CERTIFICATE

The TÜV CERT Certification Body
for QM Systems of RWTÜV Systems GmbH

hereby certifies in accordance with TÜV CERT
procedure that

ELITEGROUP COMPUTER SYSTEMS CO., LTD.
ECS MANUFACTURING (SHENZHEN) CO., LTD.
ELITE TECHNOLOGY (SHENZHEN) CO., LTD.

2F, No. 240, Sec. 1, Nei Hu Road, Taipei, Taiwan 114, R.O.C.
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114, R.O.C.
No. 20 & No. 26, Free Trade Zone, Shatoujiao, Shenzhen City, GuangDong Province, China

has established and applies a quality system for

Design, Manufacturing and Sales of Mainboards,
Personal Computers, Notebooks and Peripheral Cards

An audit was performed, Report No.   **2.5-1585/2000**

Proof has been furnished that the requirements according to

ISO 9001 : 2000 / EN ISO 9001 : 2000 / JIS Q 9001 : 2000 / ANSI/ASQC Q9001 : 2000

are fulfilled. The certificate is valid until **27 January 2007**

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

TGA-ZM-30-96-00

Essen, 04.03.2004

RWTÜV

The TÜV CERT Certification Body for QM Systems
of RWTÜV Systems GmbH

CERTIFICATION

S Z E C

ISO14001
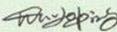# CERTIFICATE

Certificate NO.: 05-2001-065

We hereby certify that

ECS Manufacturing(Shenzhen) Co.,Ltd

by reason of its

Environmental Management System
has been awarded this certificate for
compliance with the standard
ISO14001:1996
The Environmental Management System
applies in the following area:

The manufacture of Mother Board and Peripheral Card and interrelated
management activities of ECS Manufacturing(Shenzhen) Co.,Ltd.
which is located in No.20,Free Trade Zone,Shatuojiao,Shenzhen, P. R.China.

Date of issue: 30th Dec 2001
Date of expiry: 29th Dec 2004
Signed by:

SHENZHEN ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION CENTER

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Table of Contents

Static Electricity Precautions

Static electricity could damage components on this motherboard.
Take the following precautions while unpacking this motherboard
and installing it in a system.

1. Don't take this motherboard and components out of their
    original static-proof package until you are ready to install
    them.
2. While installing, please wear a grounded wrist strap if
    possible. If you don't have a wrist strap, discharge static
    electricity by touching the bare metal of the system chassis.
3. Carefully hold this mainboard by its edges. Do not touch
    those components unless it is absolutely necessary. Put this
    motherboard on the top of static-protection package with
    component side facing up while installing.

Pre-Installation Inspection

1. Inspect this motherboard whether there are any damages to
    components and connectors on the board.
2. If you suspect this motherboard has been damaged, do not
    connect power to the system. Contact your motherboard
    vendor about those damages.

Notice:

1. Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pops out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. Just click the "Continue Anyway" button and go ahead the installation.

2. USB 2.0 Driver Limitations:
   2-1 The USB 2.0 driver only supports Windows XP and Windows 2000.
   2-2 If you connect a USB 2.0 hub to the root hub, plugging USB devices into this hub, the system might not successfully execute certain USB devices' connection because it could not recognize these devices.

Currently, we are working on such limitations' solution. As soon as the solution is done, the updated USB drive will be released to our website: www.pcchips.com.tw for your downloading.

Traduction Fonctions & Check-list

Checklist

- Le paquet de votre carte mère contient les éléments suivants :
- La carte mere
- Le Guide de l'utilisateur
- Un câble nappe pour unité de disquette (optionnel)
- Un câble nappe pour unité IDE
- CD de soutien logiciels

Fonctionnalités

Prise en charge pour processeur Socket-754

- Prise en charge des processeurs AMD **Athlon 64/Sempron**
- Prise en charge de but Front-Side **800 MHz**

La Technologie HyperTransport est une liaison point à point entre deux périphériques, elle permet aux circuits intégrés d'échanger les informations à des vitesses beaucoup plus élevées celles permises par les technologies d'interconnexion actuelles.

Chipset

Ce chipset contient **VIA K8T800 Chipset Family Northbridge** et **VT8237 Southbridge** pour proposer une architecture innovante et adaptable avec des performances et une fiabilité éprouvées.

- Propose une solution à haute intégration pour les postes de travail et PC de bureau hautes performances -- North Bridge hautes performances avec interface HyperTransport pour processeur AMD Athlon 64
- Interface processeur HyperTransport à hautes performances--Interface processeur via l'interface HyperTransport
- Contrôleur de port graphique accéléré (AGP) pleines functions
  --Mode de transfert 8x / 4x compatible AGP v3.0 avec prise en charge Fast W rite
  --Transferts longues rafales à transactions fractionnées en pipeline jusqu'à 1 Go/sec
- Contrôleur hôte haute bande passante V-Link 533 Mo/SecV-- prend en charge les modes de transfert 66MHz, 4x et 8x, interface V-Link avec bande passante totale de 533 Mo/sec
- Prise en charge de système de gestion avancé de l'alimentation -- Compatible ACPI 1.0B et PCI Bus Power Management 1.1
- Flux de données PCI vers mémoire système jusqu'à 132 M-octets/sec (données envoyées à North Bridge par l'intermédiaire de l'interface Ultra V-Link)
- Compatible PCI-2.2, interface PCI 32 bits 3.3V avec entrées tolérantes 5V
- Prise en charge de trois emplacements PCI d'arbitrage et décodage pour toutes les fonctions intégrées et le bus LPC.
- Contrôleur série ATA/RAID double canal—Respecte les spécifications ATA série version 1.0

Prise en charge mémoire

- Deux socles DIMM 184 broches 2.5V pour modules de mémoire DDR SDRAM
- Prise en charge de bus mémoire **DDR400**/333/266
- Mémoire installée maximum de 2 Go

Les emplacements d'extension

- Un emplacement CNR
- Un emplacement **8x** AGP
- Cinq emplacements PCI 32 bits pour l'interface de bus (PCI 2.2 compatible)

Canaux IDE sur carte

- Deux connecteurs IDE
- Prise en charge des modes PIO (Entrées/sorties programmables) et DMA (Accès direct à la mémoire)
- Prise en charge de la maîtrise de bus IDE Ultra DMA avec débits binaires de **133**/100/66 Mo/sec

ATA série

- Deux connecteurs ATA série
- Vitesse de transfert dépassant les meilleurs performances ATA (~150 Mo/s) avec adaptabilité pour des débits plus élevés
- Nombre de broches réduit à la fois pour hôte et périphériques

Codec audio AC'97

- 6 canaux et compatible avec les spécifications Intel AC'97 (VERSION 2.3), respecte les exigences Microsoft PC2001
- Gestion avancée de l'alimentation et capacités d'économie d'énergie.
- Fonction Entrée de ligne stéréo partagée avec sortie Surround.
- Entrée audio CD analogique pseudo-différentielles de qualité supérieure.
- Prise en charge de la sortie S/PDIF : Sortie 96 / 48 kHz avec 24 / 20 / 16 bits
- Technologie d'ajout logiciel de grande valeur : Prise en charge de la plupart des normes industriels pour le son 3D PC et prise en charge de fonction karaoké unique avec écho microphone, décalage de tonalité et annulation vocale.

