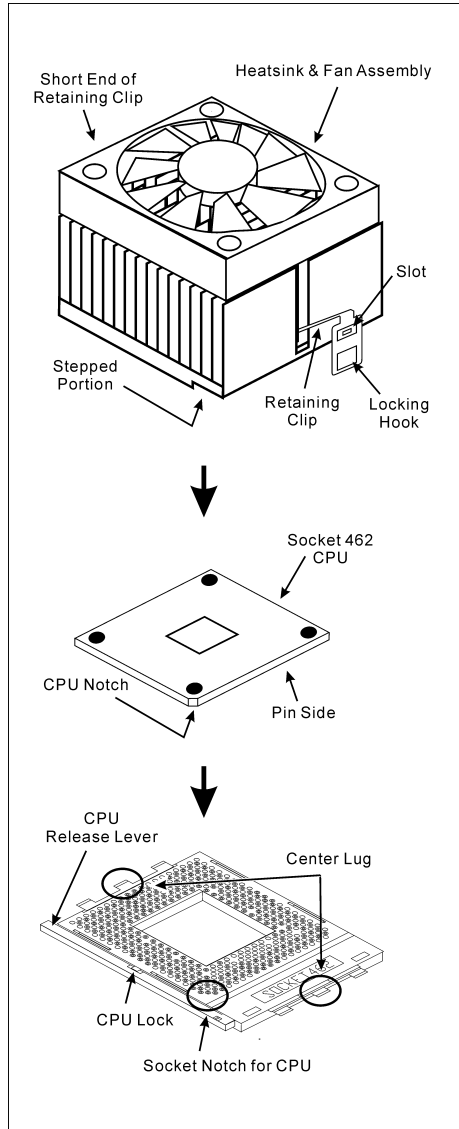
2-3.   Install System Memory

This motherboard provides 4 184-pin DDR DIMM sites for memory expansion available from minimum 64MB to maximum 3.5GB.

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
Bank 4, 5 (DIMM3)	64, 128, 256, 512MB, 1GB	64MB ~ 1GB
Bank 6, 7 (DIMM4)	64, 128, 256, 512MB, 1GB	64MB ~ 1GB
Total System Memory for Unbuffered DDR DIMM (PC1600/PC2100)		64MB ~ 3GB
Total System Memory for Registered DDR DIMM (PC1600/PC2100)		64MB ~ 3.5GB
Total System Memory for Unbuffered DDR DIMM (PC2700/PC3200)		64MB ~ 2GB
Total System Memory for Registered DDR DIMM (PC2700/PC3200)		64MB ~ 3GB

NOTE: It is necessary to install one DIMM module at least from memory slot DIMM1.

Power off the computer and unplug the AC power cord before installing or removing memory modules.

1.   Locate the DIMM slot on the board.

2.   Hold two edges of the DIMM module carefully, keep away of touching its connectors.

3.   Align the notch key on the module with the rib on the slot.

4.   Firmly press the module into the slots until the ejector tabs at both sides of the slot automatically snaps into the mounting notch.
     Do not force the DIMM module in with extra force as the DIMM module only fit in one direction.
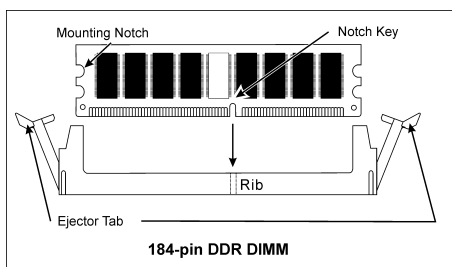
5.   To remove the DIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the DIMM module.

184-pin DDR DIMM

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.

2-4. Connectors, Headers and Switches

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 Chapter 1 for all the position of connectors and headers on the board that you may refer to.

WARNING: Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to 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). ATX1, ATX2: ATX Power Input Connectors

This motherboard provides two power connectors to connect to an ATX12V power supply with 300W, 20A +5VDC, and 720mA +5VSB capacity at least.

NOTE: There is no need to connect the 4-pin ATX2 power, as it is an auxiliary 12VDC power source for better system performance and stability.


```
                              +12VDC ─┤□│□├─ +5VDC
                              +5VSB  ─┤□│□├─ +5VDC
                              PWR_OK ─┤□│□├─ -5VDC
                              COM    ─┤□│□├─ COM
                              +5VDC  ─┤□│□├─ COM
                              COM    ─┤□│□├─ COM
                              +5VDC  ─┤□│□├─ PS_ON#
                              COM    ─┤□│□├─ COM
        COM ─┤□│□├─ +12VDC     +3.3VDC ─┤□│□├─ -12VDC
        COM ─┤□│□├─ +12VDC     +3.3VDC ─┤□│□├─ +3.3VDC

              ATX2                        ATX1
```
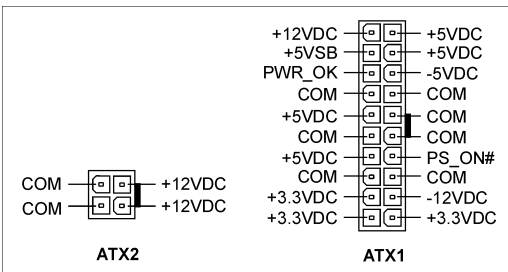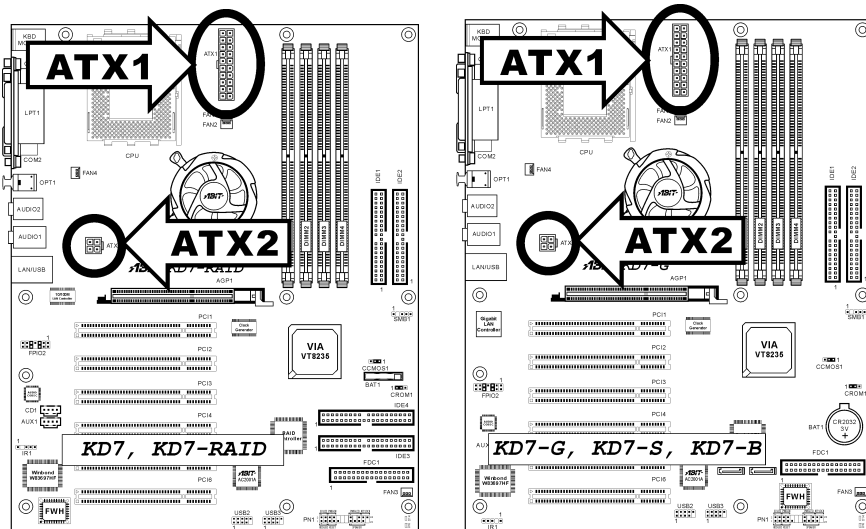
(2). FAN Connectors:

FAN1: CPU Fan

FAN2: Chassis Fan

FAN3, 4: System Fan

FAN5: Chipset Fan
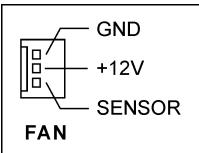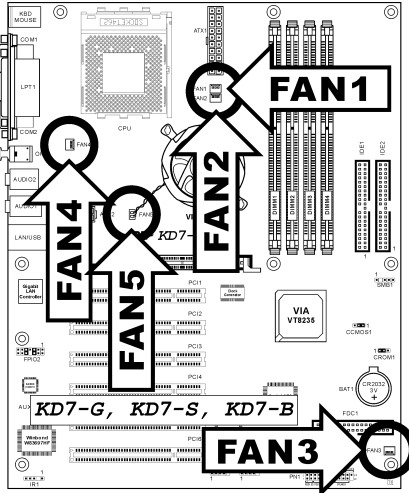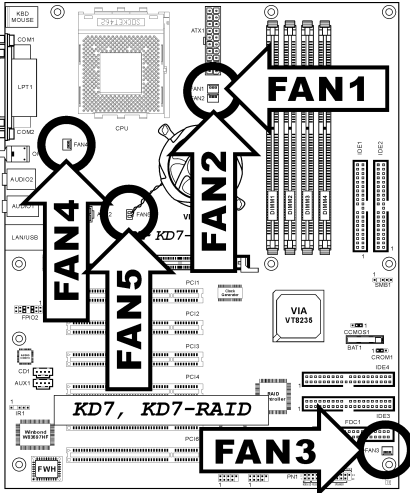
(3). CCMOS1: CMOS Memory Clearing Header

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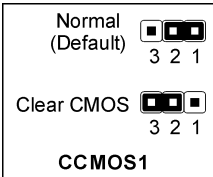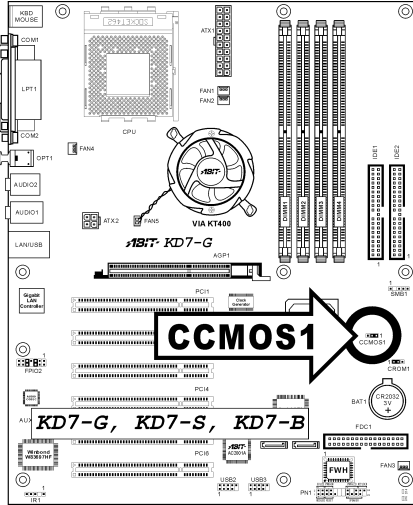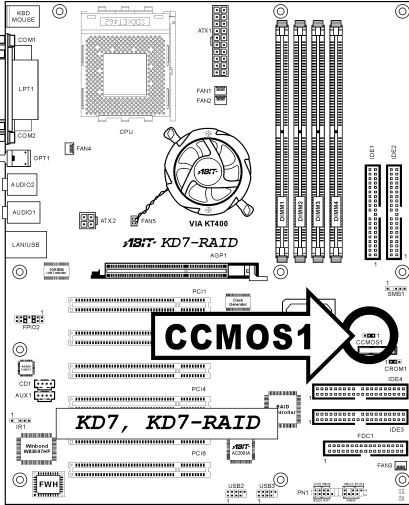
NOTE: Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.

(4). CROM1: S2K Mode Select Header

This header uses a jumper to select the S2K mode.

Short pin-2 and pin-3 for "**Strapping from Hardware**" to allow the CPU hardware controls the timing of S2K bus for a better system flexibility.

The default setting is pin-1 and pin-2 shorted for "**Strapping from boot ROM**" to allow the internal boot ROM controls the timing of S2K bus. The "**CPU Fast Command Decode**" option in the BIOS menu will then be enabled accordingly.
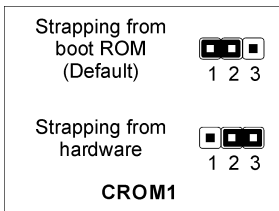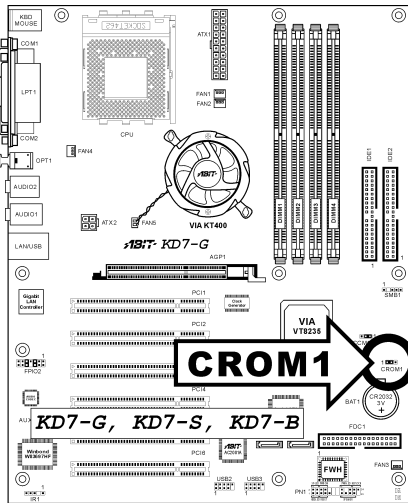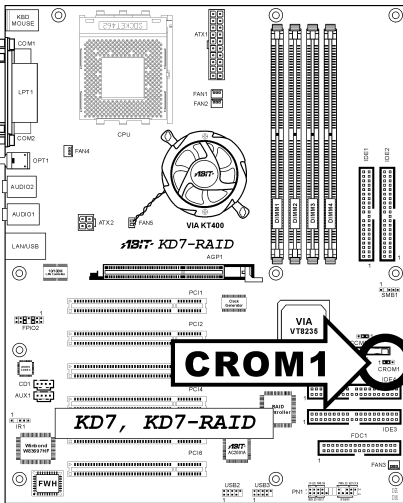
(5).   <u>USB2/USB3: Additional USB Port Headers</u>

These headers each provide 2 additional USB 2.0 ports connection through an USB cable designed for USB 2.0 specifications.
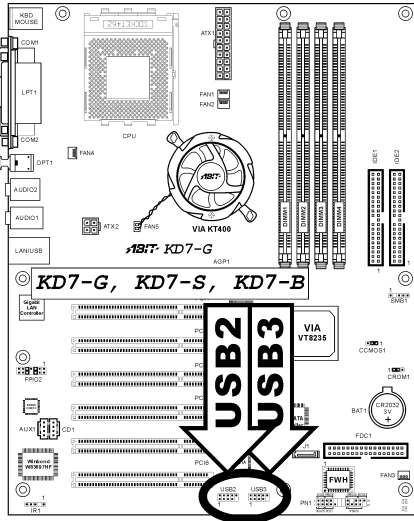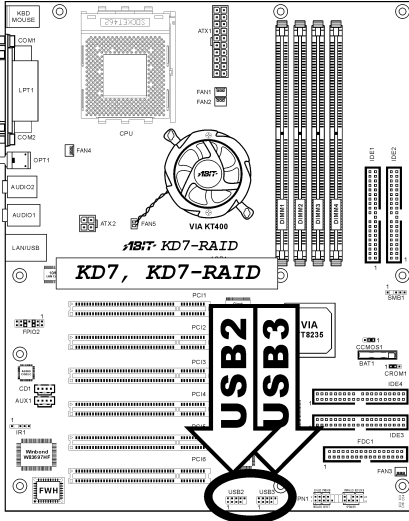
Pin	Pin Assignment	Pin	Pin Assignment
1	VCC	2	VCC
3	Data0 -	4	Data1 -
5	Data0 +	6	Data1 +
7	Ground	8	Ground
9	NC	10	NC

(6). IR1: Infrared Device Header

This header connects to an optional IR device attached to chassis. This motherboard supports standard IR transfer rates.
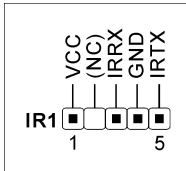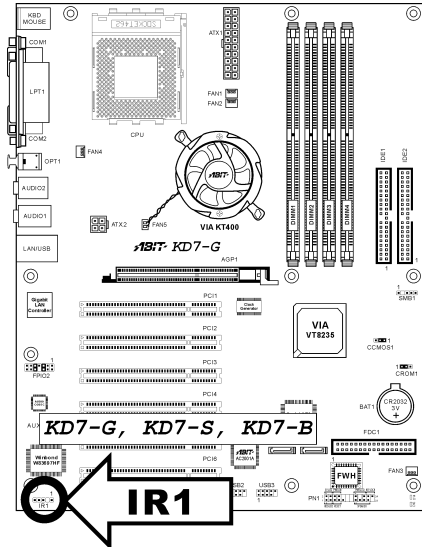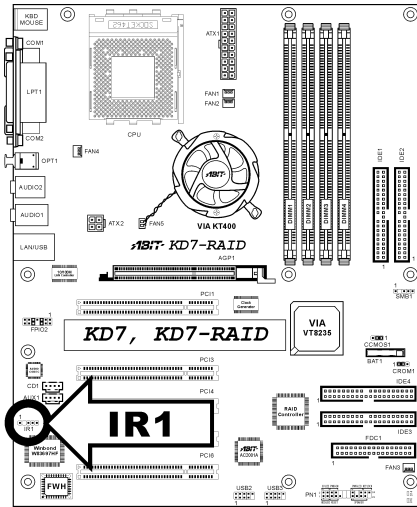
(7). __PN1: Front Panel Switches & Indicators Headers__

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.
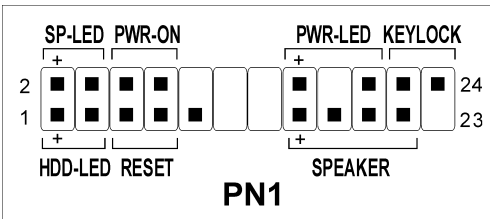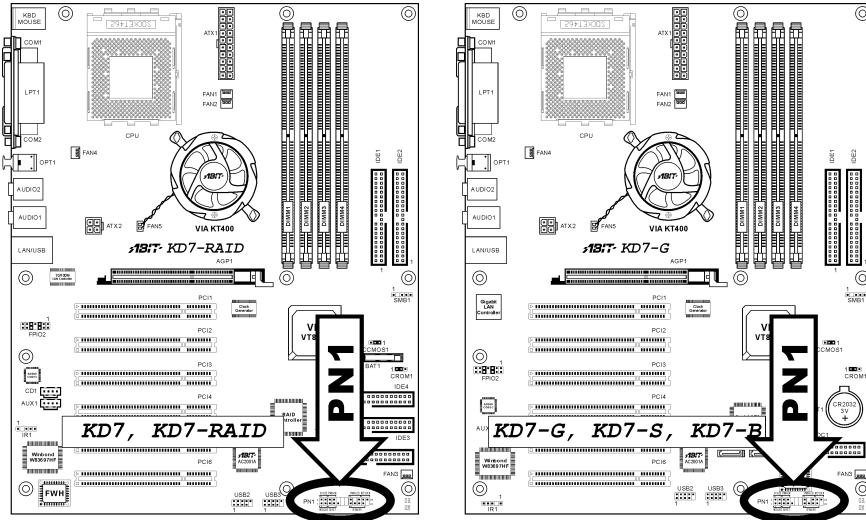
- **Pin-1/3: HDD-LED**
  Connects to the HDD LED cable of chassis front panel.

- **Pin-5/7: RESET**
  Connects to the Reset Switch cable of chassis front panel.

- **Pin-15/17/19/21: SPEAKER**
  Connects to the System Speaker cable of chassis.

- **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.

- **Pin-16/18/20: PWR-LED**
  Connects to the Power LED cable of chassis front panel.

- **Pin-22/24: KEYLOCK**
  Connects to the Keylock cable (if there is one) of chassis front panel.

(8). <u>**D14/D16: Status Indicator**</u>

- **D14 (5VSB): Stand By LED Indicator**
  This LED lights up when the power supply is connected with power source.