Ports E/S sur carte

La carte mère possède un jeu complet de connecteurs et de ports E/S :

- Deux ports PS/2 ports pour souris et clavier
- Un port série
- Un port parallèle
- Quatre ports USB2.0 sur le panneau arrière
- Un port LAN (optionnel)
- Prises audio pour microphone, entrée de ligne et sortie de ligne

LAN Fast Ethernet (optionnel)

- **Solution couche physique 100Base-TX/10Base-T** intégrée
- Double vitesse –   100/10 Mbps
- Interface MII pour contrôleur Ethernet et Configuration & État
- Négociation automatique : 10/100, Duplex intégral, Semi-duplex
- Respecte toutes les normes IEEE 802.3, 10Base-T et 100 Base-TX applicables

USB 2.0

- Compatible avec la spécification USB version 2.0
- Compatible avec la spécification d'interface contrôleur hôte avancé d'Intel version 1.0
- Compatible avec la spécification d'interface contrôleur hôte universel version 1.1
- Périphérique PCI multifonctions consiste en deux noyaux **contrôleur hôte UHCI** pour signalisation pleine/basse vitesse et un noyau **contrôleur hôte EHCI** pour

signalisation haute vitesse
- Le hub racine consiste en quatre ports de face en aval avec émetteurs-récepteurs à couche physique intégrée partagée par le contrôleur hôte **UHCI** et **EHCI**, jusqu'à huit ports fonctionnels
- Prise en charge de la spécification d'interface de gestion de l'alimentation de bus PCI version 1.1
- Prise en charge amont pour tous les ports face aval

Remarque: Les caractéristiques matérielles et les éléments logiciels sont susceptibles de modification sans préavis.

Motherboard Benutzerhandbuch

Übersetzung Produkteigenschaften und Checkliste

Checkliste

- Ihre Mainboard-Verpackung enthält die folgenden Teile:
- Das Motherboard
- Das Benutzerhandbuch
- Ein Diskettenlaufwerks-Flachbandkabel (optional)
- Ein IDE-Laufwerks-Flachbandkabel
- Software-CD

Produkteigenschaften

Unterstützt Socket-754 Prozessor

- Unterstützt AMD **Athlon 64/Sempron Prozessoren**
- Unterstützt Front-Side-Bus **800 MHz**

  Die HyperTransport-Technologie ist eine Punkt-zu-Punkt-Verbindung zwischen zwei Geräten. Sie ermöglicht integrierten Schaltungen, Informationen mit wesentlich höheren Geschwindigkeiten auszutauschen als derzeit verfügbare Verbindungstechnologien.

Chipset

Die **VIA K8T800 Chipset Family Northbridge** und **VT8237 Southbridge** in diesem Chipset bieten eine innovative und skalierbare Architektur mit bewährter Zuverlässigkeit und Leistung.

- Definiert hochintegrierte Lösungen für Hochleistungs-Workstations & PC-Desktops -- Hochleistungs-Northbridge mit HyperTransport-Schnittstelle zu AMD Athlon 64 CPU
- Hochleistungs-HyperTransport-CPU-Schnittstelle--Prozessor-Schnittstelle über HyperTransport-Schnittstelle
- Vollwertiger Accelerated Graphics Port (AGP) Controller
  --AGP v3.0-kompatibler 8x- / 4x-Übertragungsmodus mit Unterstützung für schnelles Schreiben
  --Getunnelte Split-Transaction-Long-Burst-Transfers bis zu 1 GB/Sek.
- High Bandwidth 533 MB/Sec V-Link Host Controller -- Unterstützt 66 MHz, 4x- und 8x-Übertragungsmodi, V-Link Hostschnittstelle mit Gesamtbandbreite 533 MB/Sek.
- Unterstützt erweiterte Systemenergieverwaltung -- kompatibel mit ACPI 1.0B und PCI Bus Power Management 1.1
- Datenübertragungsrate PCI zu Systemspeicher von bis zu 132 Mbyte/Sek. (Daten werden über schnelle Ultra V-Link-Schnittstelle zu Northbridge gesendet)
- PCI-2.2-kompatibel, 32-Bit 3.3V PCI-Schnittstelle mit 5V-toleranten Eingängen
- Unterstützt drei PCI-Steckplätze mit Abgleich und Dekodierung für alle integrierten Funktionen und LPC-Bus.
- Dual Channel Serial ATA/RAID Controller—Entspricht Serial ATA Spezifikation Revision 1.0

Speicherunterstützung

- Zwei 184-polige 2.5V DIMM-Sockel für DDR SDRAM Speichermodule
- Unterstützt **DDR400**/333/266 Speicherbus
- Max. installierten Speicher von 2 GB

Erweiterungssteckplätze

- Ein CNR-Steckplatz
- Ein **8x** AGP-Steckplatz
- Fünf 32-Bit PCI-Steckplätze für PCI 2.2-kompatible Busschnittstelle

Onboard-IDE-Kanäle

- Zwei IDE-Anschlüsse
- Unterstützt die Modi PIO (Programmable Input/Output) und DMA (Direct Memory Access)
- Unterstützt IDE Ultra DMA Bus-Mastering mit Übertragungsraten von **133**/100/66 MB/Sek.

Serial ATA

- Zwei Serial-ATA-Anschlüsse
- Übertragungsrate über höchster ATS-Rate (~150 MB/s) mit Skalierbarkeit für höhere Raten
- Low-Pin-Count für Host und Geräte

AC'97 Audio-Codec

- 6 Kanäle und kompatibel mit Intel AC'97 (REV.2.3) Spezifikation, erfüllt Anforderungen von Microsoft PC2001
- Erweiterte Energieverwaltungsfunktionen.
- Stereo-Line-in-Funktion und Surround-Ausgabe.
- Hochqualitativer analoger Pseudodifferential-CD-Audio-Eingang.
- S/PDIF-Ausgabeunterstützung: Ausgang 96 / 48 kHz mit 24 / 20 / 16 Bit
- Nützliche Erweiterungssoftwaretechnologie: Unterstützt die meisten Industrienormen für PC-3D-Sound; einzigartige Karaokefunktion mit Mikrofonhall, Oktavenverschiebung und Stimmausblendung.

Onboard-I/O-Anschlüsse

Das Motherboard verfügt über einen vollständigen Satz Eingänge/Ausgänge und Anschlüsse:

- Zwei PS/2-Anschlüsse für Maus und Tastatur
- Eine serielle Schnittstelle
- Eine parallele Schnittstelle
- Vier hintere USB2.0-Anschlüsse
- Ein LAN-Anschluss (optional)
- Audioanschlüsse für Mikrofon, Line-in und Line-out

Fast Ethernet-LAN (optional)

- Eingebaute **100Base-TX/10Base-T Physical-Layer-Lösung**
- Dual Speed –   100/10 Mbps
- MII-Schnittstelle auf Ethernet-Controller und Konfiguration & Status
- Auto-Negotiation: 10/100, Voll-/Halb-Duplex
- Erfüllt alle gültigen IEEE 802.3, 10Base-T und 100 Base-TX Standards

USB 2.0

- Kompatibel mit Universal Serial Bus Spezifikation Revision 2.0
- Kompatibel mit Intels Enhanced Host Controller Interface Spezifikation Revision 1.0
- Kompatibel mit Universal Host Controller Interface Spezifikation Revision 1.1
- PCI-Multifunktionsgerät, bestehend aus zwei **UHCI-Host-Controller-Cores** für schnelle/langsame Signalübertragung und ein **EHCI-Host-Controller-Core** für Hochgeschwindigkeitssignalübertragung

- Root-Hub besteht aus 4 downstream-gerichteten Anschlüssen mit integrierten Physical-Layer-Transceivern, gemeinsam genützt von **UHCI** und **EHCI** Host Controller, bis zu acht Funktionsanschlüsse
- Unterstützt PCI-Bus Power Management Interface Spezifikation Release 1.1
- Legacy-Support für alle Downstream-Anschlüsse

Hinweis: Hardware- und Software-Spezifikationen gelten vorbehaltlich Änderungen.

Traduzione Caratteristiche & Elenco

Elenco

- La confezione della vostra scheda contiene i seguenti articoli:
- La Scheda Madre
- Il Manuale Utente
- Un cavo piatto per l'unità a disco (opzionale)
- Un cavo piatto per il disco IDE
- CD supporto software

Caratteristiche

Supporta Processore Socket-754

- Supporta processori AMD **Athlon 64/Sempron**
- Supporta Front-Side Bus a **800 MHz**

Tecnologia HyperTransport è un link 'point-to-point' tra due periferiche per attivare circuiti integrati per trasmissioni d'informazioni ad una velocità che supera quella delle altre tecnologie attualmente disponibili.

Chipset

Il chipset dispone di un Chipset **VIA K8T800 Chipset Family Northbridge** e **VT8237 Southbridge** in accordo con una architettura innovative e scalabile che provvede uns affidabilità e una prestazione provati.

- Definisce Soluzioni Ad Alta Integrazione per High-Performance Workstation & design PC Desktop -- North Bridge di Prestazione Alta con interfaccia HyperTransport a CPU AMD Athlon 64
- Interfaccia CPU High Performance HyperTransport—Interfaccia Processore via interfaccia HyperTransport
- Controller Accelerated Graphics Port (AGP) COMPLETO
  --AGP v3.0 compatibile con modalità trasferimento 8x / 4x con Supporto Fast Write
  --Trasferimento split-transaction Pipelined e long-burst fino a 1 GB/sec
- Larghezza di Banda 533 MB/Controller SecV-Link Host -- Supporta 66MHz, Modalità trasferimento 4x e 8x, interfaccia V-Link Host con larghezza di banda totale di 533 MB/sec
- Supporta Advanced System Power Management -- ACPI 1.0B e compatibile con PCI Bus Power Management 1.1
- Streaming dati memoria PCI – sistema fino a 132Mbyte/sec (dati trasmessi a north bridge via interfaccia high speed Ultra V-Link)
- Compatibile con PCI-2.2, interfaccia 32-bit 3.3V PCI con ingressi di tolleranza 5V
- Supporta tre zoccoli PCI di arbitrato e decodifica per tutte funzioni integrate e bus LPC.
- Controller Dual Channel Serial ATA/RAID —Compatibile con Serial ATA Specification Revision 1.0

Supporto Memoria

- Due zoccoli DIMM 184-pin 2.5V per moduli memoria DDR SDRAM
- Supporta bus memoria **DDR400**/333/266
- Memoria installata massima è 2GB

Fessure di Espansione

- Uno zoccolo CNR
- Uno zoccolo **8x** AGP
- Cinque zoccoli PCI 32-bit per bus interfaccia compatibile con PCI 2.2

Canali IDE Onboard

- Due Connettori IDE
- Supporto modalità PIO (Input/Output Programmabile) e DMA (Direct Memory Access)
- Supporto IDE Ultra DMA bus mastering con velocità di trasferimento di **133**/100/66 MB/ sec

ATA Seriale

- Due Connettori ATA Seriali
- Velocità di trasferimento supera il migliore ATA (~150 MB/s) con scalabilità a velocità più alta
- LPC (low pin count) per host e periferie

AC'97 Audio Codec

- 6- canali e compatibile con Intel AC'97 (REV.2.3) Spec, conforme ai requisiti Microsoft PC2001
- Capacità Advanced Power Management e Risparmio energetico.
- Funzione Stereo Line-in assieme con uscita Surround.
- Ingresso analogico CD Audio High quality pseudo-differential.
- Uscita S/PDIF supporta: Output 96 / 48 kHz con 24 / 20 / 16 bit
- Tecnologia software aggiuntivi di valore: Supporta I maggiori standard industriali PC 3D sound e funzione karaoke unica con eco microfono, spostamento dei tasti, e cancellazione vocale.

Porti I/O Onboard

La scheda madre viene con un set completo di porti I/O e connettori:

- Due porti PS/2 per mouse e tastiera
- Una porta seriali
- Una porta parallela
- Quattro porte USB2.0 back-panel
- Una porta LAN (opzionale)
- Spinotti audio per microfono, line-in e line-out

Fast Ethernet LAN (opzionale)

- **100Base-TX/10Base-T Physical Layer solution** incorporato
- Dual Speed – 100/10 Mbps
- Interfaccia MII - Ethernet Controller e Configurazione & Stato
- Auto Negotiation: 10/100, Full/Half Duplex
- Conforme a tutti requisiti applicabili IEEE 802.3, 10Base-T e 100 Base-TX Standards

USB 2.0

- Compatibile con Universal Serial Bus Specification Revision 2.0
- Compatibile con Intel Enhanced Host Controller Interface Specification Revision 1.0
- Compatibile con Universal Host Controller Interface Specification Revision 1.1
- Periferia PCI multi-function consiste in due nuclei **UHCI Host Controller** per massima/minima velocità di segnale e un nucleo **EHCI Host Controller** per massima velocità di segnale

- Root hub consiste in 4 porte downstream con integrated physical layer transceivers condevice dagli Host Controller **UHCI** e **EHCI**, fino a otto porte funzionali
- Supporto PCI-Bus Power Management Interface Specification release 1.1
- Supporto Legacy per tutte le porte downstream

Nota: Le caratteristiche hardware e software sono soggette a variazioni senza preavviso.

Traducción de las características y la lista de comprobación

Lista de comprobación

- El paquete de la placa base contiene los elementos siguientes:
- La placa base
- La Guía de usuario
- Un cable de cinta de la unidad de disquete (opcional)
- Un cable de cinta de la unidad IDE
- CD con el software de soporte

Características

Soporte para procesador de zócalo 754

- Admite procesadores AMD **Athlon 64/Sempron**
- Admite Bus frontal de **800 MHz**

La tecnología HyperTransport es un vínculo punto a punto entre dos dispositivos que permite que los circuitos integrados intercambien información a velocidades infinitamente superiores a las obtenidas por las tecnologías de interconexión disponibles actualmente.

Juego de chips

En este juego de chips encontramos **la Familia de juego de chips VIA K8T800 Northbridge** y **VT8237 Southbridge** siguiendo las pautas de una arquitectura innovadora y escalable con una fiabilidad y rendimiento mejorados.