- **D16 (VCC): Power on Indicator**
  This LED lights up when the system power is on.
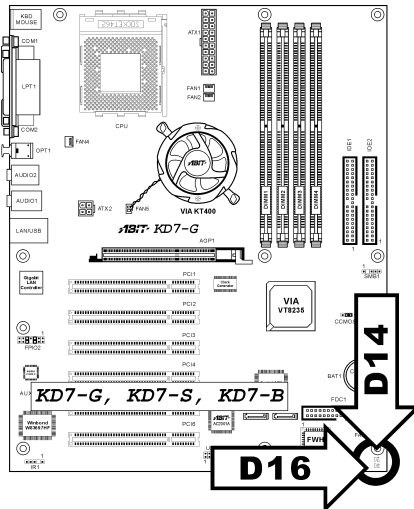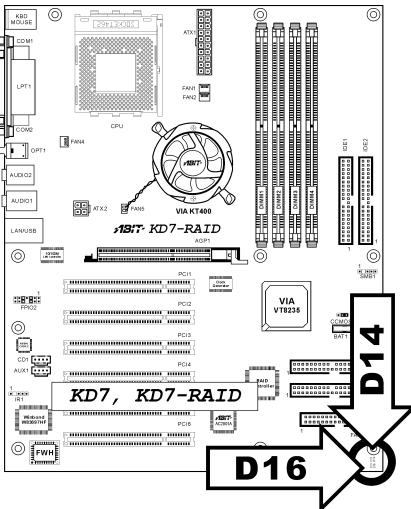
(9).   FPIO2: Front Panel Audio Connection Header

This header provides the connection to audio connector at front panel (ABIT Media XP).

- To use the audio connector at front panel, remove all the jumpers on this header, and then connect to front panel by the extenson 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).
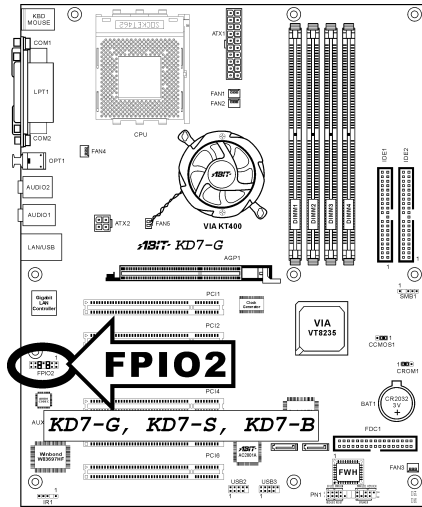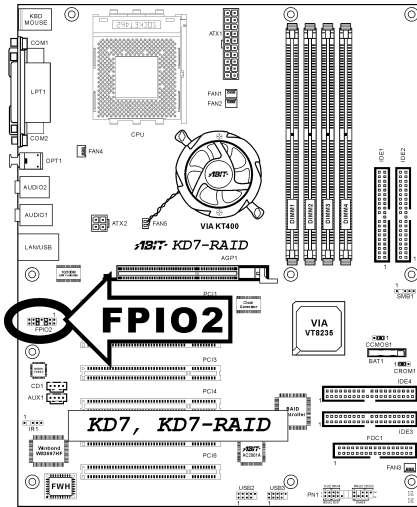
Pin	Pin Assignment	Pin	Pin Assignment
1	Audio Mic.	2	Ground
3	Audio Mic. Bias	4	VCC
5	Speaker Out Right Channel	6	Speaker Out Right Channel Return
7	X	8	NC
9	Speaker Out Left Channel	10	Speaker Out Left Channel Return
11	Ground	12	S/PDIF In
13	VCC	14	S/PDIF Out
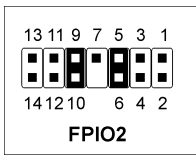
(10). SMB1: System Management Bus Headers

This header is reserved for system management bus (SM bus). The SM bus is a specific implementation of an I^2C bus. I^2C is a multi-master bus, which means that multiple chips can be connected to the same bus and each one can act as a master by initiating a data transfer. If more than one master simultaneously tries to control the bus, an arbitration procedure decides which master gets priority.
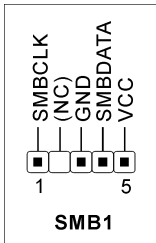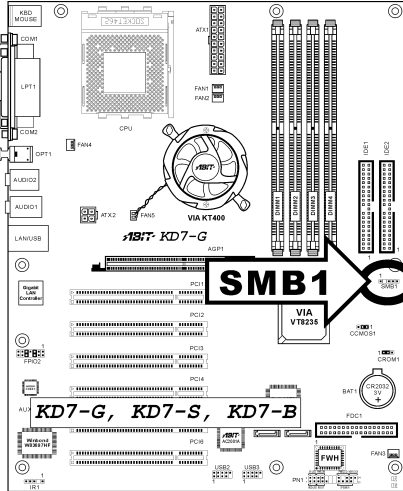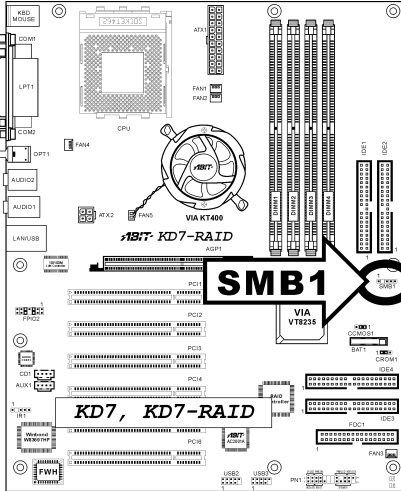
(11). CD1, AUX1: Internal Audio Connector

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

(12). AGP1: Accelerated Graphics Port Slot

This slot supports an optional AGP graphics card up to AGP 8X mode. Please refer to our Web site for more information on graphics cards.
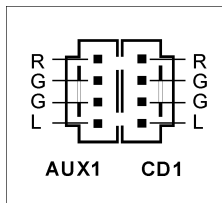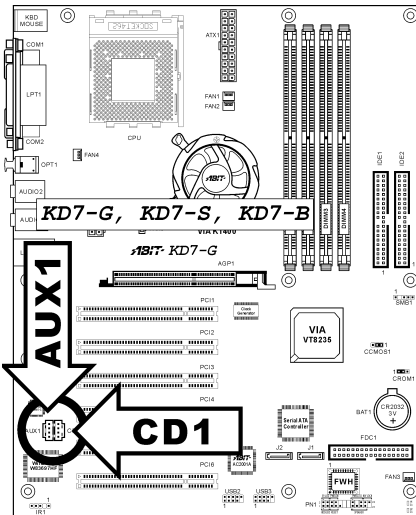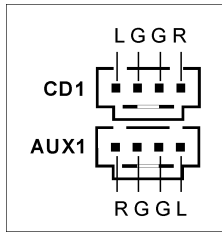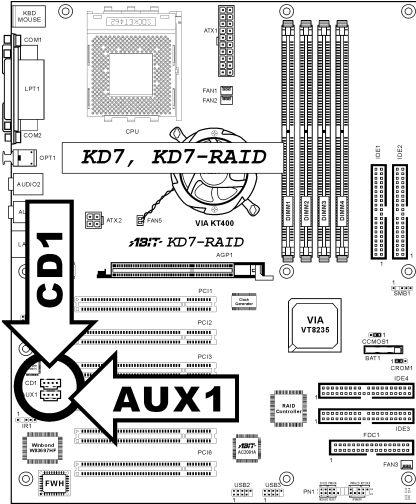
(13). FDD1 Connector

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 FDD1, 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.
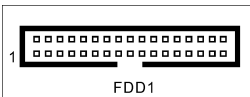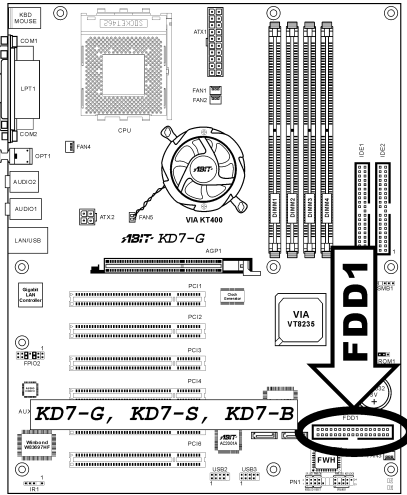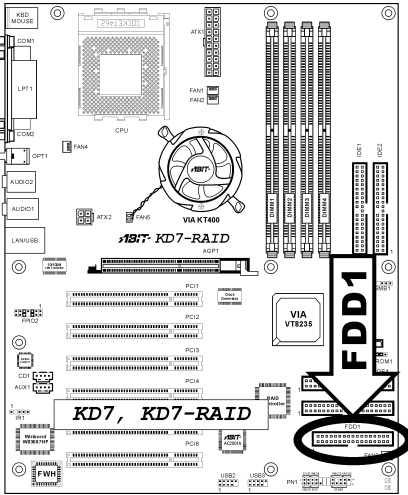
(14). IDE1/IDE2 and IDE3/IDE4 Connectors

This motherboard provides two IDE ports to connect up to four IDE drives at Ultra ATA/133 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.
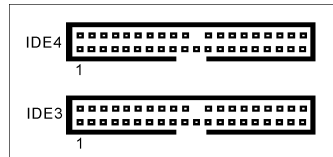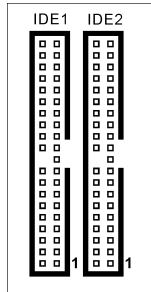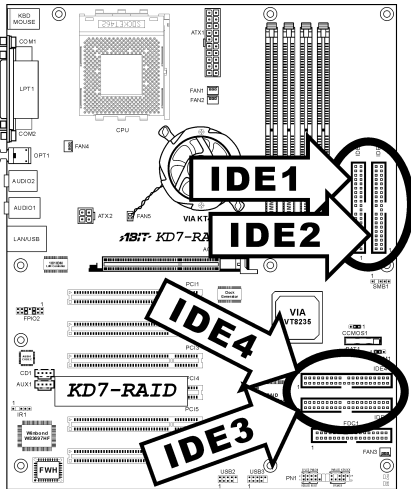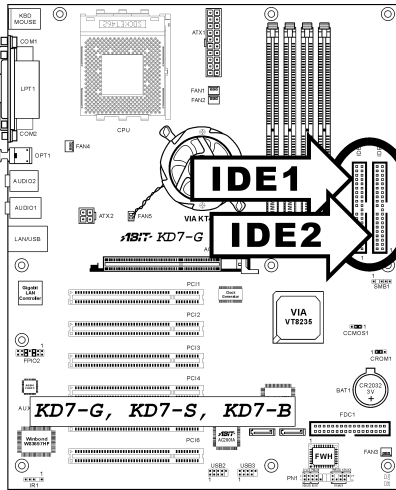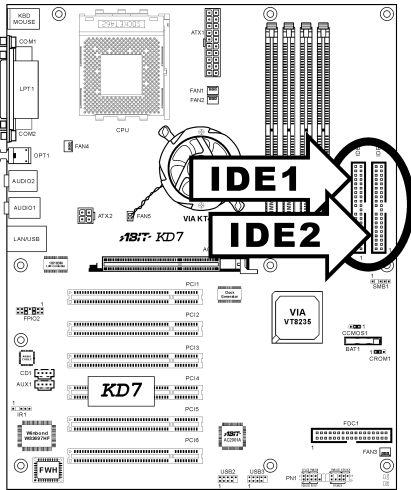
If you want to connect two hard drives together through one IDE channel, you must configure the second drive to Slave mode after the first Master drive. Please refer to the drives' documentation for jumper settings. The first drive connected to IDE1 is usually referred to as "Primary Master", and the 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.

For KD7-RAID: IDE3 and IDE4 are extra devices controlled by a HighPoint HPT372 chipset. This bonus feature allows for having regular Ultra ATA/133 devices ports, or a RAID array in the combination of RAID 0, RAID 1, or RAID 0+1 mode.

Note: The red line on the ribbon cable should be aligned with pin 1 on this connector.
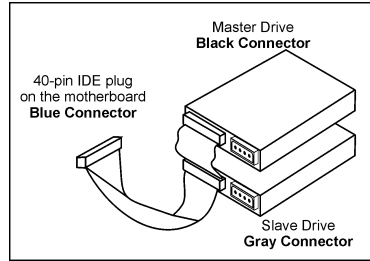
(15). J1/J2: Serial ATA Connector (For KD7-G & KD7-S)

These two connectors are provided to attach one serial ATA device at each channel through Serial ATA cable. It is also possible to connect legacy IDE hard disk through an optional SERILLEL Converter.

To Serial ATA Hard Disk

Serial ATA Cable

To IDE Hard Disk

J2   J1   SERILLEL Converter
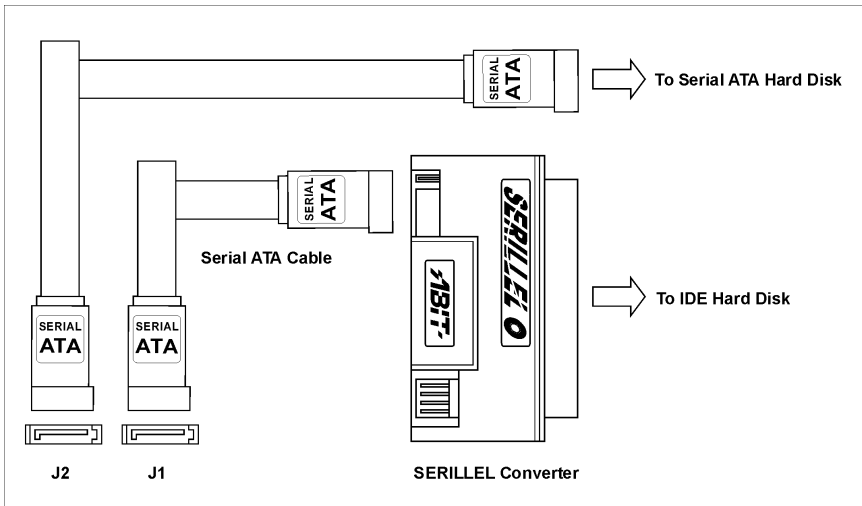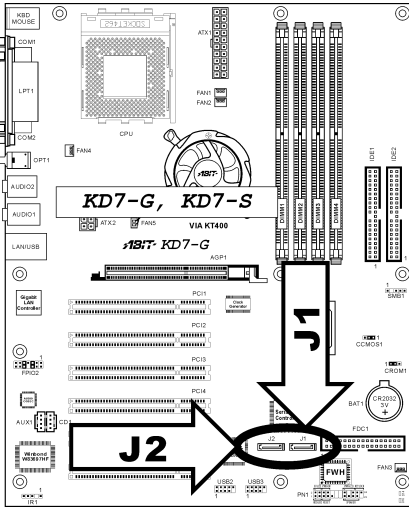
(16). <u>**Back Panel Connectors**</u>
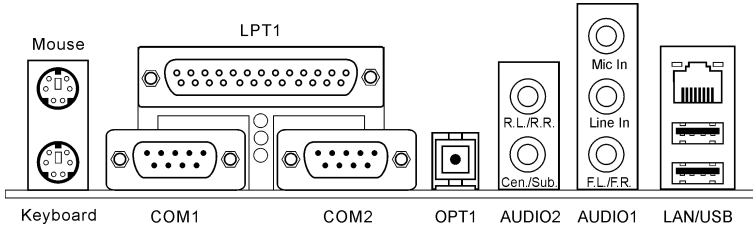
- **Mouse**
  Connects to PS/2 mouse.

- **Keyboard**
  Connects to PS/2 keyboard.

- **LPT1**
  Connects to printer or other devices that support this communication protocol.

- **COM1/COM2**
  This motherboard provides two COM ports to connect external modem, mouse or other devices that support this communication protocol.

- **OPT1**
  This connector provides an S/PDIF out connection through optical fiber to digital multimedia devices.

- **AUDIO2**
  R.L./R.R. (Rear Left / Rear Right): Connects to the rear left and rear right channel in the 5.1 channel audio system.
  Cen./Sub. (Center / Subwoofer): Connects to the center and subwoofer channel in the 5.1 channel audio system.

- **AUDIO1**
  Mic In: Connects to the plug from external microphone.
  Line In: Connects to the line out from external audio sources.
  F.L./F.R. (Front Left / Front Right): Connects to the front left and front right channel in the 5.1-channel or regular 2-channel audio system.

- **LAN**
  Connects to Local Area Network.

- **USB**
  Connects to USB devices such as scanner, digital speakers, monitor, mouse, keyboard, hub, digital camera, joystick etc.

Chapter 3. 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, **CPU SoftMenu™ III** features 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 section of "**CMOS Memory Clearing Header**" in Chapter 2.

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:

<div align="center">

PRESS DEL TO ENTER SETUP

</div>

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

<div align="center">
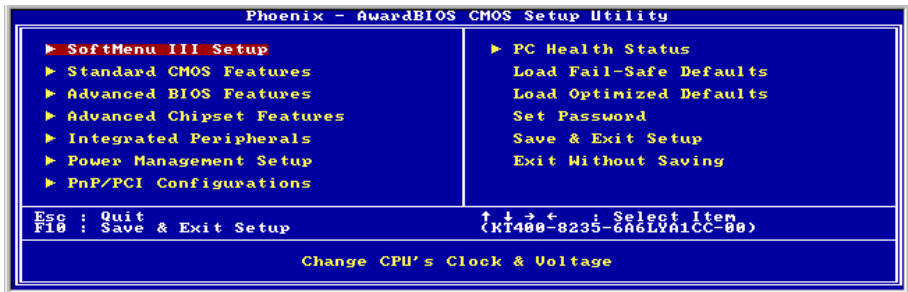
Figure 3-1. CMOS Setup Utility

</div>

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 3-1, 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.

CMOS Data: Maybe you have heard somebody saying that his or her CMOS DATA was lost. What is the CMOS? Is it important? The CMOS is the memory used to store the BIOS parameters that you have configured. This memory is passive. You can read its data, and you can also store data in it. But this memory has to be powered by a battery in order to avoid any loss of its data when the computer is turned off. Since you may have to change the CMOS battery when it is out of power, and if doing so you will lose all CMOS data, we recommend that you write down all the parameters of your hardware, or to put a label with these parameters on your hard disk.

3-1. CPU Setup [SoftMenu™ III]

The CPU can be setup through a programmable switch (**CPU SoftMenu™ III**) that replaces the traditional manual hardware configuration. This feature allows the user to more easily complete the installation procedures. You can install the CPU without configuring any jumpers or switches. The CPU must be setup according to its specifications.

Figure 3-2. CPU SoftMenu™ III

CPU Name Is:

This item displays the CPU model name, for example: AMD Athlon(tm) XP.

CPU Operating Speed:

Select the CPU speed according the type and speed of your CPU.

Normally, we do not recommend that you use the "User Define" option to setup CPU speed and multiplier factors. This option is for setup of future CPUs whose specifications are still unknown. The specifications of all present CPUs are included in the default settings. Unless you are very familiar with all CPU parameters, it is very easy to make mistakes when you define the external clock and the multiplier factor by yourself. When you complete the setting in this option, the POST will not check if the actual running speed is the same as the one you set.

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.