- Define Soluciones altamente integradas para diseños de estaciones de trabajo y PC de sobremesa de alto rendimiento; North Bridge de alto rendimiento con interfaz HyperTransport a CPU AMD Athlon 64
- Interfaz CPU HyperTransport de alto rendimiento: interfaz del procesador a través de la interfaz HyperTransport
- Controladora de puerto gráfico acelerado con todas sus funciones (AGP) --Compatible con modo de transferencia AGP v3.0 8x / 4x con Soporte Fast Write --Transferencias de transacción dividida de ráfaga larga mediante conducto con velocidades de hasta 1 GB/seg
- Controladora host V-Link con un ancho de banda elevado de 533 MB/Seg: -- admite modos de transferencia de 66MHz, 4x y 8x, interfaz V-Link Host con un ancho de banda total de 533 MB/seg
- Soporte para sistema avanzado de administración de energía: compatible con administración de energía ACPI 1.0B y PCI Bus Power Management 1.1
- Emisión de datos de PCI a memoria de sistema de hasta 132Mbyte/seg (datos enviados a north bridge mediante interfaz Ultra V-Lin de alta velocidad)
- Compatible con PCI-2.2, interfaz PCI de 32 bits 3.3V con entradas tolerantes de 5V
- Admite tres ranuras PCI de arbitraje y decodificación para todas las funciones integradas y bus LPC.
- Controladora ATA/RAID serie de canal dual: cumple con la Especificación ATA serie Revisión 1.0

Soporte de memoria

- Dos zócalos DIMM 2.5V de 184 contactos para módulos de memoria DDR SDRAM
- Admite bus de memoria **DDR400**/333/266
- El máximo de memoria instalada son 2GB

Ranuras de expansión

- Una ranura CNR
- Una ranura **8x** AGP
- Cinco ranuras PCI de 32 bits para interfaz compatible con PCI 2.2

Canales IDE integrados

- Dos conectores IDE
- Admite modos PIO (Entrada/salida programable) y DMA (-acceso directo de memoria)
- Admite Bus maestro IDE Ultra DMA con velocidades de transferencia de **133**/100/66 MB/ seg

ATA de serie

- Dos conectores ATA de serie
- Velocidad de transferencia que excede el mejor ATA (~150 MB/s) con escalabilidad a velocidades más elevadas
- Recuento bajo de contactos tanto para host como para dispositivos

Códec de audio AC'97

- 6 canales y cumple con las Especificaciones Intel AC'97 (REV.2.3), cumple con los requisitos de Microsoft PC2001
- Capacidades de administración de energía avanzada y ahorro de energía.
- Función de entrada de línea estéreo compartida con salida Sorround.
- Entrada de audio CD analógico pseudodiferencial de alta calidad.
- Soporte de salida S/PDIF: Salida de 96 / 48 kHz con 24 / 20 / 16 bits
- Valiosa tecnología de software de complemento: Admite la mayoría de los estándares de la industria para sonido PC 3D y soporte para función exclusiva de karaoke con echo de micrófono, cambio de clave y cancelación vocal.

Puertos I/O en placa

La placa base tiene un conjunto completo de puertos I/O y conectores:
- Dos puertos PS/2 para ratón y de teclado
- Un puerto serie
- Un puerto paralelo
- Cuatro puertos USB2.0 en el panel posterior
- Un puerto LAN (opcional)
- Tomas de audio para micrófono, entrada de línea y salida de línea

Fast Ethernet LAN (opcional)

- **Solución de capa física de 100Base-TX/10Base-T** incorporada
- Velocidad dual: 100/10 Mbps
- Interfaz MII a Controladora Ethernet y Configuración y Estado
- Negociación automática: 10/100, Dúplex completo/medio
- Cumple con todos los estándares aplicables, IEEE 802.3, 10Base-T y 100 Base-TX

USB 2.0

- Cumple con la Especificación de bus de serie universal, Revisión 2.0
- Cumple con la Especificación de Interfaz de controladora Host mejorada de Intel, Revisión 1.0
- Compatible con la Especificación de interfaz de la controladora Host universal, Revisión 1.1
- El dispositivo PCI multifunción consta de dos centros de **controladora Host UHCI** para señales de baja velocidad o velocidad completa y un centro de **controlador**

Host EHCI para señales de alta velocidad
- El concentrador raíz consta de 4 puertos de descenso con transceptores de capa física integrados compartidos por la controladora Host **UHCI** y **EHCI**, hasta ocho puertos funcionales
- Admite la Especificación de administración de energía PCI-BUS, versión 1.1
- Soporte de legado para todos los puertos de descenso

Nota: Las especificaciones de hardware y elementos de software están sujetos a cambios sin previo aviso.

Tradução dos recursos e da lista de verificação

Lista de verificação

- O pacote da placa-mãe contém os seguintes itens:
- A placa-mãe
- O Guia do Usuário
- Um cabo de fita para unidade de disquete (opcional)
- Um cabo de fita para unidade IDE
- CD de suporte de software

Recursos

Suporte a processador para soquete 754

- Suporte a processadores AMD **Athlon 64/Sempron**
- Suporte a Front-Side Bus de **800 MHz**

  A tecnologia HyperTransport é uma ligação ponto a ponto entre dois dispositivo que integra os circuitos para trocar informações a velocidades muito mais altas que as tecnologias de interconexão disponíveis atualmente.

Chipset

Há um **Northbridge da família do chipset VIA K8T800** e **Southbridge VT8237** neste chipset de acordo com a arquitetura inovadora e escalável com confiabilidade e desempenho comprovados.

- Define soluções altamente integradas para designs de PC de mesa e estação de trabalho de alto desempenho -- Northbridge de alto desempenho com interface HyperTransport à CPU AMD Athlon 64
- Interface CPU HyperTransport de alto desempenho--Interface do processador através da interface HyperTransport interface
- Controlador AGP (porta gráfica acelerada) completo
  --Modo de transferência de 8x/4x compatível com AGP v3.0 com suporte a gravação rápida
  --Transferências de transação dividida por pipeline de até 1 GB/s
- Controlador host V-Link com de largura de banda de 533 MB/s -- Suporte aos modos de transferência de 66 MHz, 4x e 8x, interface host V-Link com largura de banda total de 533 MB/s
- Suporte a Advanced System Power Management -- Compatível com ACPI 1.0B e PCI Bus Power Management 1.1
- Fluxo de dados PCI par a memória do sistema de até 132 Mbytes/s (dados enviados ao northbridge através da interface Ultra V-Link de alta velocidade)
- Interface PCI de 32 bits e 3,3 V com entrada tolerante a 5 V compatível com PCI-2.2
- Suporte a três slots PCI de arbitração e decodificação para todas as funções integradas e barramento LPC.
- Controlador RAID/Serial ATA de canal duplo—Compatível com a especificação Serial ATA Revisão 1.0

Suporte de memória

- Dois soquetes DIMM 2,5 V de 184 pinos para módulos de memória DDR SDRAM
- Suporte a barramento de memória **DDR400**/333/266
- Memória máxima instalada is 2 GB

Slots de expansão

- Um slot CNR
- Um slot **8x** AGP
- Cinco slots PCI de 32 bits para interface compatível com PCI 2.2

Canais IDE integrados

- Dois conectores IDE
- Suporte aos modos PIO (entrada/saída programável) e DMA (acesso direto à memória)
- Suporte a barramento IDE Ultra DMA com taxas de transferência de **133**/100/66 MB/s

Serial ATA

- Dois conectores Serial ATA
- Taxas de transferência que excedem bestATA (~150 MB/s) com escalabilidade para taxas mais altas
- Pinagem reduzida para o host e os dispositivos

Codec de áudio AC'97

- Seis canais e compatível com a especificação Intel AC'97 (REV.2.3), atendendo aos requisitos Microsoft PC2001
- Recursos avançados de gerenciamento e economia de energia.
- Função de entrada de linha estéreo com saída surround.
- Entrada analógica de áudio de CD pseudodiferencial de alta qualidade.
- Suporte a saída S/PDIF: Saída de 96 / 48 kHz com 24 / 20 / 16 bits
- Tecnologia de software adicional valiosa: Suporta a maioria dos padrões da indústria de som 3D de pC e suporte a função exclusiva de karaokê com eco de microfone, deslocamento-chave e cancelamento de vocal.