❈　**CPU FSB Clock (MHz):**

This item sets the CPU Front Side Bus speed from 100 to 250. Due to the specification limit of the CPU you installed, the speed you set over its standard bus speed is supported, but not guaranteed.

❈　**Ratio (FSB:AGP:PCI):**

This item sets the ratio among the clock of FSB, AGP, and PCI. Take the 4:2:1ratio for instance, if the FSB clock is 133MHz (133 x 4/4), the AGP clock will be 66MHz (133 x 2/4), and the PCI clock will be 33MHz (133 x 1/4).

❈　**Multiplier Factor:**

This item sets the multiplier factor for the CPU you installed.

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

❈　**Enhance For Benchmark:**

This option improves your processor and system performance.

Solution in case of booting problem due to invalid clock setup:

Normally, if the CPU clock setup is wrong, you will not be able to boot. In this case, turn the system off then on again. The CPU will automatically use its standard parameters to boot. You can then enter the BIOS Setup again and set up the CPU clock. If you can't enter the BIOS setup, you must try turning the system on a few times (3~4 times) or press <INSERT> when turning on, and the system will automatically use its standard parameters to boot. You can then enter BIOS SETUP again and set up the new parameters.

When you change your CPU:

This motherboard has been designed in such a way that you can turn the system on after having inserted a CPU in the socket without having to configure any jumpers or DIP switches. If you change your CPU, normally you just have to turn off the power supply, change the CPU and then set up the CPU parameters

through **SoftMenu™ III**. However, <u>if the new CPU is slower than the old one (and is the same brand and type)</u>, we offer you two methods to successfully complete the CPU change operation.

Method 1: Setup up the CPU for the lowest speed for its brand. Turn the power supply off and change the CPU. Then turn the system on again, and set up the CPU parameters through **SoftMenu™ III**.

Method 2: Since you have to open the computer case when you change the CPU, it would be a good idea to use the CMOS clearing jumper to erase the parameters of the original CPU and to enter BIOS Setup to set up CPU parameters again.

ATTENTION: After setting up the parameters and leaving the BIOS SETUP, and having verified that the system can be booted, do not press the Reset button or turn off the power supply. Otherwise the BIOS will not read correctly, the parameters will fail and you must enter **SoftMenu™ III** again to set up the parameters all over again.

Power Supply:

This option allows you to switch between Default and User Define voltages.

Default: The system will detect the CPU type and select the proper voltage automatically. When it is enabled, the option "**CPU Core Voltage**" will show the current voltage setting that is defined by the CPU and this will not be changeable. We recommend using this CPU default setting and not changing it unless the current CPU type and voltage setting can not be detected or is not correct.

User Define: This option lets the user select the voltage manually. You can change values of the "**CPU Core Voltage**" and "**DDR Voltage**" option lists by using the arrow up and arrow down keys.

This option allows you to switch between Default and User Define voltages.

CPU Fast Command Decode:

Two options are available: at Normal ➔ to Fast or at Fast ➔ to Normal. This will depends which state you choose. If you set this item from "**at Fast**" to "**to Normal**", when you reboot the system and finish the POST process, the state will change to your new setting (Here's *to Normal*). After that, if you go to view the BIOS menu again, you will see this item shows "**at Normal**", if you press the <**Enter**> key, you'll see the two options: at Normal ➔ to Fast, and the default setting is *at Normal*. If you set this item from "**at Normal**" to "**to Fast**", and go through the same process we mentioned before, you will see this item shows "**at Fast**", if you press the <**Enter**> key, you'll see the two options: at Fast ➔ to Normal, and the default setting is *at Fast*. You can select item if you want CPU decode address is faster or normal speed. We suggest you choose *to Normal* for greatest stability. Should you want increased performance then you can select *to Fast*. You have to set the jumper on the motherboard called "**CROM**" pin 1 and pin 2 short, then you can see this item appear in this menu.

3-2.   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 3-3. 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 3-4 to check what options are available.
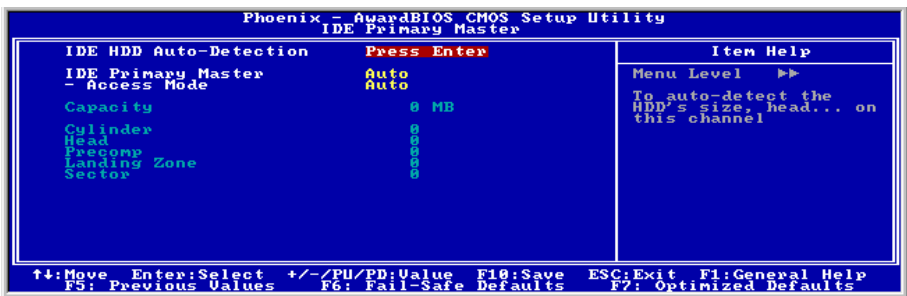
Figure 3-4. IDE Primary Master Setup Screen Shot

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.

CHS (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 65535.

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 65535.

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 65535.

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. Six options are available: None ➔ 360K, 5.25in. ➔ 1.2M, 5.25in. ➔ 720K, 3.5in. ➔ 1.44M, 3.5in. ➔ 2.88M, 3.5in.

Floppy 3 Mode Support:

Four options are available: Disabled ➔ Driver A ➔ Driver B ➔ Both. The default setting is *Disabled*. 3 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, four options are available: EGA/VGA ➔ CGA 40 ➔ CGA 80 ➔ MONO. The default setting is *EGA/VGA*.

Halt On:

You can select which type of error will cause the system to halt. Five options are available: All Errors ➔ No Errors ➔ All, But Keyboard ➔ All, But Diskette ➔ All, But Disk/Key.

You can see your system memory list in the lower left box, it shows the *Base Memory*, *Extended Memory* and *total Memory size* configurations in your system. It is detected by the system during boot-up procedure.

3-3. Advanced BIOS Features Setup Menu
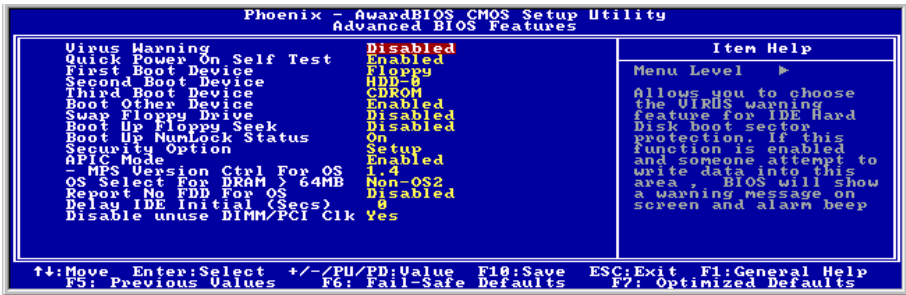
Figure 3-5. Advanced BIOS Features Setup Screen

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.

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. The default setting is ***Enabled***.

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. The default setting is ***Floppy***.

Second Boot Device:

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

Third Boot Device:

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

Boot Other Device:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This setting allows the BIOS to try to boot devices other than the three, which are listed in the above First, Second, and Third Boot Devices. If you set to Disabled, the BIOS will boot from only the three kinds of boot devices that are set above.

Swap Floppy Drive:

This item can be set as Enabled or Disabled. The default setting is ***Disabled***. When this feature is 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 detect no floppy drive, it will display a floppy disk drive error message. If this item is disabled, the BIOS will skip this test. The default setting is ***Disabled***.

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.

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:

Two options are available: Disabled or Enabled. 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.

NOTE: Assume you enable this item then installing the Windows® 2000 or Windows® XP operating system, after that, if you disable this item then reboot your system, your operating system will hang. You have to change this item setting to *Enabled* then your operating system will back to normal.

MPS Version Ctrl For OS:

This item specifies which version of MPS (Multi-Processor Specification) this motherboard will use. The options are 1.1 and 1.4. The default setting is ***1.4***. 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*. The default setting is ***Non-OS2***.

<u>**Report No FDD For OS:**</u>

When you are running some older Windows version without floppy drive, set this item to *Yes*. Otherwise, set it to *No*. The default setting is ***No***.

<u>**Delay IDE Initial (Secs):**</u>

This item is used to support some old models or special types of hard disks or CD-ROMs. They may need a longer amount of time to initialize and prepare for activation. Since the BIOS may not detect those kinds of devices during system booting. You can adjust the value to fit such devices. Larger values will give more delay time to the device. The minimum number you can enter is 0, the maximum number you can enter is 15. The default setting is ***0***.

<u>**Disable unuse DIMM/PCI Clk:**</u>

Select [Yes] to let the system automatically detect the unused DIMM and PCI slots, and stop sending clock signal to these unused slots. Select [No] to let the system always send clock signal to all slots.

NOTE: Some adapters cannot be automatically detected by the system, and will cause malfunction. Please set this option to *no*. The problem can be solved.

3-4. 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.
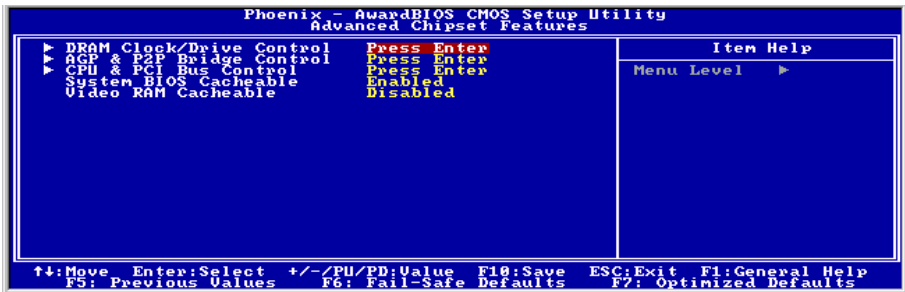
Figure 3-6. Advanced Chipset Features Setup Screen

NOTE: The parameters in this screen are for system designers, service personnel, and technically competent users only. Do not reset these values unless you understand the consequences of your changes.

<u>**DRAM Clock/Drive Control:**</u>

This item can let you set several items concerning the DRAM parameters. If you do not understand what each item does, please keep the default settings. Wrong settings may cause system unstablity, data loss or even prevent boot up!

Current FSB Frequency:

This item will show you the current system front side bus speed.

Current DRAM Frequency:

This item will show you the current DRAM bus speed.

DRAM Clock:

This item sets the DRAM clock of your DRAM module. The system may be unstable or unable to boot up if your DRAM module does not support the clock you set.

When set to [By SPD], the BIOS will read the DRAM module SPD data and automatically set the DRAM clock by the value stored in it.

NOTE: This item will be unchangeable at 333MHz FSB.

DRAM Timing Selectable:

Four options are available: Manual ➜ By SPD ➜ Turbo ➜ Ultra. The default setting is *By SPD*. When set to "**By SPD**", the BIOS will read the DRAM module SPD data and automatically set to the values stored in it. If you set to "**Manual**", the following five items will be available to let you make adjustments.

❋   **CAS Latency Time:**

Four options are available: 1.5 ➜ 2 ➜ 2.5 ➜ 3. The default setting is *2.5*. You can select SDRAM CAS (**C**olumn **A**ddress **S**trobe) latency time according your SDRAM specification.

❋   **Bank Interleave:**

Three options are available: Disabled ➜ 2 Bank ➜ 4 Bank. The default setting is *Disabled*. Depending on your SDRAM module structure, the 4-Way setting can offer the best performance. If you choose the wrong setting, the computer system will not run in a stable manner. For detailed information on your SDRAM module, please ask your SDRAM module manufacturer.

❋   **Precharge to Active (Trp):**

Trip timing value (Precharge time – time from precharge command to when back can be activated).

❋   **Active to Precharge (Tras):**

Tras timing value = Minimum bank active time from activate to precharge of same bank.

❋   **Active to CMD (Trcd):**

Trcd timing value = RAS to CAS latency + rd/wr command delay

DRAM Burst Length

DDR SDRAM modules provide a Burst mode that means an auto precharge function for programmable READ or WRITE burst lengths of 4 or 8 locations.

This means that if we set burst length to 8, the address bus will acesss 8 bytes each cycle to precharge, etc.

DRAM Queue Depth:

Three options are available: 2 Level ➔ 4 Level ➔ 3 level. The default setting is *4 Level*. This item sets DRAM queue depth to accommodate maximum memory throughput.

DQS Drive Strength:

Four options are available: Auto ➔ Low ➔ Medium ➔ High. The default setting is *Auto*. This item can adjust the DQS signal drive strength for data sent to DDR SDRAM. More DDR SDRAM DIMM installed, you may set it to *High*.

DDR DQS Input Delay:

Two options are available: Auto or Manual. The default setting is *Auto*. If you set to *Manual*, then the next item will be available.

❋   **Input Delay Value:**

This item allows you to adjust the data input strobe delay time of memory. You can key in the HEX number into this section. The minimum number is 0000, and maximum number is 00FF.

DDR DQS Output Delay:

Two options are available: Auto or Manual. The default setting is *Auto*. If you set to *Manual*, then the next item will be available.

❋   **Output Delay Value:**

This item allows you to adjust the data output strobe delay time of memory. You can key in the HEX number into this section. The minimum number is 0000, and maximum number is 00FF.

MD Drive Strength:

Two options are available: Auto or Manual. The default setting is *Auto*. If you set to *Manual*, then the next item will be available.

❈   **Drive Value:**

This item allows you to adjust the memory data drive strength. You can key in the HEX number into this section. The minimum number is 0000, and maximum number is 00FF.

DIMM1-4 CMD Drive Control:

Two options are available: Auto or Manual. The default setting is *Auto*. This item can allow you to use auto or manual method to control the DIMM1 to DIMM4 command drive strength. If you set to *Manual*, then the next item will be available.

❈   **DIMM1&2 CMD Drive:**

This item allows you to adjust the memory data drive strength. You can key in the HEX number into this section. The minimum number is 0000, and maximum number is 00FF. Adjust the drive strength for command sent to DDR SDRAM (This adjustment for DIMM 1 and DIMM 2 only). This will depend on your DDR SDRAM specification and numbers to set. More DDR SDRAM DIMM installed, you may set it to higher values.

❈   **DIMM3&4 CMD Drive:**

This item allows you to adjust the memory data drive strength. You can key in the HEX number into this section. The minimum number is 0000, and maximum number is 00FF. Adjust the drive strength for command sent to DDR SDRAM (This adjustment for DIMM 3 and DIMM 4 only). This will depend on your DDR SDRAM specification and numbers to set. More DDR SDRAM DIMM installed, you may set it to higher values.

DRAM Access:

Two options are available: 2T ➔ 3T. The default setting is *3T*. This item allow you to choose the DRAM access time cycle, 2T can let you get quick DRAM acess time than 3T, and 3Tis a general DRAM setting.

Enhance DRAM Performance:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. This item can improve your system DRAM performance.

DRAM Command Rate:

Two options are available: 2T Command or 1T Command. The default setting is *2T Command*. When the host (northbridge) locates the desired memory address, it then processes the wait state of commands. Set it to *2T Command* for system compatibility or to *1T Command* for system performance.

Write Recovery time:

Two options are available: 2T or 3T. The default setting is *3T*. This is the period between two write times.

DRAM tWTR:

Two options are available: 1T or 3T. The default setting is *3T*. This is the Internal WRITE to READ command delay time period.

DCLK Output Delay:

Eight options are available: 0 ps ➔ 150 ps ➔ 300 ps ➔ 450 ps ➔ 600 ps ➔ 750 ps ➔ 900 ps ➔ 1050 ps. The default setting is *0 ps*. The northbridge will send an output signal to clock buffer of DRAM

module, then clock buffer will feedback a signal to northbridge. The value you set will effect the delay time for DCLK output signal. This item will effect the DRAM module's stability, we suggestion you set to *0 ps*.

✧ Back to Advanced Chipset Features Setup Menu:

AGP & P2P Bridge Control:

Press <Enter> key to enter the AGP & P2P Bridge Control menu.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                    AGP & P2P Bridge Control
  ┌──────────────────────────────────────────────┬─────────────────────┐
  │ AGP Aperture Size          64M                │      Item Help      │
  │ AGP Data Transfer Rate     4X                 │                     │
  │ AGP Fast Write             Disabled           │  Menu Level    ▶▶   │
  │ AGP Read Synchronization   Disabled           │                     │
  │ Enhance AGP Performance    Disabled           │                     │
  │ AGP Master 1 WS Write      Disabled           │                     │
  │ AGP Master 1 WS Read       Disabled           │                     │
  │ DBI Output for AGP Trans.  Disabled           │                     │
  │                                               │                     │
  │                                               │                     │
  │                                               │                     │
  │                                               │                     │
  │                                               │                     │
  │                                               │                     │
  ├───────────────────────────────────────────────┴─────────────────────┤
  │ ↑↓:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
  │    F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults  │
  └────────────────────────────────────────────────────────────────────┘
```

AGP Aperture Size:

This option specifies the amount of system memory that can be used by the AGP device. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.

AGP Data Transfer Rate:

AGP 2.0: Two options are available: 4X ➔ 2X.

AGP 3.0: This item disappears.

NOTE: The 2X mode here means you are using the AGP 4X adapter, but set it to 2X mode via software or applications AGP concerning settings.

AGP Fast Write:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. If your AGP adapter can support this function, then you can choose *Enabled*. Otherwise, choose *Disabled*.

AGP Read Synchronization:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. Thi sitem can set AGP data read transaction to synchronization mode.

Enhance AGP Performance:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. This item can improve the AGP display performance.

AGP Master 1 WS Write:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. This implements a single delay when writing to the AGP Bus. When you set it to *Enabled*, two-wait states are used by the system, allowing for greater stability.

AGP Master 1 WS Read:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. This implements a single delay when reading to the AGP Bus. When you set it to *Enabled*, two-wait states are used by the system, allowing for greater stability.

DBI Output for AGP Trans.:

Two options are available: Disabled ➔ Enabled. The default setting is *Disabled*. In order to mitigate the effects of simultaneous switching outputs, AGP 3.0 adopts a scheme called **D**ynamic **B**us **I**nversion (DBI) to limit the maximum number of simultaneous transitions on source synchronous data transfers.

NOTE: This item only shows up when you installed the display adapter that supports AGP 3.0 specifications.

✎ **Back to Advanced Chipset Features Setup Menu:**

CPU & PCI Bus Control:

Press <Enter> key to enter the CPU & PCI Bus Control menu.
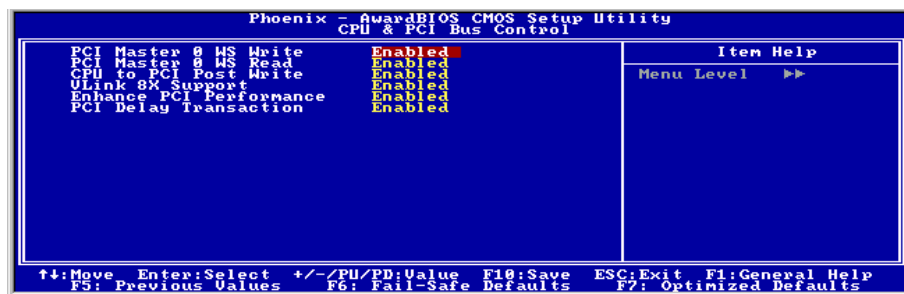
PCI Master 0 WS Write:

Two options are available: Enabled or Disabled. The default setting is *Enabled*. When *Enabled,* writes to the PCI bus are executed with zero wait state (immediately) when PCI bus is ready to receive data. If it is set to *Disabled*, the system will wait one state before data is written to the PCI bus.

PCI Master 0 WS Read:

Two options are available: Enabled or Disabled. The default setting is *Enabled*. When *Enabled,* reads to the PCI bus are executed with zero wait state (immediately) when PCI bus is ready to receive data. If it is set to *Disabled*, the system will wait one state before data is written to the PCI bus.

CPU to PCI Post Write

Two options are available: Enabled or Disabled. The default is *Enabled*, When *Enable*, data transmission from CPU to PCI bus are buffered and compensate for the different speed between CPU and PCI bus. If it is set to *Disabled*, data transmissions are not buffered and CPU must wait until the data transmission is complete and then start another transmission cycle.

Vlink 8X Support:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This item can let you enable the Vlink bus data transfer between northbridge and southbridge.

Enhance PCI Performance:

Two options are available: Disabled ➜ Enabled. The default setting is *Enabled*. This item can improve the PCI transmission performance.

PCI Delay Transaction:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.2.

✎ Back to Advanced Chipset Features Setup Menu:

System BIOS Cacheable:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. When you select *Enabled*, you get faster system BIOS executing speed via the L2 cache.

Video RAM Cacheable:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When you select *Enable*, you get faster video RAM executing speed via the L2 cache. You must check your VGA adapter manual to find out if any compatibility problems will occur.

3-5. Integrated Peripherals

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

Figure 3-7. Integrated Peripherals Menu Screen

OnChip IDE Device:

Press <Enter> key to enter the OnChip IDE Device menu.
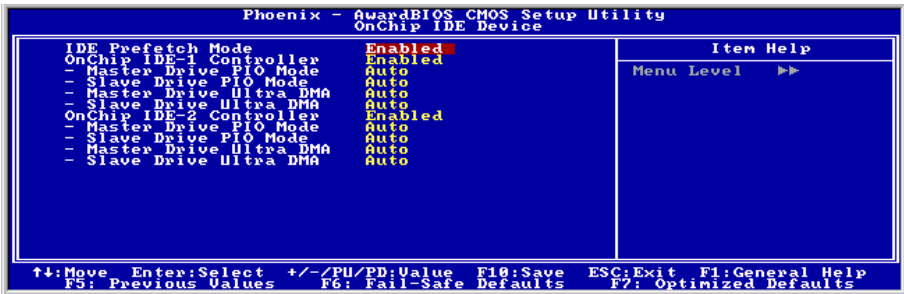
IDE Prefetch Mode:

Two options are available: Disabled or Enabled. The default setting is *Enabled*. The onboard IDE drive interfaces supports IDE prefetching for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

OnChip IDE-1 Controller:

The OnChip 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 affect the settings of four items not available. For example, if you disabled the *OnChip 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 133 MB/sec.

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.

OnChip IDE-2 Controller:

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

✎ **Back to Integrated Peripherals Setup Menu:**

OnChip PCI Device(s):

Press <Enter> key to enter the OnChip PCI Device menu.

```
              Phoenix - AwardBIOS CMOS Setup Utility
                           OnChip PCI Device
   OnChip Audio Controller      Enabled              Item Help
   OnChip LAN Controller        Enabled
 - OnChip Lan Boot ROM          Disabled      Menu Level     ▶▶
   OnChip USB Controller        Enabled
 - USB Keyboard Support         OS
 - USB Mouse Support            OS
 - USB 2.0 Controller           Enabled




 ↑↓:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
     F5: Previous Values      F6: Fail-Safe Defaults    F7: Optimized Defaults
```

OnChip Audio Controller:

This option enables or disables the audio controller.

OnChip LAN Controller:

This option enables or disables the LAN controller.

OnChip LAN Boot ROM:

This item enables or disables the Boot ROM on LAN controller.

OnChip 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 Via, USB Mouse Support Via, and USB 2.0 Controller* will also be disabled.

✻ **USB Keyboard Support Via:**

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 Via:**

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.

✻ **USB 2.0 Controller:**

Two options are available: Disabled or Enabled. The default setting is *Enabled*. This motherboard has the built-in USB 2.0 chipset that can support USB 2.0 specifications. If you set this controller to *Enabled*, you can use USB 2.0 functions.

✤ Back to Integrated Peripherals Setup Menu:

SuperIO Device:

Press <Enter> key to enter the SuperIO Device menu.

Onboard FDD Controller:

Two options are available: Enabled and Disabled. The default setting is ***Enabled***. You can enable or disable the onboard FDD 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*.

Onboard IR Function: Three options are available: IrDA (HPSIR) mode ➔ ASK IR (Amplitude Shift Keyed IR) mode ➔ Disabled. The default setting is *Disabled*.

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 *ECP+EPP* 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.

✥ **Back to Integrated Peripherals Setup Menu:**

Onboard PCI Device:

Press <Enter> key to enter the Onboard PCI Device menu.

```
            Phoenix - AwardBIOS CMOS Setup Utility
                       Onboard PCI Device
  ATA133 RAID Controller      Enabled            Item Help
  Serial ATA Controller       Enabled
  Broadcom LAN Controller     Enabled       Menu Level   ▶▶
  - Onboard LAN Boot ROM      Disabled
                                             Select [Enabled], turn
                                             on the  onboard
                                             SiliconImage Serial
                                             ATA controller.