Portas de E/S integradas

A placa-mãe tem um conjunto completo de conectores e portas de E/S:
- Duas portas PS/2 para mouse e teclado
- Uma porta serial
- Uma porta paralela
- Quatro portas USB 2.0 no painel traseiro
- Uma porta LAN (opcional)
- Conectores de áudio para microfone, entrada e saída de linha e

LAN Fast Ethernet (opcional)

- **Solução** integrada **de camada física 100Base-TX/10Base-T**
- Velocidade dupla – 100/10 Mbps
- Interface MII Interface ao controlador Ethernet e Configuração e status
- Negociação automática: 10/100, Full/Half Duplex
- Atende a todos os padrões aplicáveis IEEE 802.3, 10Base-T e 100 Base-TX e

USB 2.0

- Compatível com a especificação Serial Bus revisão 2.0
- Compatível com a especificação Enhanced Host Controller Interface Revisão 1.0 da Intel
- Compatível com a especificação Universal Host Controller Interface Revisão 1.1 da Intel
- O dispositivo PCI multifunção consiste de dois núcleos **UHCI Host Controller** para sinalização de velocidade baixa/total e um núcleo **EHCI Host Controller** para sinalização de alta velocidade

- O hub raiz consiste de quatro portas descendentes com trans-receptores de camada física integrada compartilhadas pelo **UHCI** e **EHCI** Host Controller, até oito portas funcionais
- Suporte à especificação PCI-Bus Power Management Interface edição 1.1
- Suporte legado para todas as portas descendentes

Nota: As especificações do hardware e os itens de software estão sujeitos a alterações sem prévio aviso.

特点和清单译文

清单

- 主板包装内含以下项目：
- 主板
- 用户手册
- 一根磁盘驱动器带状电缆（可选）
- 一根 IDE 驱动器带状电缆
- 软件支持 CD

特点

支持 Socket-754 处理器

- 支持 AMD **Athlon 64/Sempron 处理器**
- 支持 **800 MHz** 前端总线

  HyperTransport 技术是两个设备间的点对点连接，与目前可用的互连技术相比，它能使集成电路以更高的速度交换信息。

芯片组

本芯片组根据创新的可扩展架构，采用 **VIA K8T800 芯片组 Northbridge 芯片**和 **VT8237 Southbridge** 芯片，具有经过证明的可靠性能和表现。

- 适用于高性能工作站和桌面计算机的高度集成的解决方案—带有 HyperTransport 接口的高性能 Northbridge 芯片，连接到 AMD Athlon 64 CPU
- 高性能 HyperTransport CPU 介面 — 经由 HyperTransport 介面的处理器介面
- 性能完善的加速图形接口 (AGP) 控制器
  - 遵循 AGP v3.0 规范的八倍速/四倍速传输模式，支持快速写入
  - 高达 1GB/s 的通道式分离事务长突发传输
- 533MB/s 的高带宽 V-Link 总线控制器 – 支持 66MHz、四倍速和八倍速传输模式，V-Link 总线界面，总带宽 533MB/s
- 支持高级系统电源管理 – 符合 ACPI 1.0B 和 PCI Bus Power Management 1.1 标准
- PCI 到系统内存数据流高达 132MB/s（数据通过高速 Ultra V-link 界面传到 Northbridge 芯片）
- 遵循 PCI-2.2 规范，32 位 3.3 伏 PCI 接口，5 伏容差输入
- 支持三个 PCI 仲裁和解码插槽，带来所有集成功能和 LPC 总线
- 双通道串行 ATA/RAID 控制器 – 符合 Serial ATA Specification Revision 1.0

内存支持

- 两组 184 脚 2.5V DIMM 插槽，使用 DDR SDRAM 内存模块
- 支持 **DDR400**/333/266 内存总线
- 最大安装内存 2GB 扩展槽

扩展槽

- 一个 CNR 插槽
- 一个 **8×** AGP 插槽
- 五个 32 位 PCI 插槽，适用符合 PCI 2.2 标准的总线接口

板载IDE通道

- 两个 IDE 接口
- 支持 PIO（可编程输入/输出）及 DMA（直接内存存取）模式
- 支持传输速率为 **133**/100/66 MB/s 的 IDE Ultra DMA 总线

串行ATA

- 两个串行 ATA 接口
- 传输速度超越最佳的 ATA（~150 MB/s），并可扩展到更高的速度
- 用于主机和设备低引脚数

AC'97音频编码

- 六声道，符合 Intel AC'97 (REC.2.3) 规范，符合 Microsoft PC2001 的要求
- 高级电源管理和省电功能
- 立体声输入功能，共享环绕声输出
- 高品质准差动模拟 CD 音频输入
- 支持 S/PDIF 输出：96/48 kHz 24/20/16 位输出
- 高价值的增强软件技术：支持大多数 PC 3D 工业标准，支持独特的卡拉 OK 功能，有麦克风回声、音阶调整和人声消除功能

板载I/O端口

本主板有全套 I/O 端口和接口
- 两个 PS/2 端口，用于连接鼠标和键盘
- 一个串行端口
- 一个并行端口
- 四个机箱背面的 USB2.0 端口
- 一个 LAN 端口（可选）
- 用于麦克风和线路输入/输出的音频接口

高速以太网LAN（可选）

- 嵌入式 **100Base-TX/10Base-T** 物理层解决方案
- 双速率 – 100/10 Mbps
- 连接到以太网控制器及配置和状态的 MII 接口
- 自适应：10/100，全双工/半双工
- 符合所有适用的 IEEE 802.3、10Base-T 及 100 Base-TX 标准

USB 2.0

- 符合 Universal Serial Bus Specification Revision 2.0
- 符合 Intel Enhanced Host Controller Interface Specification Revision 1.0
- 符合 Universal Host Controller Interface Specification Revision 1.1
- PCI 多功能设备包括两个用于全速/低速信号传输的 **UHCI 主机控制器电缆**，和一个用于高速信号传输的 **EHCI 主机控制器**
- 根集线器包括四个下游端口，带有集成的由 **UHCI** 和 **EHCI** 主机控制器共享的物理

层收发器，多达八个功能端口

- 支持 PCI-Bus Power Management Interface Specification 1.1 版
- 向下兼容所有下游端口

注意：硬件规格和软件可随时变更，不再事先通知。

Chapter 1 Introduction

This motherboard has a **Socket-754** supporting the newest and advanced **AMD Athlon 64/Sempron** with **HyperTransport Technology** processors, Front-Side Bus (FSB) speeds up to **800** MHz and system bus to 1600 MT/s.