  ↑↓:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
         F5: Previous Values     F6: Fail-Safe Defaults    F7: Optimized Defaults
```

ATA133RAID IDE Controller (For KD7-RAID):

This item selects the onboard ATA133RAID controller. When set to [Enabled], two additional channels will be provided for adding high performance devices to system.

Serial ATA Controller (For KD7-G and KD7-S):

This item selects the onboard Serial ATA controller. When set to [Enabled], two additional channels will be provided for adding high performance devices to system.

Broadcom LAN Controller:

This item enables or disables the Broadcom LAN controller.

Onboard LAN Boot ROM:

This item enables or disables the Boot ROM on Broadcom LAN controller.

✣ Back to Integrated Peripherals Setup Menu:

Init Display First:

Two options are available: PCI Slot or AGP. The default setting is *PCI Slot.* When you install more than one display card, you can choose either a PCI display card (PCI Slot) or an AGP display card (AGP) to display the boot-up screen. If you have only installed one display card, the BIOS will detect which slot (AGP or PCI) you installed it, and everything will be taken care of by the BIOS.

3-6.   Power Management Setup Menu

This menu allows you to set up the power management in order to reduce power consumption.
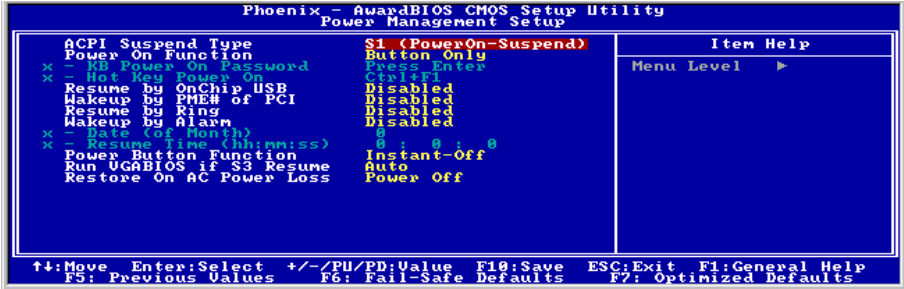
Figure 3-8. Power Management Setup Menu

If you want ACPI (Advanced Configuration and Power Interface) functions to work normally, you should notice two things. One is your operating system must support ACPI. The second thing is that all devices and add-on cards in your system must fully support ACPI, both hardware and software (drivers). If you want to know if your devices or add-on cards support ACPI or not, please contact the device or add-on card manufacturer for more information. If you want to know more about ACPI specifications, please go to the address below for more detailed information: http://www.acpi.info/

ACPI requires an ACPI-aware operating system. ACPI features include:

- Plug and Play (including bus and device enumeration) and APM functionality normally contained in the BIOS.

- Power management control of individual devices, add-in cards (some add-in cards may require an ACPI-aware driver), video displays, and hard disk drives.

- A Soft-off feature that enables the operating system to power off the computer.

- Support for multiple wake-up events (see Table 3-1).

- Support for a front panel power and sleep mode switch. Table 3-2 describes the system states based on how long the power switch is pressed, depending on how ACPI is configured with an ACPI-aware operating system.

System States and Power States:

Under ACPI, the operating system directs all system and device power state transitions. The operating system puts devices in and out of low-power states based on user preferences and knowledge of how devices are being used by applications. Devices that are not being used can be turned off. The operating system uses information from applications and user settings to put the system as a whole into a low-power state.

Table 3-1: Wake Up Device and Events

The table below describes which devices or specific events can wake the computer from specific states.

These device/events can wake up the computer……	……from this state
Power switch	Sleeping mode or power off mode
RTC alarm	Sleeping mode or power off mode
LAN	Sleeping mode or power off mode
Modem	Sleeping mode or power off mode
IR command	Sleeping mode
USB	Sleeping mode
PS/2 keyboard	Sleeping mode or power off mode
PS/2 mouse	Sleeping mode or power off mode

Table 3-2: Effect of Pressing the Power Switch

If the system is in this state……	……and the power switch is pressed for	……the system enters this state
Off	Less than four seconds	Power on
On	More than four seconds	Fail safe power off
On	Less than four seconds	Soft off/Suspend
Sleep	Less than four seconds	Wake up

ACPI Suspend Type:

Three options are available: S1 (PowerOn-Suspend) ➔ S3 (Suspend-To-RAM) ➔ Auto. The default setting is *S1 (PowerOn-Suspend)*. POS is "**P**ower **O**n **S**uspend", and STR is "**S**uspend **T**o **R**AM". Generally, ACPI has six states: System S0 state, S1 state, S2 state, S3 state, S4 state, S5 state. S1 and S3 states are described below:

The S1 (POS) State (POS means Power On Suspend):

While the system is in the S1 sleeping state, its behavior is as described below:

- The processor is not executing instructions. The processor's complex context is maintained.

- Dynamic RAM context is maintained.

- Power Resources are in a state compatible with the system S1 state. All Power Resources that supply a System Level reference of S0 are in the OFF state.

- Devices states are compatible with the current Power Resource states. Only devices which solely reference Power Resources which are in the ON state for a given device state can be in that device state. In all other cases, the device is in the D3 (off) state.

- Devices that are enabled to wake the system and that can do so from their current device state can initiate a hardware event which transitions the system state to S0. This transition causes the processor to continue execution where it left off.

To transition into the S1 state, the operating software does not have to flush the processor's cache.

The S3 (STR) State (STR means Suspend to RAM):

The S3 state is logically lower then the S2 state and is assumed to conserve more power. The behavior of this state is defined as follows:

- Processor is not executing instructions. The processor complex context is not maintained.

- Dynamic RAM context is maintained.

- Power Resources are in a state compatible with the system S3 state. All Power Resources that supply a System Level reference of S0, S1, or S2 are in the OFF state.

- Devices states are compatible with the current Power Resource states. Only devices which solely reference Power Resources which are in the ON state for a given device state can be in that device state. In all other cases, the device is in the D3 (off) state.

- Devices that are enabled to wake the system and that can do so from their current device state can initiate a hardware event which transitions the system state to S0. This transition causes the processor to begin execution at its boot location. The BIOS performs initialization of core functions as required to exit an S3 state and passes control to the firmware resume vector. Please see the ACPI Specification Rev. 1.0 book section 9.3.2 for more details on BIOS initialization.

From the software point of view, this state is functionally the same as the S2 state. The operational difference can be that some Power Resources that could be left ON in the S2 state might not be available to the S3 state. As such, additional devices can be required to be in logically lower D0, D1, D2, or D3 state for S3 than S2. Similarly, some device wake events can function in S2 but not S3.

Because the processor context can be lost while in the S3 state, the transition to the S3 state requires that the operating software flush all dirty cache to DRAM.

✦ *Above information for system S1 were refer to ACPI Specification Rev. 1.0.*

Power On Function:

Four options are available: Hot Key ➔ Password ➔ Mouse ➔ Button Only. The default setting is *Button Only*. This iten allow you to choose the computer power turn on method you like. Some item you choose, some of the following items will be available to let you making further setting. For instance, when you set this item to *Password*, the item of "**KB Power On Password**" will allow you to enter password. When you set this item to *Hot Key*, the item of "**Hot Key Power On**" will allow you to choose the hot key you want. If you choose *Mouse*, you can press any key on mouse to turn on the computer power.

❋ **KB Power On Password:**

When you perss the <**Enter**> key, then you can enter the password you want. When set be done, you need to saving and leave the BIOS setting menu to reboot your computer system. **Next time when you shutdown your computer, you can't use the power button to turn on the computer power anymore.** You need to press the password to turn on your computer power.

❋ **Hot Key Power On:**

Fifteen options are available: Ctrl+F1 ~ Ctrl+F12, Power, Wake and Any Key. The default setting is *Ctrl+F1*. You can choose the hot key that you want it to turn on your computer power.

Resume by OnChip USB:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event affecting from onchip USB will awaken a system that has powered down.

Wakeup by PME# of PCI:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event affecting from PCI card (PME) will awaken a system that has powered down.

Resume by Ring:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, any event affecting from Modem Ring will awaken a system that has powered down.

Wakeup by Alarm:

Two options are available: Disabled or Enabled. The default setting is *Disabled*. When set to *Enabled*, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode.

❋   **Date (of Month) / Resume Time (hh:mm:ss):**

You can set the Date (month) Alarm and Time Alarm (hh:mm:ss). Any event occurring will awaken a system that has powered down.

Power Button Function:

Two options are available: Delay 4 Sec or Instant-Off. The default setting is *Instant-Off*. It is activated when the user presses the power button for more than four seconds while the system is in the working state, then the system will transition to the soft-off (Power off by software). This is called the power button over-ride.

Run VGABIOS if S3 Resume:

Three options are available: Auto ➔ Yes ➔ No. The default setting is *Auto*. This item can let you choose when S3 resume active, the VGA BIOS need to be initiative or not.

Restore On AC Power Loss:

Three options are available: Last State ➔ Power On ➔ Power Off. The default setting is *Power Off*. This setting lets you set the system action after a power failure. This item lets you set the system power state when power recovers. If you set it to *Power Off*, when power returns, whatever state your computer was in before the power failure, the system will always turn off. If you set it to *Power On,* when power returns, whatever state your computer was in before the power failure, the system will always turn on. If you set it to *Last State*, when the power returns, the computer return to the previous power state.

3-7. PnP/PCI Configurations

In this menu, you can change the INT# and IRQ# of the PCI bus and other hardware settings.

Figure 3-9. PnP/PCI Configurations Setup Screen Shot

<u>Force Update ESCD:</u>

If you want to clear ESCD data next time you boot up, and ask the BIOS to reset the settings for the Plug & Play ISA Card and the PCI Card, select Enabled. But the next time you boot up, this option will automatically be set as Disabled.

NOTE: The ESCD (Extended System Configuration Data) contains the IRQ, DMA, I/O port, memory information of the system. This is a specification and a feature specific to the Plug & Play BIOS.

<u>Resources Controlled By:</u>

When resources are controlled manually, assign each system interrupt as one of the following types, depending on the type of device using the interrupt:

Legacy devices compliant with the original PC AT bus specification require a specific interrupt. PCI PnP devices comply with the Plug and Play standard, whether designed for the PCI or legacy bus architecture.

Two options are available: Auto (ESCD) ➔ Manual. The default setting is *Auto (ESCD)*. The Award Plug and Play BIOS has the capability to automatically configure all boot and Plug and Play compatible devices. If you select Auto (ESCD), all of the interrupt request (IRQ) fields become unselectable, as the BIOS automatically assigns them.

❋ **IRQ Resources:**

If you have trouble in assigning the interrupt resources automatically, you can select *Manual* to set which IRQ is assigned to which *PCI Device* or *Reserved* it. See the screen shot below.

Figure 3-10. IRQ Resources Setup Screen Shot

✥ **Back to PnP/PCI Configurations Setup Menu:**

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 Video:

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 VIA 8235 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**.

PIRQ_0 Use IRQ No. ~PIRQ_3 Use IRQ No. :

Eleven options are available: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, 15. Default setting is *Auto.* This item allows the system to automatically specify the IRQ number for the device installed on PCI slots. This means that the system can specify the fixed IRQ number for the device installed on the PCI slots (or onboard PCI devices). This is a useful function for 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 or Windows® 2000, you can simply 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 VIA VT8235 chipset), INT# (means PCI slot IRQ signals) and devices, please refer to the table below:

Signals	PIRQ_0 Assignment	PIRQ_1 Assignment	PIRQ_2 Assignment	PIRQ_3 Assignment
AGP	INT A	INT B		
PCI-1	INT A	INT B	INT C	INT D
PCI-2	INT B	INT D	INT C	INT A
PCI-3	INT B	INT A	INT D	INT C
PCI-4	INT D	INT A	INT B	INT C
PCI-5	INT C	INT D	INT A	INT B
PCI-6	INT D	INT B	INT C	INT A
HPT372 (KD7-RAID)			INT A	
LAN (KD7/KD7-RAID)		INT A		
LAN (KD7-G/S/B)				INT A
SATA (KD7-G/S)			INT A	

NOTE:

- PCI slot 1 shares IRQ signals with AGP slot.
- PCI slot 2 shares IRQ signals with PCI slot 6, and LAN (KD7-G, KD7-S, KD7-B).
- PCI slot 3 shares IRQ signals with PCI slot 4, and LAN (KD7/KD7-RAID).
- PCI slot 5 shares IRQ signals with HPT372 (KD7-RAID), and SATA (KD7-G, KD7-S).
- If you want to install two PCI cards into those PCI slots that share IRQ with one another at the same time, you must make sure that your OS and PCI devices' driver supports the IRQ sharing function.

3-8. 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*.
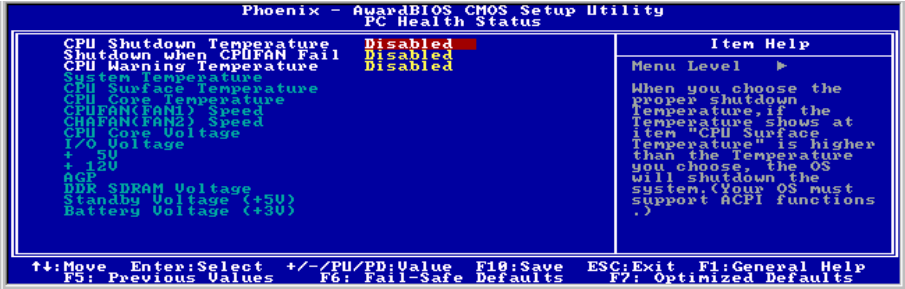
Figure 3-11. PC Health Status Screen Shot

CPU 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. The options are Disabled, 60°C/140°F, 65°C/149°F, 70°C/158°F, and 75°C/167°F. The default setting is ***Disabled***.

Shutdown When CPUFan Fail:

This item protects the CPU by shutting the system down if the fan of the option you select is not rotating. The options are: Disabled ➔ Enabled. The default setting is ***Disabled***.

If you select this option as Enabled, the system will be shut down:
(1) Immediately when the fan fails in the process of POST.
(2) Only when the fan fails in ACPI after the process of POST.

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℃/167℉***。

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.

3-9.   Load Fail-Safe Defaults
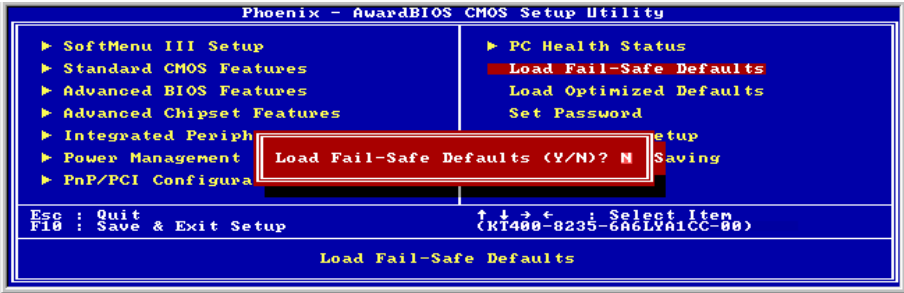
Figure 3-12. Load Fail-Safe Defaults Screen Shot

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ?   N

Pressing "Y" loads the BIOS default values for the most stable, minimal-performance system operations.

3-10. Load Optimized Defaults
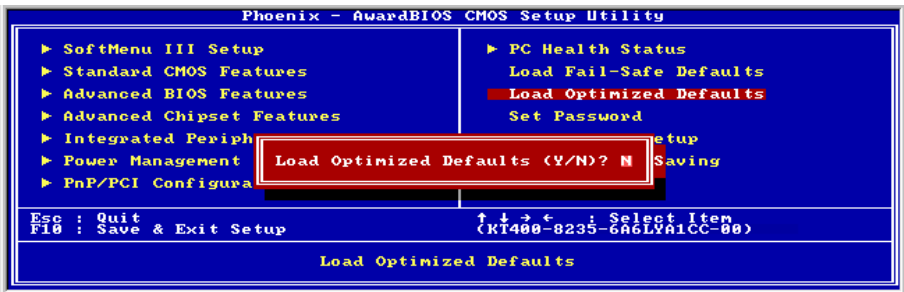
Figure 3-13. Load Optimized Defaults Screen Shot

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ?   N

Pressing "Y" loads the default values that are factory settings for optimal performance system operations.

3-11. Set Password
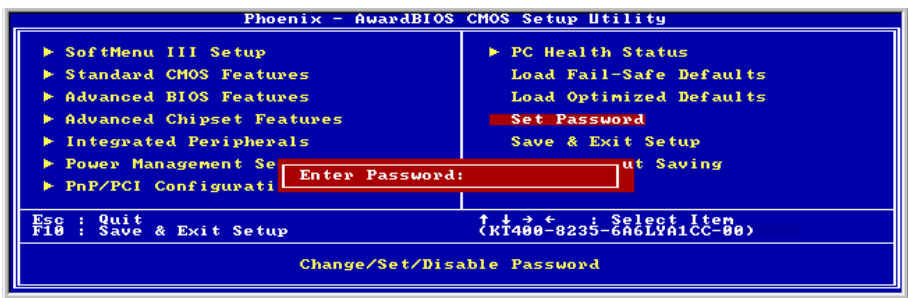
Figure 3-14. Set Password Screen Shot

Set Password: You can enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a 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.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.
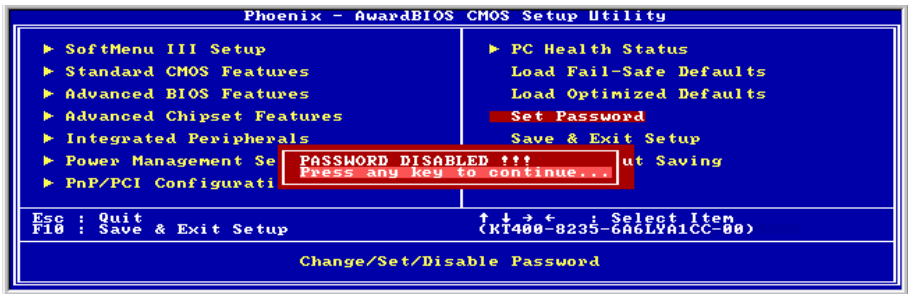
Figure 3-15. Password Disabled Screen Shot

You can determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If it is set to "Setup", the prompting only occurs when trying to enter Setup.

3-12. Save & Exit Setup
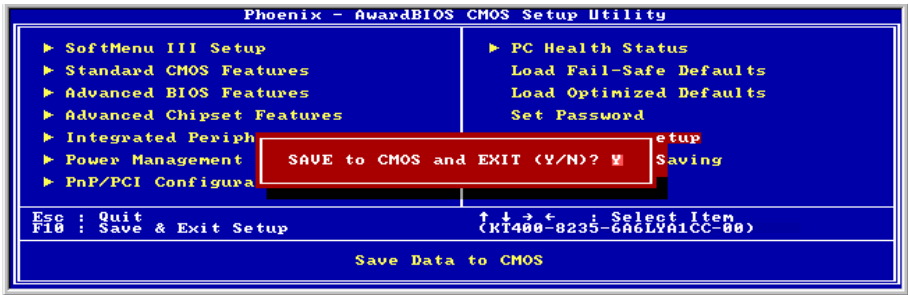
Figure 3-16. Save & Exit Setup Screen Shot

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? **Y**

Pressing "Y" stores the selections made in the menus in CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

3-13. Exit Without Saving
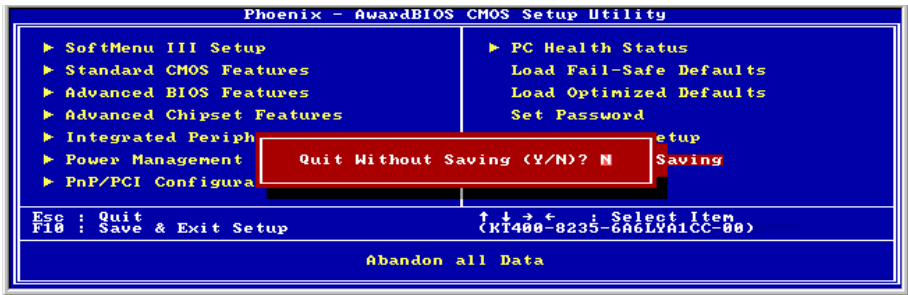
Figure 3-17. Exit Without Saving Screen Shot

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? **Y**

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Appendix A.   Install VIA 4-in-1 Driver

NOTE: Please install this VIA 4-in-1 driver first after having installed the Windows operating system.

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

After entering the installation menu, move your curser to [Driver] tab. Click [VIA 4in1 Driver]. The following screen appears.
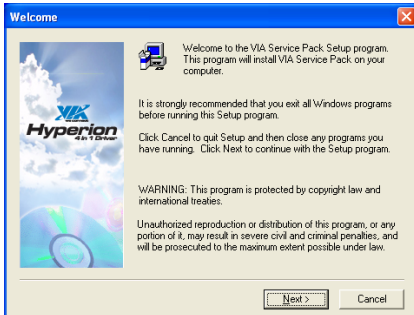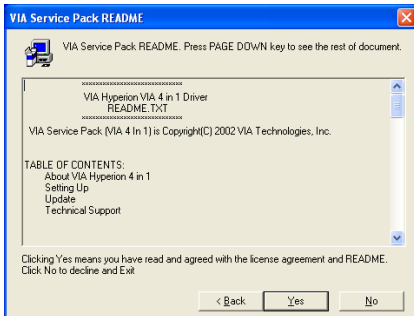
1.   Click [Next].

2.   Click [Yes].

3.   Click [Next].
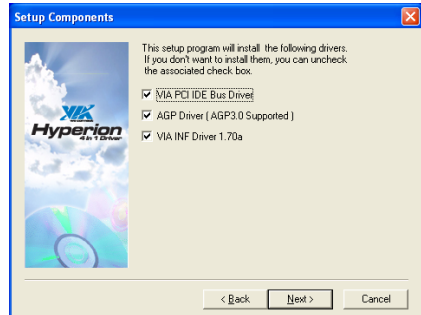
4.   Click [Next].
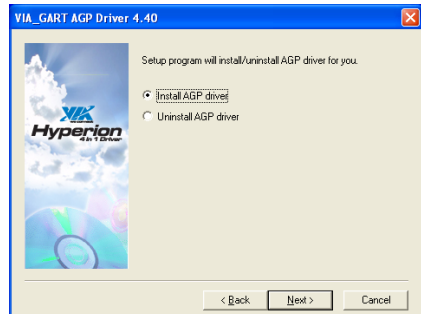
5.   Click [Next].

6. Choose [Yes, I want to restart my computer now.], and click [OK] to complete setup.

Appendix B.   Install Audio Driver

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

After entering the installation menu, move your curser to [Driver] tab. Click [Audio Driver]. The following screen appears.
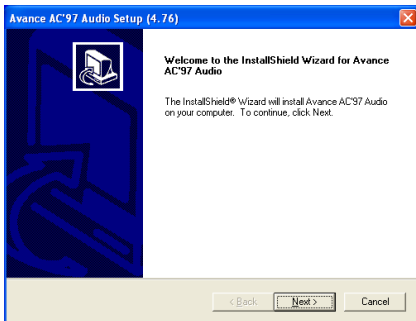
1. Click [Next].

2. Click [Continue Anyway].
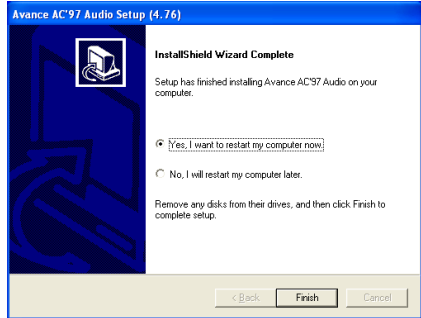
3. Choose [Yes, I want to restart my computer now.], and click [Finish] to complete setup.
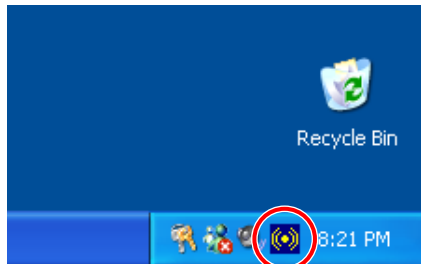
4. After the system restarted, a shortcut icon appears at the right corner of Windows task bar.
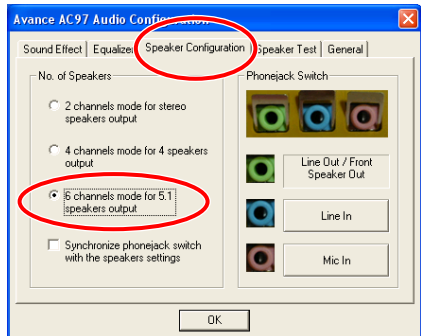
5. In this Speaker Configuration tab, select [6 channels mode for 5.1 speakers output] to enable 6-channel audio system.

> **Note:** To keep a normal operation of 5.1 speakers output, please do not change the settings of "Line In" and "Mic In" in this menu.

6. To run the [AvRack] control panel, click [Start] ➔ [All Programs] ➔ [Avance Sound Manager] ➔ [AvRack].

7. The AvRack control panel with Recorder, Equalizer, and Playist window appears.

Appendix C.   Install LAN Driver

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

For KD7 and KD7-RAID:

After entering the installation menu, move your curser to [Driver] tab. Click [VIA LAN Driver]. The following screen appears.

1. Click [Next].

2. Click [Continue Anyway].

3. Click [Finish] to complete setup.
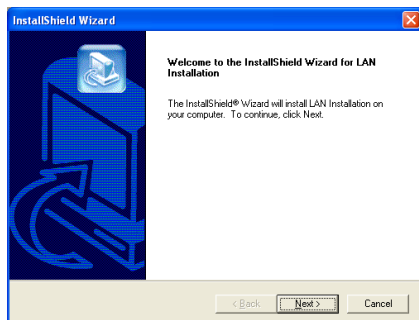
For KD7-S and KD7-B:

After entering the installation menu, move your curser to [Driver] tab. Click [Broadcom 10/100 LAN Driver]. The following screen appears.
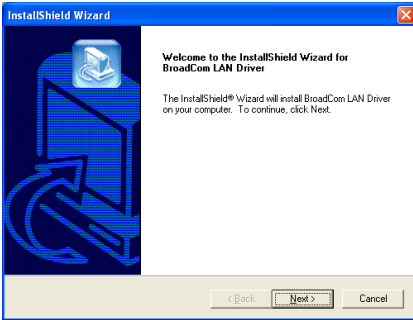
1. Click [Next].

2. Click [Continue Anyway].
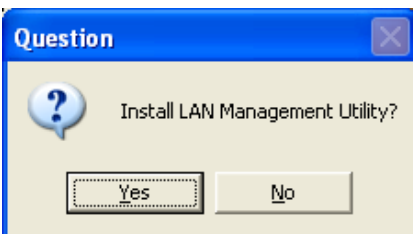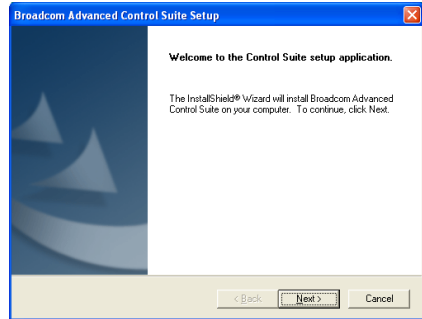
3. Click [Yes].
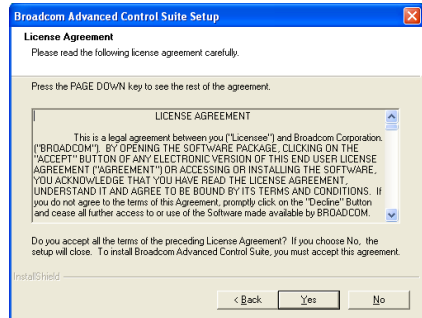
4. Click [Next].

5. Click [Yes].
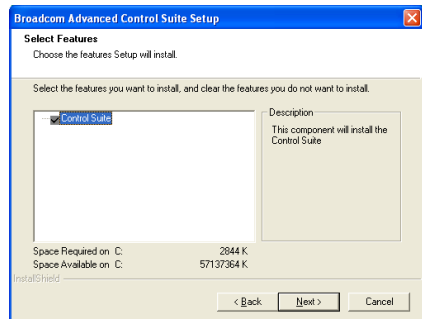
6. Click [Next].
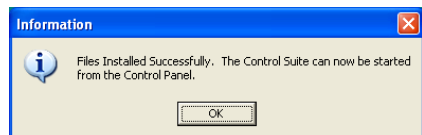
7. Click [OK].
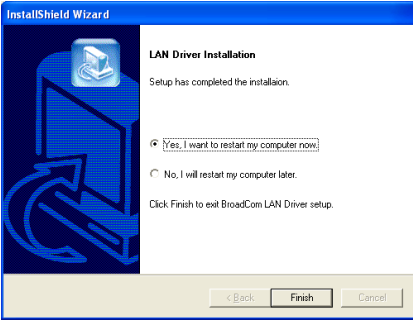
8. Choose [Yes, I want to restart my computer now.], and click [Finish] to complete setup.

Note: In order to enable the WOL (Wake-up On LAN) function for KD7-S and KD7-B model in Windows 2000 and Windows XP, it is necessary to change the value of the "Wake Up Capabilities" property into "Magic Frame". Please refer to the following two steps:

1. After finished the driver installation, check the [Network adapters] in the [Device Manager]. You will find the [Broadcom 440x 10/100 Integrated Controller] is successfully installed.

Select [Broadcom 440x 10/100 Integrated Controller]. Right click your mouse to enter its properties.
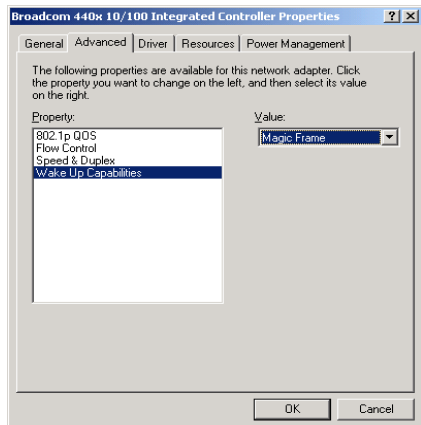
2. Select [Advanced] tab. Move your cursor to select the [Wake Up Capabilities] property option and then set the value option to [Magic Frame]. Click [OK] and restart your computer to complete setup.
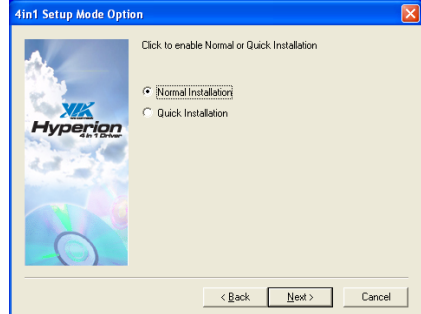
For KD7-G:

After entering the installation menu, move your curser to [Driver] tab. Click [Broadcom Gigabit LAN Driver]. The following screen appears.
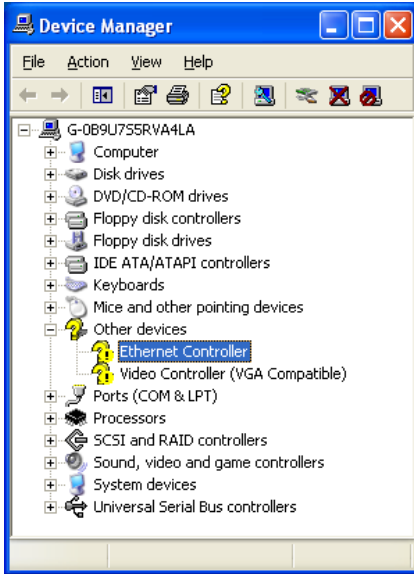
**1.** Check [Device Manager]. Click [Ethernet Controller].
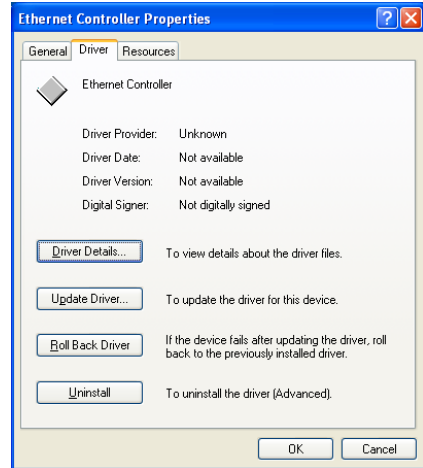
2. Select [Driver] tab in the [Ethernet Controller Properties]. Click [Update Driver].

3. Check [Install from a list or specific location], and then click [Next].
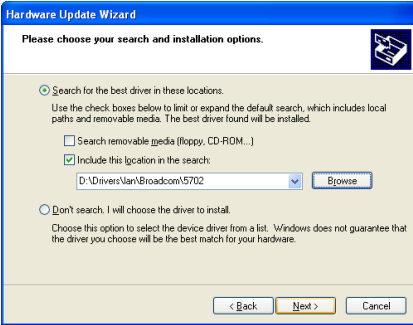
4. Check [Include this location in the search]. Click [Browse] button to locate the driver or type in the path [D:\Drivers\lan\Broadcom\5702]. D: is the CD-ROM drive. Click [Next] to continue.
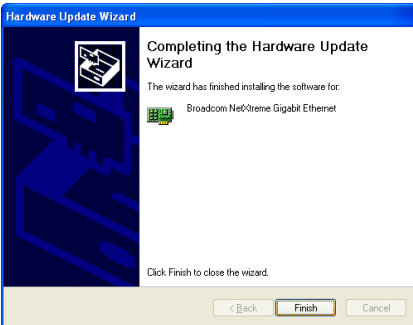
5. Click [Finish].
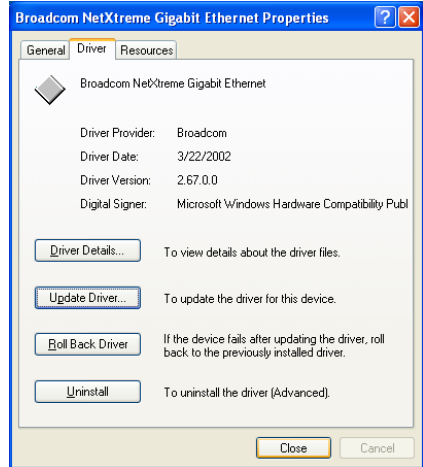
6. Back to the [Ethernet Controller Properties]. Click [Close] to finish driver update.
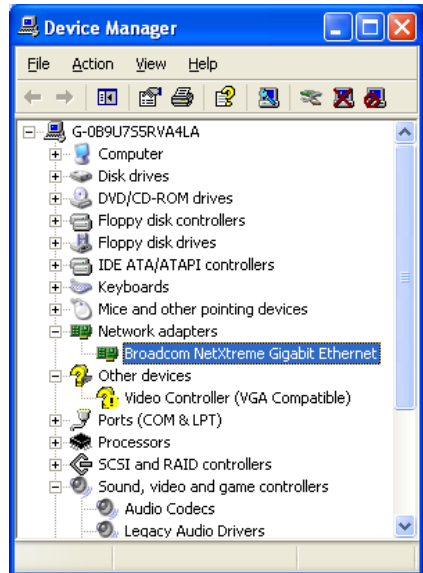
7. Check [Device Manager] again. [Broadcom NetXtreme Gigabit Ethernet] is successfully upgraded.

MEMO

Appendix D.   Install VIA USB 2.0 Driver

NOTE: The final release version of the Microsoft USB 2.0 drivers for Windows XP and Windows 2000 are available at the Windows Update Site. The easiest and surest way to use these drivers is to allow Windows Update to install them automatically. To download and save the new Microsoft USB 2.0 drivers for Windows XP and Windows 2000, use the Microsoft Update Catalog feature of the Windows Update Site at http://v4.windowsupdate.microsoft.com/en/default.asp

There is no need to install VIA USB 2.0 driver for the Windows XP operating system with Service Pack 1 already installed.

Before starting to update the driver, you will have to make your system connected to Internet.

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

After entering the installation menu, move your curser to [Driver] tab. Click [VIA USB 2.0 Driver]. The following screen appears.
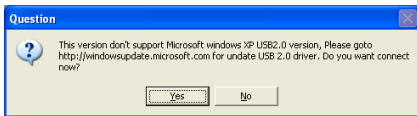
1.   Click [Yes].
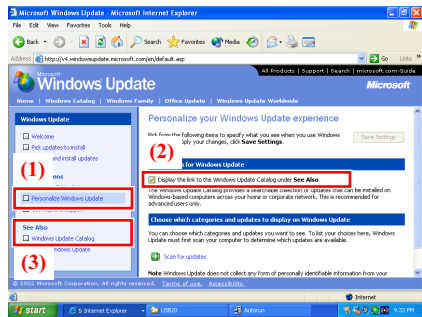
**2.**   (1) Click [Personalize Windows Update]. (2) Check [Display the link to the Windows Update Catalog under See Also]. (3) Click [Windows Update Catalog].
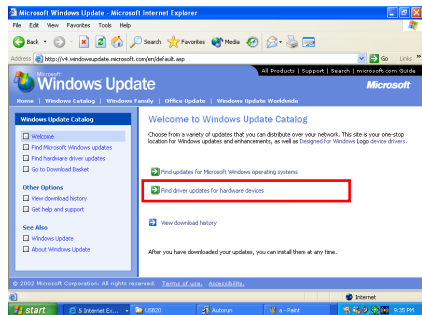
3.   Click [Find driver updates for hardware devices].
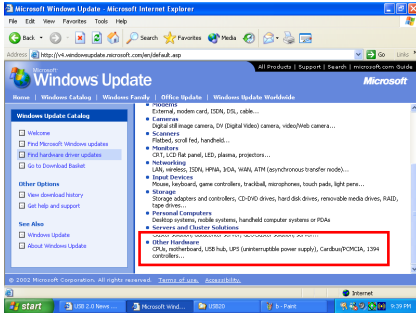
4. Click [Other Hardware].
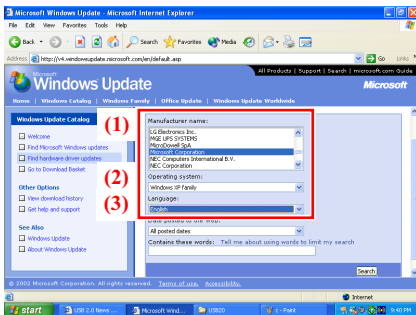
5. (1) Select [Microsoft Corporation] in [Manufacturer name]. (2) Select [Windows XP family] in [Operating system]. (3) Select [English] in [Language]. Click [Search] to continue.
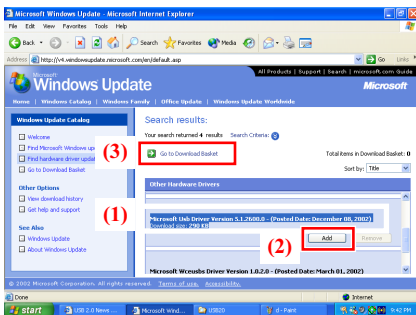
6. (1) Select [Microsoft Usb Driver Version 5.1.2600.0] (as of posted date: Dec. 08, 2002). (2) Click [Add]. (3) Click [Go to Download Basket].
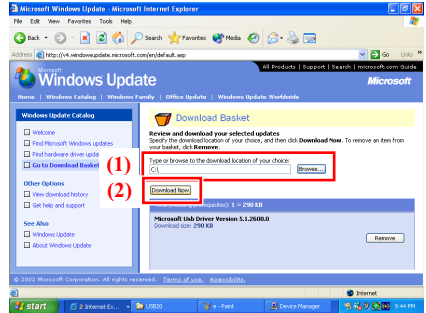
7. Type or browse to the download location of your choice. Click [Download Now].
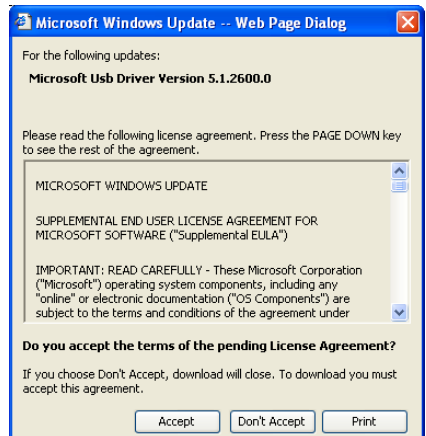
8. Click [Accept].
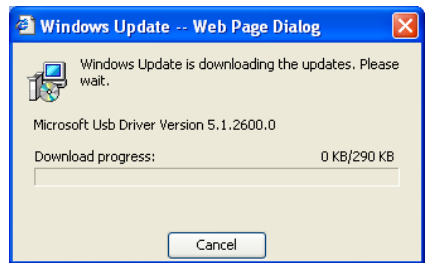
9. The USB driver is being updating now.

Appendix E.   Install Serial ATA RAID Driver (For KD7-G & KD7-S)
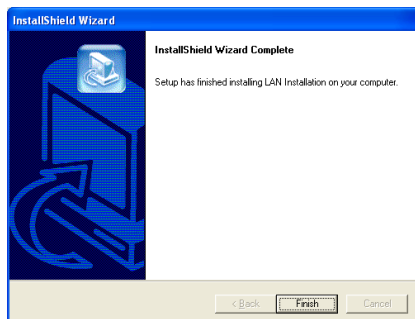
Driver Installation

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

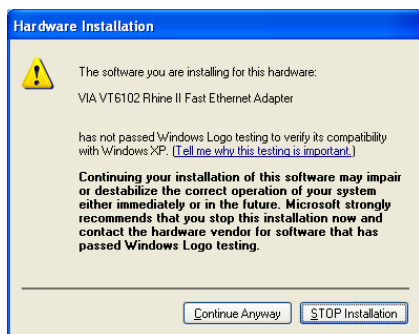After entering the installation menu, move your curser to [Driver] tab. Click [Serial ATA RAID Driver]. The following screen appears.
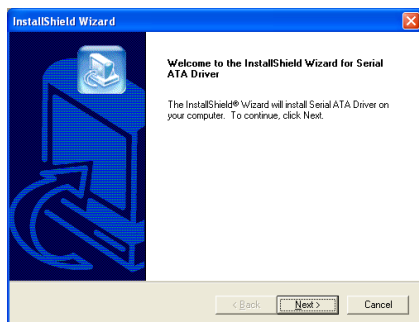
1.   Click [Next].

2.   Click [Continue Anyway].
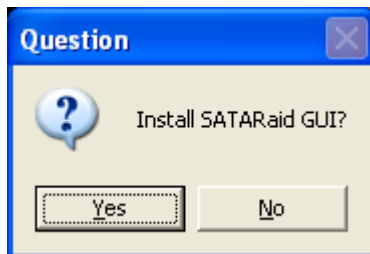
3.   Click [Yes].
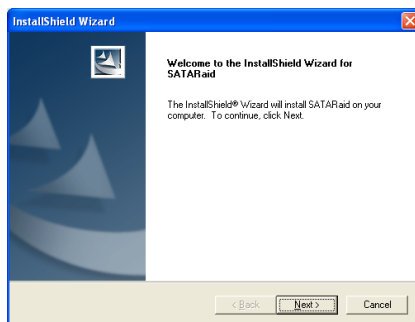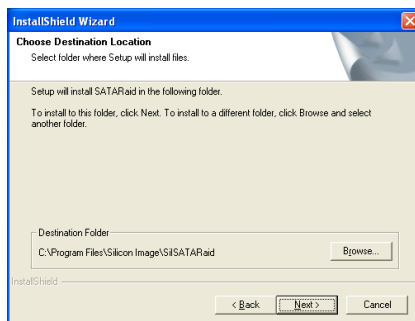
4.   Click [Next].
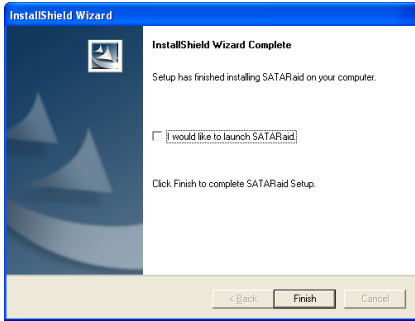
5.   Click [Next].

6. Click [Next].

7. Choose [Yes, I want to restart my computer now.], and click [Finish] to complete setup.

8. Check [Device Manager]. [Silicon Image SiI 3112 SATARaid Controller] is successfully installed.
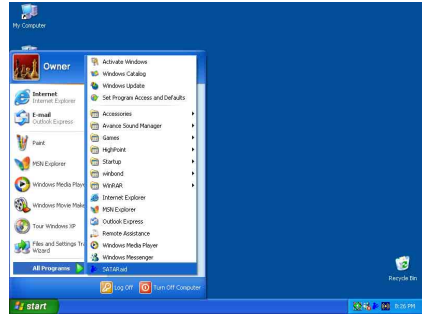
9. To run the [SATARaid] application, click [Start] ➔ [All Programs] ➔ [SATARaid].
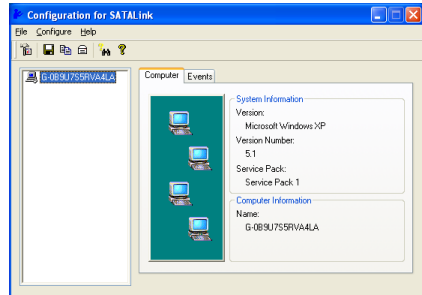
10. This is the SATALink configuration menu. For more information on how to operate, please refer to the "**Help**" menu.

BIOS Setup for Serial ATA RAID

The KD7-S/KD7-G supports Striped (RAID 0) and Mirrored (RAID 1) RAID set. For the striped RAID set, the identical drives can read and write data in parallel to increase performance. The Mirrored RAID set creates a complete backup of your files. Striped and Mirrored RAID set requires 2 hard disks to do so.

RAID Configuration Utility Menu

Main Menu

Reboot your system. Press <*CTRL*> + <*S*> or <*F4*> key while booting up the system to enter the BIOS setting menu. The main menu of BIOS Setting Utility appears as shown below:

```
     RAID Configuration Utility - Silicon Image Inc. Copyright (C) 2002


   Create RAID set
   Delete RAID set
   Rebuild Mirrored set
   Resolve Conflicts




 *  0   PM    Maxtor 33073H3          29312MB
    1   SM    Maxtor 33073H3          29312MB






                                      ↑↓       Select Menu
                                      ESC      Previous Menu
                                      Enter    Select
                                      Ctrl-E   Exit

                                      *        First HDD
```

To select the option in this menu, you may:

- Press < ↑ ↓ > (up, down arrow) to choose the option you want to confirm or to modify.

- Press <**Enter**> to confirm the selection.

- Press <**Esc**> to return to previous menu.

- Press <**Ctrl-E**> to exit the RAID configuration utility.

NOTE: If you want to create a RAID 0 (striping) array, all the data stored in the hard disks will first be erased! Please backup the hard disk data before starting to create the RAID array.

If you want to create a RAID 1 (mirroring) array, please make sure which hard disk is the source disk and which one is the destination disk. If you make a mistake, you may copy the blank data to the source disk, which will result in both hard disks becoming blank!

Option 1 Create RAID set

This item allows you to create a RAID array.

After you had selected the function from the main menu, press the <**Enter**> key to enter the sub menu as shown below:

```
     RAID Configuration Utility - Silicon Image Inc. Copyright (C) 2002


   Create RAID set       ┌──────────┐
   Delete RAID set       │ Striped  │
   Rebuild Mirrored set  │ Mirrored │
   Resolve Conflicts     └──────────┘


 *  0   PM    Maxtor 33073H3          29312MB
    1   SM    Maxtor 33073H3          29312MB






                                      ↑↓       Select Menu
                                      ESC      Previous Menu
                                      Enter    Select
                                      Ctrl-E   Exit