This motherboard integrates the **VIA K8T800** Chipset Family Northbridge and **VT8237** Southbridge that supports the **Serial ATA** interface for high-performance and mainstream desktop PCs, and the built-in **USB 2.0** providing higher bandwidth. It implements **Universal Serial Bus Specification Revision 2.0** and is compliant with **UHCI 1.1** and **EHCI 0.95**.

It supports 6-channel **AC'97 Audio Codec** and provides one **IDE Ultra DMA 133**/100/66 channel. It has five 32-bit **PCI** slots, one **8x AGP** slot, one **CNR** (Communications and Networking Riser) slot, and supports the onboard **10BaseT/100BaseTX Network** interface (optional). In addition, this motherboard has a full set of I/O ports including two PS/2 ports for mouse and keyboard, one serial port, one parallel port, one LAN port (optional), three audio jacks for microphone, line-in and line-out, four back-panel **USB2.0** ports and onboard USB headers USB2/USB3 providing extra ports by connecting the Extended USB Module to the motherboard.

This motherboard is an **ATX size** motherboard and has power connectors for an ATX power supply.

Key Features

The key features of this motherboard include:

Socket-754 Processor Support

- Supports AMD **Athlon 64/Sempron** processors
- Supports Front-Side Bus **800 MHz**

HyperTransport Technology is a point-to-point link between two devices, it enables integrated circuits to exchange information at much higher speeds than currently available interconnect technologies.

Chipset

There are **VIA K8T800 Chipset Family Northbridge** and **VT8237 Southbridge** in this chipset in accordance with an innovative and scalable architecture with proven reliability and performance.

- Defines Highly Integrated Solutions for High-Performance Workstation & PC Desktop Designs -- High-performance North Bridge with HyperTransport interface to AMD Athlon 64 CPU
- High Performance HyperTransport CPU Interface -- Processor interface via HyperTransport interface
- Full Featured Accelerated Graphics Port (AGP) Controller
  -- AGP v3.0 compliant 8x / 4x transfer mode with Fast Write Support
  -- Pipelined split-transaction long-burst transfers up to 1 GB/sec
- High Bandwidth 533 MB/Sec V-Link Host Controller -- Supports 66MHz, 4x and 8x transfer modes, V-Link Host interface with total bandwidth of 533 MB/sec
- Advanced System Power Management Support -- ACPI 1.0B and PCI Bus Power Management 1.1 compliant

- PCI to system memory data streaming up to 132Mbyte/sec (data sent to north bridge via high speed Ultra V-Link interface)
- PCI-2.2 compliant, 32-bit 3.3V PCI interface with 5V tolerant inputs
- Support three PCI slots of arbitration and decoding for all integrated functions and LPC bus.
- Dual Channel Serial ATA/RAID Controller—Complies with Serial ATA Specification Revision 1.0

Memory Support

- Two 184-pin 2.5V DIMM sockets for DDR SDRAM memory modules
- Supports **DDR400**/333/266 memory bus
- Maximum installed memory is 2GB

Expansion Slots

- One CNR slot
- One **8x** AGP slot
- Five 32-bit PCI slots for PCI 2.2-compliant bus interface

Onboard IDE channels

- Two IDE Connectors
- Supports PIO (Programmable Input/Output) and DMA (Direct Memory Access) modes
- Supports IDE Ultra DMA bus mastering with transfer rates of **133**/100/66 MB/sec

Serial ATA

- Two Serial ATA Connectors
- Transfer rate exceeding best ATA (~150 MB/s) with scalability to higher rates
- Low pin count for both host and devices

AC'97 Codec

- 6- channel and compliant with Intel® AC'97 (REV. 2.3) Spec, meeting with Microsoft® PC2001 requirements
- Advanced power management and power saving capabilities.
- Stereo Line-in function shared with Surround out.
- High quality pseudo-differential analog CD Audio input.
- S/PDIF Output support: Output 96 / 48 kHz with 24 / 20 / 16 bits
- Valuable add-on software technology: Support most industry standards of PC 3D sound and unique karaoke function support featured with microphone echo, key shifting, and vocal cancellation.

Onboard I/O Ports

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One serial port
- One parallel port
- Four back-panel USB2.0 ports
- One LAN port (optional)
- Audio jacks for microphone, line-in and line-out

Fast Ethernet LAN (optional)

- Built-in **100Base-TX/10Base-T Physical Layer solution**
- Dual Speed – 100/10 Mbps
- MII Interface to Ethernet Controller and Configuration & Status
- Auto Negotiation: 10/100, Full/Half Duplex
- Meet All applicable IEEE 802.3, 10Base-T and 100 Base-TX Standards

USB 2.0

- Compliant with Universal Serial Bus Specification Revision 2.0

- Compliant with Intel's Enhanced Host Controller Interface Specification Revision 1.0
- Compliant with Universal Host Controller Interface Specification Revision 1.1
- PCI multi-function device consists of two **UHCI Host Controller** cores for full-/low-speed signaling and one **EHCI Host Controller** core for high-speed signaling
- Root hub consists 4 downstream facing ports with integrated physical layer transceivers shared by **UHCI** and **EHCI** Host Controller, up to eight functional ports
- Support PCI-Bus Power Management Interface Specification release 1.1
- Legacy support for all downstream facing ports

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters and memory timing
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

Dimensions

- ATX form factor of 305 x 210 mm

> **Note**: Hardware specifications and software items are subject to change without notification.

Package Contents

Your motherboard package ships with the following items:

- ❑ The motherboard
- ❑ The User's Guide
- ❑ One diskette drive ribbon cable (optional)
- ❑ One IDE drive ribbon cable
- ❑ The Software support CD

Optional Accessories

You can purchase the following optional accessories for this motherboard.

- ❑ The Extended USB module
- ❑ The CNR v.90 56K Fax/Modem card
- ❑ The Serial ATA cable
- ❑ The Serial ATA power cable

Note: You can purchase your own optional accessories from the third party, but please contact your local vendor on any issues of the specification and compatibility.

Chapter 2 Motherboard Installation

To install this motherboard in a system, please follow these instructions in this chapter:

- ❑ Identify the motherboard components
- ❑ Install a CPU
- ❑ Install one or more system memory modules
- ❑ Make sure all jumpers and switches are set correctly
- ❑ Install this motherboard in a system chassis (case)
- ❑ Connect any extension brackets or cables to headers/ connectors on the motherboard
- ❑ Install peripheral devices and make the appropriate connections to headers/connectors on the motherboard

Note:
1. Before installing this motherboard, make sure jumper CLR_CMOS is under Normal setting. See this chapter for information about locating CLR_CMOS and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the motherboard.

Motherboard Components
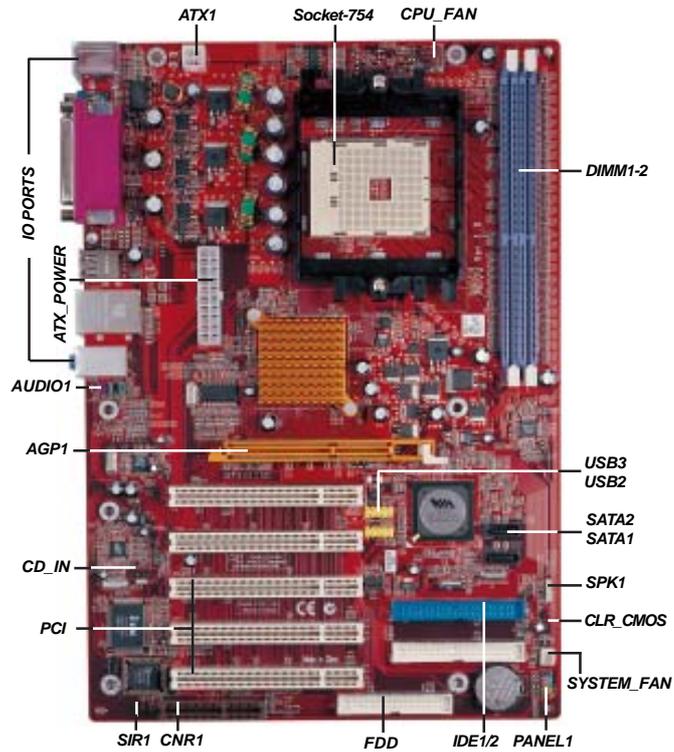
LABEL	COMPONENTS
DIMM1--2	Two 184-pin DDR SDRAM sockets
IDE1/2	Primary/Secondary IDE connectors
FDD	Floppy Disk Drive connector
SATA1/2	Serial ATA connectors
ATX1	Standard 4-Pin ATX Power connector
ATX_POWER	Standard 20-Pin ATX Power connector
PANEL1	Front Panel Switch/LED header
CPU_FAN	CPU Fan connector
SYS_FAN	System Fan connector
CLR_CMOS	Clear CMOS jumper
USB2/3	Front Panel USB headers
SPK1	Speaker header

LABEL	COMPONENTS
SIR1	Infrared header
CD_IN	Analog Audio Input header
AUDIO1	Front Panel Audio header
PCI 1-5	32-bit PCI slots
CNR1	Communications Networking Riser slot
AGP1	Accelerated Graphics Port slot

I/O Ports

The illustration below shows a side view of the built-in I/O ports on the motherboard.
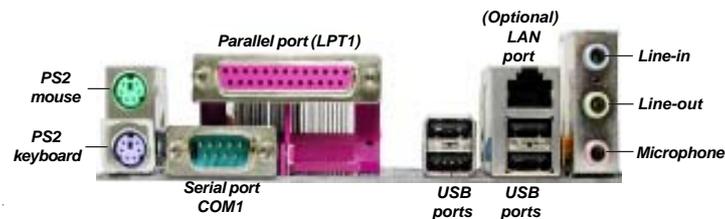
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use these three audio jacks to connect audio devices. The first jack is for stereo Line-In signal, the second jack for stereo Line-Out signal, and the third jack for Microphone.

Installing the Processor

This motherboard has a Socket 754 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

Follow these instructions to install the CPU:

Socket-754

pin1

CPU_FAN
1
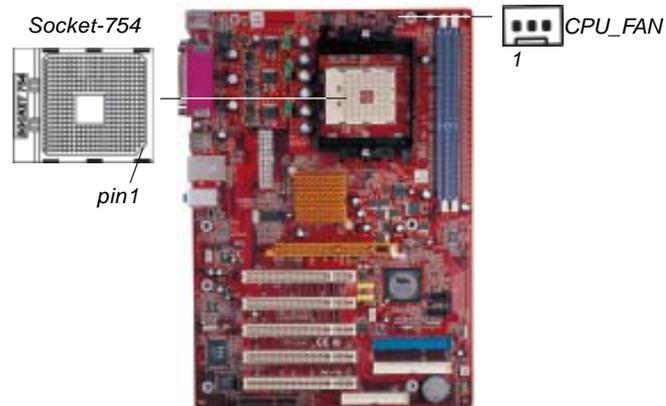
1. Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.

2. Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.

10
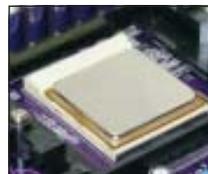
3   Push the locking lever down and hook it under the latch on the edge of socket.
4   Apply thermal grease to the top of the CPU.
5   Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6   Plug the CPU fan power cable into the CPU fan connector (CPU_FAN) on the motherboard.

Installing Memory Modules

This motherboard accommodates two 184-pin 2.5V DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR400/** 333/266 memory modules (Double Data Rate SDRAM), and maximum 2.0 GB installed memory.

DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. DDR DIMMs can synchronously work with 166 MHz or 200 MHz memory bus.

DDR SDRAM provides 2.1 GB/s, 2.7 GB/s or 3.2GB/s data transfer rate when the bus is 133 MHz, 166 MHz or 200 MHz, respectively.

DIMM1   *DIMM2*

11
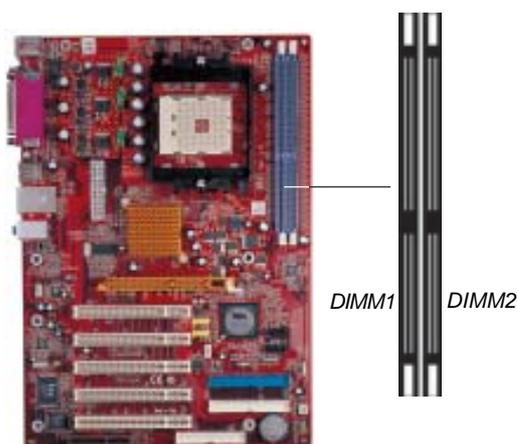
Memory Module Installation Procedure

These modules can be installed with up to 2 GB system memory. Refer to the following to install the memory module.

1. Push down the latches on both sides of the DIMM socket.
2. Align the memory module with the socket. There is a notch on the DIMM socket that you can install the DIMM module in the correct direction. Match the cutout on the DIMM module with the notch on the DIMM socket.

3. Install the DIMM module into the socket and press it firmly down until it is seated correctly. The socket latches are levered upwards and latch on to the edges of the DIMM.

4. Install any remaining DIMM modules.

Jumper Settings

Connecting two pins with a jumper cap is SHORT; removing a jumper cap from these pins, OPEN.

CLR_CMOS

1
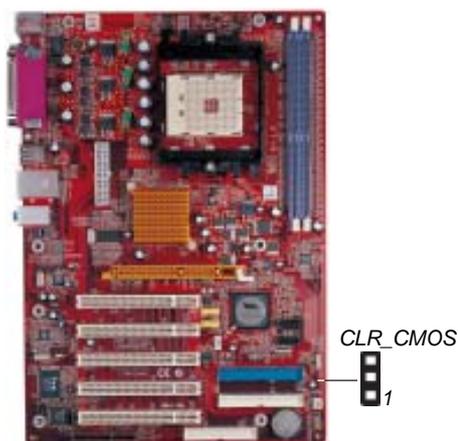
CLR_CMOS: Clear CMOS Jumper

Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your motherboard from operating. To clear the CMOS memory, disconnect all the power cables from the motherboard and then move the jumper cap into the CLEAR setting for a few seconds.