                                      *        First HDD
```

- **Array Mode:**
  This item allows you to select the appropriate RAID mode for the desired array. There are two modes to choose. When you choose a "Striped" or "Mirrored" RAID set, the utility will ask "Are You Sure?" before the Creating RAID process. Press <Y> to confirm.

NOTE: It is highly recommended to attach hard disks with the same model in reaching the RAID performance.

Striping (RAID 0): This item is recommended for **high performance** usage. Requires at least 2 disks.

Mirror (RAID 1): This item is recommended for **data security** usage. Requires at least 2 disks.

Option 2
Delete RAID set

This item allows you to remove a RAID Array on this onboard Serial ATA RAID controller.

NOTE: After you have made and confirmed this selection, all the data stored in the hard disk will be lost. (The entire partition configuration will be deleted too.)

Option 3
Rebuild Mirrored set

This item allows you to rebuild only "Mirrored" RAID set.

You need to check which hard disk is the source disk and which one is the destination disk when you decide to rebuild mirrored RAID set.

Option 4
Resolve Conflicts

When a RAID set is created, the metadata written to the disk includes drive connection information (Primary Channel, Secondary Channel).

If, after a disk failure, the replacement disk was previously part of a RAID set (or used in another system), it may have conflicting metadata, specifically in reference to the drive connection information. If so, this will prohibit the RAID set from being either created or rebuilt.

In order for the RAID set to function properly, this old metadata must be first overwritten with the new metadata. To resolve this, select "Resolve Conflict". The correct metadata, including the correct drive connection information, will then be written to the replacement disk.

NOTE: For more information on RAID function, please refer to the RAID Management Software enclosed in the CD that came packed with this motherboard.

Appendix F.   Install HPT 372 IDE RAID Driver (For KD7-RAID)

Driver Installation

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

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

After entering the installation menu, move your curser to [Driver] tab. Click [HPT 372 IDE RAID Driver]. The following screen appears.
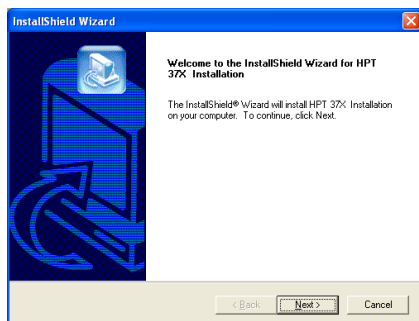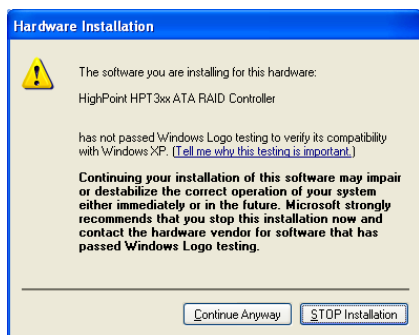

1.   Click [Next].

2.   Click [Continue Anyway] to continue.
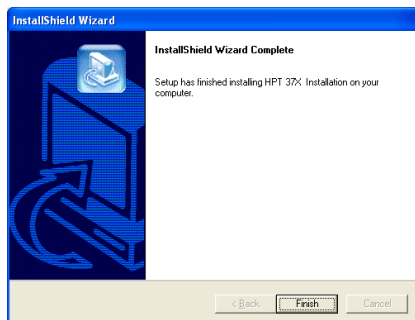
3.   Click [Finish].
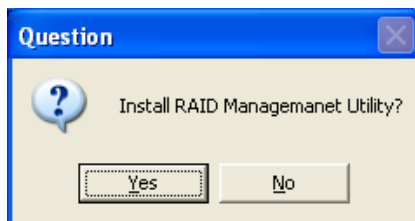
4.   Click [Yes].
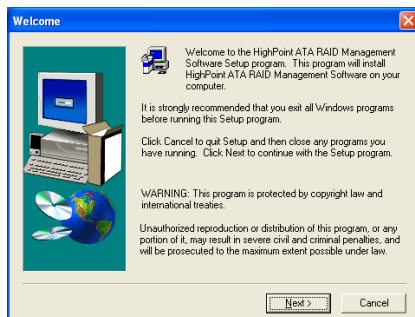
5.   Click [Next].

6.   Click [Yes].
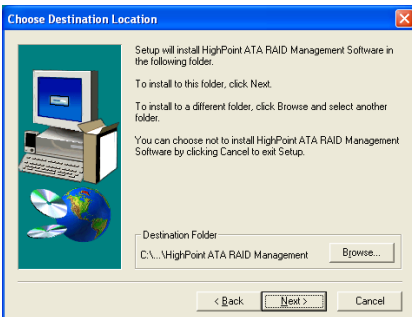
7.   Click [Next].

8.   Click [Next].
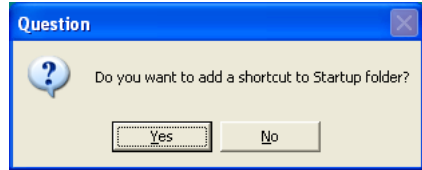
9.   Click [Yes] if you want to add a shortcut to startup folder.
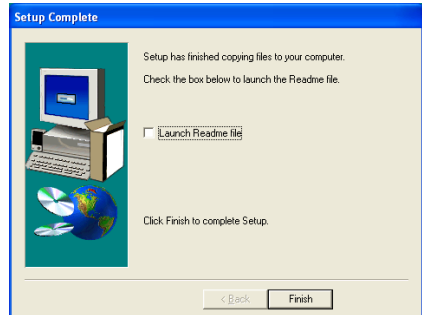
10. Click [Finish] to end the setup.

11. Choose [Yes, I want to restart my computer now.], and click [Finish] to complete setup].

12. To run the [RAID Management Software], click [Start] ➔ [All Programs] ➔ [HighPoint] ➔ [HighPoint ATA RAID Management Software].
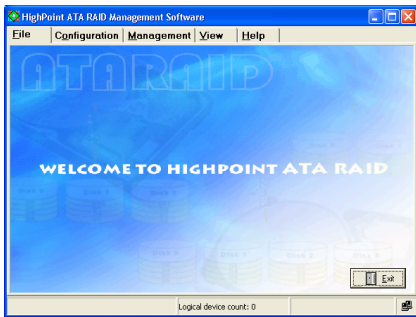
13. The [RAID Management Software] screen pops up.

BIOS Setup for RAID

For further information on RAID concept, you can find it on the "**Technological Terms**" from our WEB site, or you can search the related information on the Internet.

This motherboard supports the RAID operation of "**Striping (RAID 0)**", "**Mirroring (RAID 1)**", or "**Striping/Mirroring (RAID 0+1)**". For the striping operation, the identical drives can read and write data in parallel to increase system performance. The Mirroring operation creates a complete backup of your files. Striping with Mirroring operation offers both read/write performance and fault tolerance.

After completed the installation of HPT37X driver, you have to enable the RAID function in BIOS setup menu. Enter the "**Advanced BIOS Features**" in the BIOS setup menu. Change the settings of "**First Boot Device**", "**Second Boot Device**" and "**Third Boot Device**" to "**ATA133RAID**". See the figure below:

NOTE: The option of "SCSI" cannot be worked as a booting device if this "ATA133RAID" had been selected as booting device, and vice versa.

BIOS Setting Utility

Reboot your system. Press <*CTRL*> and <*H*> key while booting up the system to enter the BIOS setting menu. The main menu of BIOS Setting Utility appears as shown below:

```
               HPT370/372   <BIOS Setting Utility>
 ┌─Menu──────────────────────┐ ┌─Help──────────────────┐
 │ 1. Create RAID            │ │ Create a Disk Array with the │
 │ 2. Delete RAID            │ │ hard disks attached to the │
 │ 3. Rebuild Mirror Array   │ │ HPT370/372              │
 │ 4. Add Spare Disk         │ │                         │
 │ 5. Remove Spare Disk      │ │                         │
 │ 6. Set Disk Mode          │ │                         │
 │ 7. Set Boot Disk          │ │                         │
 │                           │ │ F1:   View Array Status │
 │                           │ │ ↑,↓:  Move to next item │
 │                           │ │ Enter: Confirm the selection │
 │                           │ │ Esc:  Return to top menu │
 └───────────────────────────┘ └─────────────────────────┘
 ┌─Channel Status────────────────────────────────────────┐
 │    Channel          Drive Name      Mode  Size(M)  Status │
 │ Primary Master   ST320414A         UDMA5  19551   HDD0 │
 │ Primary Slave    No Drive                              │
 │ Secondary Master ST320414A         UDMA5  19551   HDD1 │
 │ Secondary Slave  No Drive                              │
 │                                                        │
 └────────────────────────────────────────────────────────┘
 (C)1999-2001. HighPoint Technologies, Inc.
   All rights reserved
```
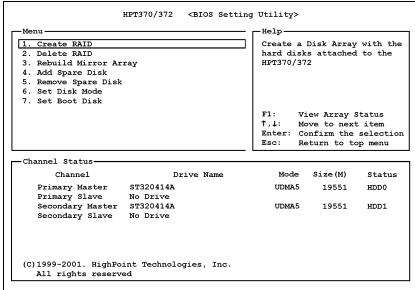
To select the option in this menu, you may:

- Press <**F1**> to view array status.

- Press < ↑ ↓ > (up, down arrow) to choose the option you want to confirm or to modify.

- Press <**Enter**> to confirm the selection.

- Press <**Esc**> to return to top menu.

NOTE: If you want to create a RAID 0 (striping) array or RAID 0+1 array, all the data stored in the hard disks will first be erased! Please backup the hard disk data before starting to create these RAID arrays.

If you want to create a RAID 1 (mirroring) array, please make sure which hard disk is the source disk and which one is the destination disk. If you make a mistake, you may copy the blank data to the source disk, which will result in both hard disks becoming blank!

This item allows you to create a RAID array.

```
               HPT370/372   <BIOS Setting Utility>
 ┌─Menu──────────────────────┐ ┌─Help──────────────────┐
 │ Create New Array  Array #1 │ │ Select RAID mode for the │
 │ 1. Array Mode  Striping (RAID 0) │ │ Disk Array to be created │
 │ 2. Select Disk Drives     │ │                         │
 │ 3. Stripe Size      64K    │ │                         │
 │ 4. Start Creation Process  │ │                         │
 │                           │ │                         │
 │                           │ │ F1:   View Array Status │
 │                           │ │ ↑,↓:  Move to next item │
 │                           │ │ Enter: Confirm the selection │
 │                           │ │ Esc:  Return to top menu │
 └───────────────────────────┘ └─────────────────────────┘
 ┌─Channel Status────────────────────────────────────────┐
 │    Channel          Drive Name      Mode  Size(M)  Status │
 │ Primary Master   ST320414A         UDMA5  19551   HDD0 │
 │ Primary Slave    No Drive                              │
 │ Secondary Master ST320414A         UDMA5  19551   HDD1 │
 │ Secondary Slave  No Drive                              │
 └────────────────────────────────────────────────────────┘
 (C)1999-2001. HighPoint Technologies, Inc.
   All rights reserved
```
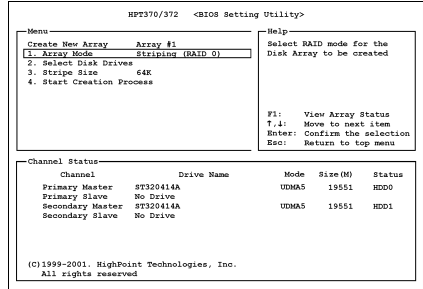
- **Array Mode:**
  This item allows you to select the appropriate RAID mode for the desired array. There are four modes to choose.

NOTE: It is highly recommended to attach hard disks with the same model in reaching the RAID performance.

Striping (RAID 0): This item is recommended for **high performance** usage. Requires at least 2 disks.

Mirror (RAID 1): This item is recommended for **data security** usage. Requires at least 2 disks.

Striping and Mirror (RAID 0+1): This item is recommended for **data security and high performance** usage. Allows Mirroring with a Strip Array. Require 4 disks.

Span (JBOD): This item is recommended for **high capacity without redundancy or performance** features usage. Requires at least 2 disks.

NOTE: When you choose to create RAID 1, and your source disk is not empty, you have to *Duplicate Mirror Disk* to copy data to destination disk. Otherwise, it will only copy the partition table to the destination disk, not the physical date.

- **Select Disk Drives:**
  This item allows you to select the disk drives to be used with the RAID array.

- **Stripe Size:**
  This item allows you to select the stripe size of the RAID array. There are five options: 4K, 8K, 16K, 32K, and 64K.

- **Start Creation Process:**
  After you have made your selection, choose this item and press <Enter> to start creation.

Option 2
Delete RAID
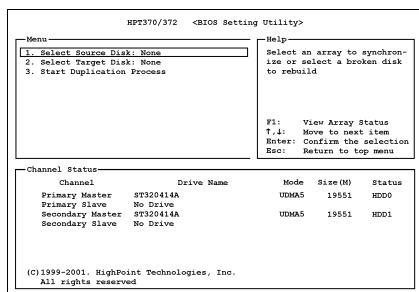
This item allows you to remove a RAID Array on this IDE RAID controller.

NOTE: After you have made and confirmed this selection, all the data stored in the hard disk will be lost. (The entire partition configuration will be deleted too.)

Option 3
Rebuild Mirror Disk

This item allows you to select the disk you wish to rebuild in preparation for a "Mirror Disk Array".

After you have selected the function you want in the main menu, you may press <Enter> key to enter the sub menu as shown below:

```
                HPT370/372  <BIOS Setting Utility>

 ┌─Menu──────────────────────┐ ┌─Help──────────────────┐
 │1. Select Source Disk: None│ │Select an array to synchron-
 │2. Select Target Disk: None│ │ize or select a broken disk
 │3. Start Duplication Process│ │to rebuild
 │                           │ │
 │                           │ │
 │                           │ │F1:    View Array Status
 │                           │ │↑,↓:   Move to next item
 │                           │ │Enter: Confirm the selection
 │                           │ │Esc:   Return to top menu
 └───────────────────────────┘ └───────────────────────┘
 ┌─Channel Status────────────────────────────────────────┐
 │   Channel        Drive Name      Mode   Size(M)  Status│
 │ Primary Master   ST320414A       UDMA5  19551    HDD0  │
 │ Primary Slave    No Drive                              │
 │ Secondary Master ST320414A       UDMA5  19551    HDD1  │
 │ Secondary Slave  No Drive                              │
 │                                                        │
 │ (C)1999-2001. HighPoint Technologies, Inc.             │
 │   All rights reserved                                  │
 └────────────────────────────────────────────────────────┘
```

- **Select Source Disk:**
  This item selects the source disk. The size of source disk must be smaller or equal to the size of target disk.

- **Select Target Disk:**
  This item selects the target disk. The size of target disk must be greater or equal to the size of source disk.

- **Start Duplicating Process:**
  After you had selected this item, the BIOS setting will take up to 30 minutes to run the duplication. Please wait, or you may press <Esc> to cancel.

Option 4
Add Spare Disk

To add the spare disk:

1. Select "4. Add Spare Disk" in the Main Menu, and press <Enter> to confirm.

2. In menu zone of the pop up sub interface, select "1. Select Mirror Array: None" and press <Enter> to confirm.

```
                HPT370/372  <BIOS Setting Utility>

 ┌─Menu──────────────────────┐ ┌─Help──────────────────┐
 │1. Select Mirror Array:  None│ │
 │2. Select Spare Drive:   None│ │
 │                           │ │
 │                           │ │
 │                           │ │F1:    View Array Status
 │                           │ │↑,↓:   Move to next item
 │                           │ │Enter: Confirm the selection
 │                           │ │Esc:   Return to top menu
 └───────────────────────────┘ └───────────────────────┘
 ┌─Channel Status────────────────────────────────────────┐
 │   Channel        Drive Name      Mode   Size(M)  Status│
 │ Primary Master   ST320414A       UDMA5  19551    HDD0  │
 │ Primary Slave    No Drive                              │
 │ Secondary Master ST320414A       UDMA5  19551    HDD1  │
 │ Secondary Slave  No Drive                              │
 │                                                        │
 │ (C)1999-2001. HighPoint Technologies, Inc.             │
 │   All rights reserved                                  │
 └────────────────────────────────────────────────────────┘
```

3. In the validated channel status zone, select the mirror array and press <Enter> to confirm.

4. In the menu zone of the pop up subinterface, select "2. Select Spare Drive: None" and press <Enter> to confirm.

5. In the validated channel status zone, select the spare disk to be added and press <Enter> to confirm.

Option 5
Remove Spare Disk

To remove the spare disk:

1. Select "5. Remove Spare Disk" in the Main Menu, and press <Enter> to confirm.

2. The item "1. Select Mirror Array: None" appears in the menu zone of pop up sub interface.

3. In the validated channel status zone, select the spare disk to be removed and press <Enter> to confirm.

```
                    HPT370/372    <BIOS Setting Utility>
┌─ Menu ─────────────────────┐   ┌─ Help ──────────────────────┐
│  1. Create RAID            │   │  Remove the spare disk from │
│  2. Delete RAID            │   │  Mirror Array               │
│  3. Rebuild Mirror Disk    │   │                             │
│  4. Add Spare Disk         │   │                             │
│  5. Remove Spare Disk      │   │                             │
│  6. Set Disk Mode          │   │                             │
│  7. Set Boot Disk          │   │  F1:     View Array Status  │
│                            │   │  ↑,↓     Move to next item  │
│                            │   │  Enter:  Confirm the selection │
│                            │   │  Esc:    Return to top menu │
└────────────────────────────┘   └─────────────────────────────┘
┌─ Channel Status ───────────────────────────────────────────────┐
│   Channel          Drive Name       Mode     Size(M)   Status  │
│  Primary Master    ST320414A        UDMA5    19551     HDD0    │
│  Primary Slave     No Drive                                     │
│  Secondary Master  ST320414A        UDMA5    19551     HDD1    │
│  Secondary Slave   No Drive                                     │
│                                                                 │
│ (C)1999-2001. HighPoint Technologies, Inc.                     │
│   All rights reserved                                           │
└─────────────────────────────────────────────────────────────────┘
```

Option 6
Set Disk Mode

This item allows you to select transfer mode for hard disk(s).

To set disk mode:

1. Select "6. Set Disk Mode" in the Main Menu, and press <Enter> to confirm.

2. In the Channel Status, select the channel you would like to set and press <Enter>, an asterisk mark appears in the parentheses to indicate that the channel has been selected.

3. Choose the mode from the pop-up menu. You can choose from PIO 0 ~ 4, MW DMA 0 ~ 2, and UDMA 0 ~ 5.

```
                    HPT370/372    <BIOS Setting Utility>
┌─ Menu ─────────────────────┐   ┌─ Help ──────────────────────┐
│  1. Create RAID            │   │  Set the transfer mode for  │
│  2. Delete RAID            │   │  the hard disk(s) attached  │
│  3. Rebuild Mirror Disk    │   │  to the HPT370/372          │
│  4. Add Spare Disk         │   │                             │
│  5. Remove Spare Disk      │   │                             │
│  6. Set Disk Mode          │   │                             │
│  7. Set Boot Disk          │   │  F1:     View Array Status  │
│                            │   │  ↑,↓     Move to next item  │
│                            │   │  Enter:  Confirm the selection │
│                            │   │  Esc:    Return to top menu │
└────────────────────────────┘   └─────────────────────────────┘
┌─ Channel Status ───────────────────────────────────────────────┐
│   Channel          Drive Name       Mode     Size(M)   Status  │
│ (*) Primary Master  ST320414A       UDMA5    19551     HDD0    │
│     Primary Slave   No Drive                                    │
│ ( ) Secondary Master ST320414A      UDMA5    19551     HDD1    │
│     Secondary Slave  No Drive                                   │
│                                                                 │
│ (C)1999-2001. HighPoint Technologies, Inc.                     │
│   All rights reserved                                           │
└─────────────────────────────────────────────────────────────────┘
```

Option 7
Set Boot Disk

This item allows you to select boot disk among hard disk(s).

To set disk mode:

1. Select "7. Set Boot Disk" in the Main Menu, and press <Enter> to confirm.

2. In the Channel Status, select the channel you would like to set as bootable disk and presses <Enter>, an asterisk mark appears in the parentheses to indicate that the channel has been selected.
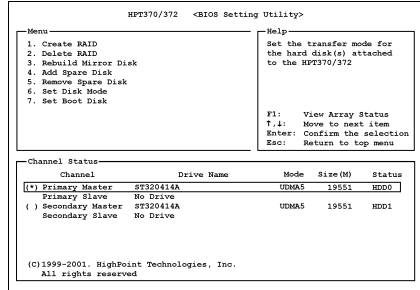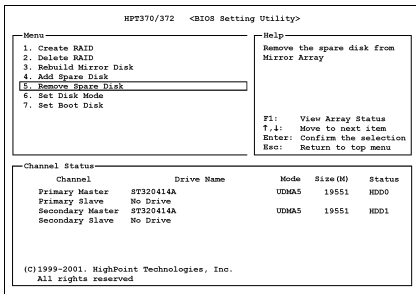
```
                    HPT370/372    <BIOS Setting Utility>
┌─ Menu ─────────────────────┐   ┌─ Help ──────────────────────┐
│  1. Create RAID            │   │  Select the boot disk among │
│  2. Delete RAID            │   │  the hard disk(s) attached to │
│  3. Rebuild Mirror Disk    │   │  the HPT370/372             │
│  4. Add Spare Disk         │   │                             │
│  5. Remove Spare Disk      │   │                             │
│  6. Set Disk Mode          │   │                             │
│  7. Set Boot Disk          │   │  F1:     View Array Status  │
│                            │   │  ↑,↓     Move to next item  │
│                            │   │  Enter:  Confirm the selection │
│                            │   │  Esc:    Return to top menu │
└────────────────────────────┘   └─────────────────────────────┘
┌─ Channel Status ───────────────────────────────────────────────┐
│   Channel          Drive Name       Mode     Size(M)   Status  │
│ (*) Primary Master  ST320414A       UDMA5    19551     HDD0    │
│     Primary Slave   No Drive                                    │
│ ( ) Secondary Master ST320414A      UDMA5    19551     HDD1    │
│     Secondary Slave  No Drive                                   │
│                                                                 │
│ (C)1999-2001. HighPoint Technologies, Inc.                     │
│   All rights reserved                                           │
└─────────────────────────────────────────────────────────────────┘
```

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 bar-code sticker typed with model name and version number on motherboard PCB.

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.

> "00" is the BIOS ID number
>
> " 6A69MA1AC " is the BIOS part number
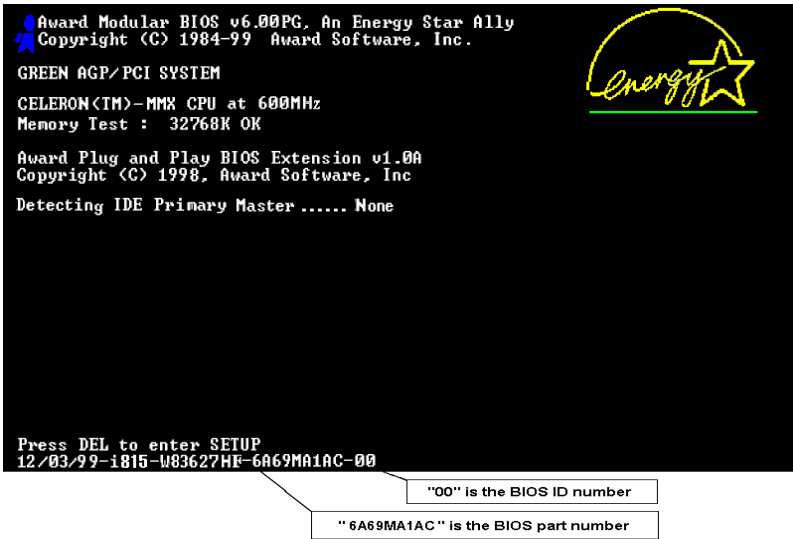
3. Download the correct BIOS file from our Web site.

4. Double click the downloaded file, it will self-extract to [**awdflash.exe**] and [***.bin**] files.

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 [**awdflash.exe**] and the other is the decompressed BIOS binary [***.bin**] file.
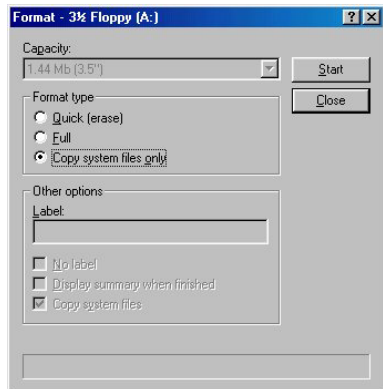
6. Please set the first boot sequence as "**Floppy**" in BIOS and boot off the floppy disk.

```
Phoenix - AwardBIOS CMOS Setup Utility

  ► SoftMenu III Setup            ► PC Health Status
  ► Standard CMOS Features          Load Fail-Safe Defaults
  ► Advanced BIOS Features          Load Optimized Defaults
  ► Advanced Chipset Features       Set Password
  ► Integrated Peripherals          Save & Exit Setup
  ► Power Management Setup          Exit Without Saving
  ► PnP/PCI Configurations

Esc : Quit          F9 : Menu in BIOS      ↑ ↓ → ←   : Select Item
F10 : Save & Exit Setup

              Virus Protection, Boot Sequence...
```

```
Phoenix - AwardBIOS CMOS Setup Utility
                Advanced BIOS Features

 Virus Warning                  Disabled         ▲        Item Help
 CPU L1 & L2 Cache              Enabled
 CPU Hyper-Threading            Enabled          Menu Level  ►
 Quick Power On Self Test       Enabled
 First Boot Device              Floppy           Set the Priority of
 Second Boot Device             HDD-0            the Boot Devices.
 Third Boot Device              CDROM            NOTE: If ATA133 RAID
 Boot Other Device              Enabled          is selected as a boot
 Swap Floppy Drive              Disabled         device, SCSI can not
 Boot Up Floppy Seek            Disabled         be a boot device, and
 Boot Up NumLock Status         On               vice versa.
 Typematic Rate Setting         Enabled
  - Typematic Rate              30 Chars/Sec
  - Typematic Delay             250 Msec
 Security Option                Setup
 APIC Mode                      Enabled
  - MPS Version Ctrl For OS     1.4
 OS Select For DRAM > 64MB      Non-OS2
 Report No FDD For OS           No               ▼

↑↓:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
F5: Previous Values    F6: Fail-Safe Defaults      F7: Optimized Defaults
```

7. Flash the BIOS in pure DOS mode.

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

Note

- We strongly recommend you use the above parameters following 'awdflash' to flash your BIOS. **DO NOT** just type "**awdflash 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' 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. Hardware Monitoring (The Winbond Hardware Doctor Utility)

The Winbond Hardware Doctor is a self-diagnostic system for PCs. 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.

The installation procedures and screen shots in this section are based on Windows XP operating system. For those of other OS, please follow its on-screen instruction.

Insert the Driver & Utility CD into CD-ROM drive, it should execute the installation program automatically. If not, double-click the execution file at the main directory of this CD to enter the installation menu.
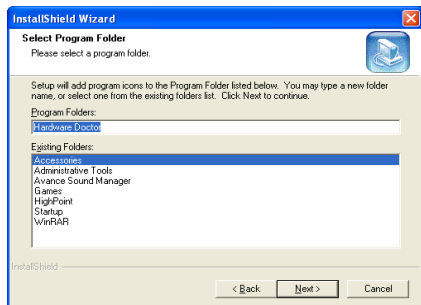
After entering the installation menu, move your curser to [Hardware Doctor] tab. Click [Hardware Doctor]. The following screen appears.
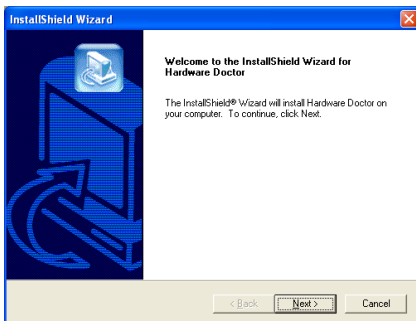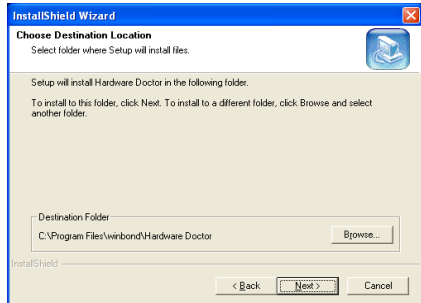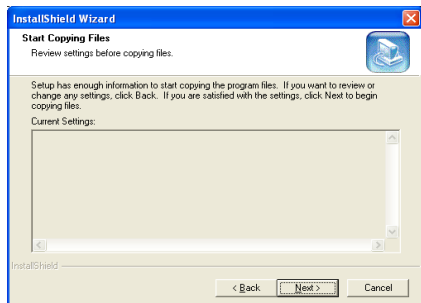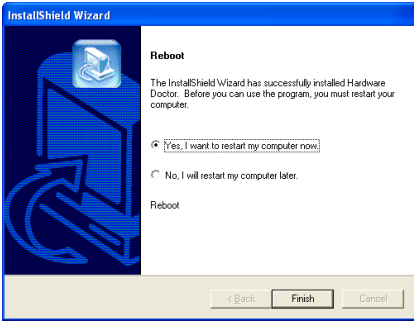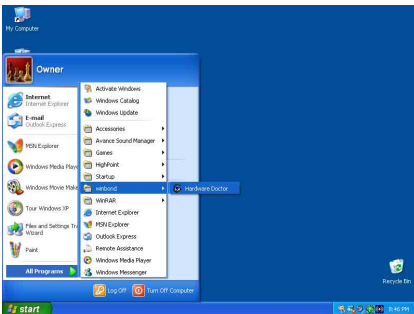

1. Click [Next].

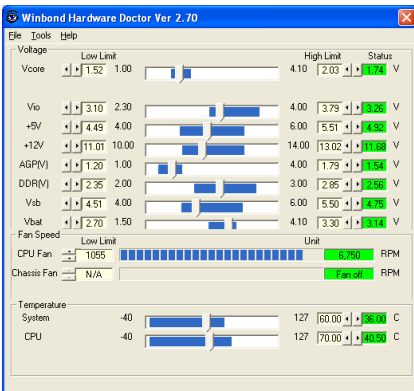**2.** Click [Next].

3. Click [Next].

4. Click [Next].

5. Choose [Yes, I want to restart my computer now.] and click [Finish] to complete setup.
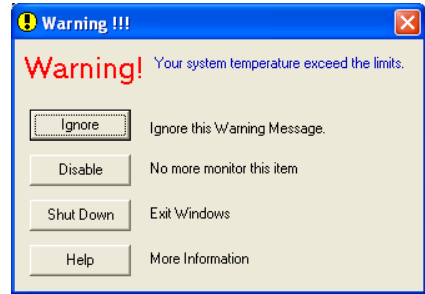

6. Execute the Hardware Doctor by entering the Windows Menu [Start] ➔ [Programs] ➔ [Winbond] ➔ [Hardware Doctor].

7. 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!

8. 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.   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: Why the system failed to boot up and nothing was displayed on the screen after I did some over-clocking or non-standard settings inside the BIOS? Is the motherboard dead? Do I need to return it to where I bought from or go through an RMA process?

A: It should not cause hardware or permanent damage to motherboard when BIOS settings were changed from default to over-clocking or non-standard status.

We suggest the following three troubleshooting methods to discharge CMOS data, recover the hardware default status, and then make the motherboard working again. No need to bother returning the motherboard to where you bought from or go through an RMA process.

Step 1. Switch off the power supply unit and then switch it on again after one minute. If there is no power switch on the power supply unit, disconnect its power cord for one minute and then connect it back.

Press and hold the <Insert> key on the keyboard, press the power-on button to boot up system. If it works, loose the <Insert> key and hit <Del> key to enter the BIOS setup page to do the correct settings.

If the situation remains the same, repeat the procedures in Step 1 for three times, or try Step 2.

Step 2. Switch off the power supply unit or disconnect the power cord. Open the chassis cover. Locate the CCMOS jumper near the button battery. Change the jumper position from default 1-2 to 2-3 for one minute to discharge the CMOS data, and then put it back to default 1-2 position.

Close the chassis and switch on the power supply unit or plug in the power cord. Press the power-on button to boot up system. If it works, hit <Del> key to enter the BIOS setup page to do the correct settings.

If the situation remains the same, try Step 3.

Step 3. The same procedure as Step 2, but in the meantime of discharging the CMOS data, pull out ATX power connectors from motherboard and remove the button battery during CMOS discharging.

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: KD7/KD7-RAID.

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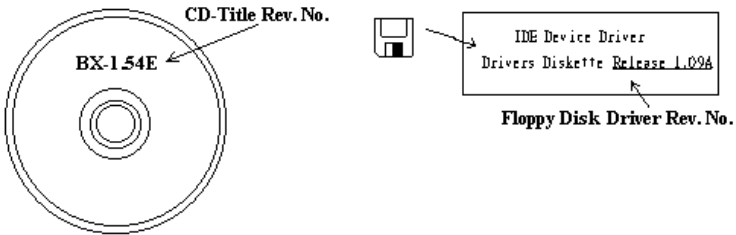
5*. **OS/APPLICATION:** Indicate the operating system and applications you are running on the system.

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.

RAID Troubleshooting

Q & A:

Q: May I use hard drives with different capacity or transfer mode?

A: In order to get optimized performance, we suggest using hard drives with the same model.

Q: How to assign a booting device?

A: You may press <**Ctrl**> <**H**> to assign a booting device in RAID BIOS (See Appendix G for detailed information).

Q: Why can't I see correct capacity in FDISK utility?

A: It's a well-known issue of Windows® 95/98's FDISK utility. If an IBM 75GB hard disk DTLA 307075 only gets 7768MB in Windows® 95/98's FDISK utility, please contact Microsoft® for a latest version of FDISK utility or download IBM's Disk Manager DiskGo! 2.5 to fix it. For windows® 2000, there is no such a 64GB issue.

   http://www.storage.ibm.com/techsup/hddtech/welcome.htm

Q: How to create a striping and mirror array (RAID 0+1)?

A: You need four HDD drives, every two of them on the same channel/cable build a striping array. Then create a mirror array by these two striping arrays (See Appendix G for detailed information).

   1. Press <**Ctrl**> <**H**> to setup configuration

   2. Choose item 1 to Create RAID.

   3. Choose item 1 to set Array Mode as Striping and Mirror (RAID 0+1).

   4. Choose item 2 to Select Disk Drives. There are two striping arrays built automatically and you only have to enter twice.

   5. Choose item 4 to Start Creation Process.

   6. Press <**Esc**> to finish setting and leave RAID BIOS.

Q: How to rebuild a mirror array when one of the drives corrupts?

A: You need to delete previous array setting, duplicate the data, and then rebuild a new array setting (See Appendix G for detailed information).

1. Press <**Ctrl**> <**H**> to setup configuration

2. Choose item 2 to Delete Array.

3. Choose item 3 to Rebuild Mirror Array.

4. Choose sub item 1 to Select Source Disk, the one with data on it.

5. Choose sub item 2 to Select Target Disk, the brand new and empty one.

6. Choose sub item 3 to Start Duplication Process.

7. After duplication process completes, press <**Esc**> to leave RAID BIOS.

Q: Why I see "NO ROM BASIC SYSTEM HALTED" when booting?

A: There isn't any activated primary partition in you system. Please use FDISK or any other utilities to create/set one.

Do & Don't:

1. **Do** always use the same model drives to achieve best quality and performance. Different firmware has different timing characteristic, thus may somewhat decrease the RAID performance.

2. If you have two drives, do connect them on two different channels as master drive please.

3. When attach drives to the RAID card, do make sure the master/slave jumper settings are correct please. If there is only one drive on one channel/cable, do set it as master or single drive.

4. **Do** always use 80 conductor cables please.

5. **Don't** connect any ATAPI devices (CD-ROM, LS-120, MO, ZIP, removable HD etc.) on the RAID card please.

6. For the best performance result, please do use the Ultra DMA 66/100 Hard Disks.

📖 **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 ☐IDE1 ☐IDE2			
CD-ROM-Drive ☐IDE1 ☐IDE2			
System Memory			
ADD-ON CARD			

Problem Description:

_____

_____

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Appendix J. 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 fixes 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:

North America and South America:
ABIT Computer (U.S.A.) Corporation
45531 Northport Loop West,
Fremont, California 94538, U.S.A.
Tel: 1-510-623-0500
Fax: 1-510-623-1092
sales@abit-usa.com
technical@abit-usa.com

U.K. and Ireland:
ABIT Computer (U.K.) Corporation Ltd.
Unit 3, 24-26 Boulton Road,
Stevenage, Herts SG1 4QX, U.K.
Tel: 44-1438-228888
Fax: 44-1438-226333
sales@abitcomputer.co.uk
technical@abitcomputer.co.uk

Germany, Benelux (Belgium, Netherlands, Luxembourg), Denmark, Norway, Sweden, Finland, and Switzerland:
AMOR Computer B.V. (ABIT's European Office)
Van Coehoornstraat 7,
5916 PH Venlo, The Netherlands
Tel: 31-77-3204428
Fax: 31-77-3204420
sales@abit.nl
technical@abit.nl

Austria, Czech, Romania, Bulgaria, Yugoslavia, Slovakia, Slovenia, Croatia, Bosnia and Serbia:
Asguard Computer Ges.m.b.H
Schmalbachstrasse 5,
A-2201 Gerasdorf/wien, Austria
Tel: 43-1-7346709
Fax: 43-1-7346713
asguard@asguard.at

Japan:
ABIT Computer (Japan) Co. Ltd.
Fax: 81-3-5396-5110
http://www.abit4u.jp

Shanghai:
ABIT Computer (Shanghai) Co. Ltd.
Tel: 86-21-6235-1829
Fax: 86-21-6235-1832
http://www.abit.com.cn

Russia:
ABIT Computer (Russia) Corporation Ltd.
Fax: 7 (095) 937 8237
http://www.abit.ru

France:
ABIT Computer France SARL
4, Place La Defense,
92974 Paris La Defense cedex, France
Fax: 33-1-5858-0047
http://www.abit.com.tw

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
Tel: 886-2-8751-8888
Fax: 886-2-8751-3381
sales@abit.com.tw
market@abit.com.tw
technical@abit.com.tw
http://www.abit.com.tw

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:

   HighPoint Technology Inc.'s WEB site: http://www.highpoint-tech.com/
   Intel's WEB site: http://www.intel.com/
   Silicon Image's WEB site: http://www.siimage.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