Function	Jumper Setting
Normal	Short Pins 1-2
Clear CMOS	Short Pins 2-3

Install The Motherboard

Install the motherboard in a system chassis (case). The board is a ATX size motherboard. You can install this motherboard in an ATX case. Make sure your case has an I/O cover plate matching the ports on this motherboard.

Install the motherboard in a case. Follow the case manufacturer's instructions to use the hardware and internal mounting points on the chassis.
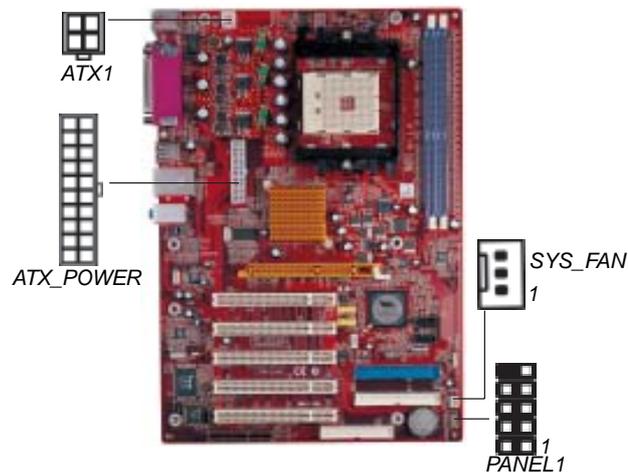
Connect the power connector from the power supply to the **ATX_POWER** connector on the motherboard. **ATX1** is a +12V connecotr for CPU Vcore power.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYS_FAN** fan power connector on the motherboard.

Connect the case switches and indicator LEDs to the **PANEL1** header.

Here is a list of the PANEL1 pin assignments.

Pin	Signal	Pin	Signal
1	HD_LED_P	2	FP PWR/SLP
3	HD_LED_N	4	FP PWR/SLP
5	RESET_SW_N	6	POWER_SW_P
7	RESET_SW_P	8	POWER_SW_N
9	RSVD_DNU	10	KEY

Connecting Optional Devices

Refer to the following for information on connecting the
motherboard's optional devices:

15
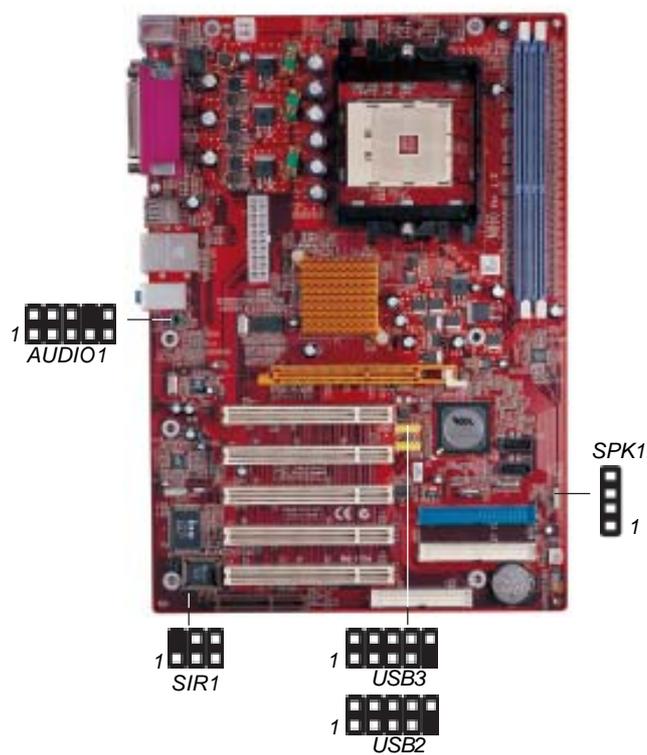
SPK1: Speaker Headerr

Connect the cable from the PC speaker to the SPK1 header on the motherboard.

Pin	Signal	Pin	Signal
1	SPKR	2	NC
3	GND	4	+5V

AUDIO1: Front Panel Audio Header

This connector allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal	Pin	Signal
1	AUD_MIC	2	AUD_GND
3	AUD_MIC_BIAS	4	AUD_VCC
5	AUD_FPOUT_R	6	AUD_RET_R
7	HP_ON	8	KEY
9	AUD_FPOUT_L	10	AUD_RET_L

USB2/USB3: Front panel USB Header

The motherboard has USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB headers USB2/USB3 to connect the front-mounted ports to the motherboard.

Pin	Signal	Pin	Signal
1	VERG_FP_USBPWR0	2	VERG_FP_USBPWR0
3	USB_FP_P0-	4	USB_FP_P1-
5	USB_FP_P0+	6	USB_FP_P1+
7	GROUND	8	GROUND
9	KEY	10	USB_FP_OC0

1. Locate the USB2/USB3 header on the motherboard.
2. Plug the bracket cable onto the USB2/USB3 header.
3. Remove a slot cover from one of the expansion slots on the system chassis. Install an extension bracket in the opening. Secure the extension bracket to the chassis with a screw.

SIR1: Infrared Port Header

The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal	Pin	Signal
1	NC	2	KEY
3	+5V	4	GND
5	IRTX	6	IRRX

1. Locate the infrared port-**SIR1** header on the motherboard.
2. If you are adding an infrared port, connect the ribbon cable from the port to the SIR1 header and then secure the port to an appropriate place in your system chassis.

Install Other Devices

Install and connect any other devices in the system following the steps below.

17
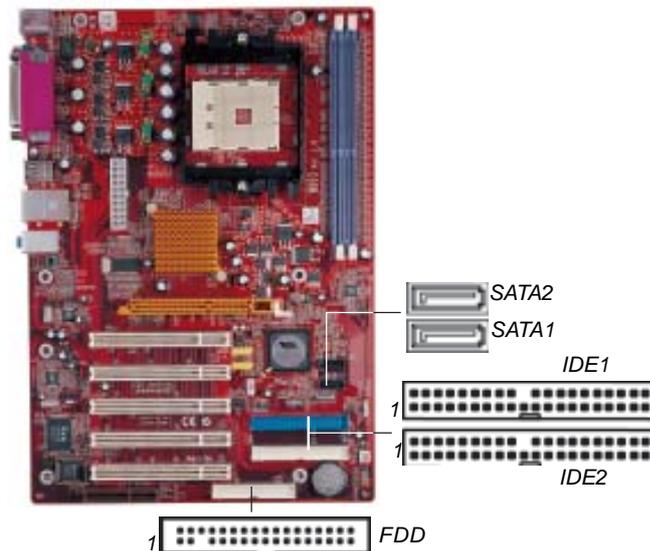
Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB.

Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FDD**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.

The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.

Install the device(s) and connect power from the system power

supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the motherboard.

If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the motherboard. If you have two devices on the cable, one must be Master and one must be Slave.

Serial ATA Devices

The **Serial ATA (Advanced Technology Attachment)** is the standard interface for the IDE hard drives, which is designed to overcome the design limitations while enabling the storage interface to scale with the growing media rate demands of PC plat-

forms. It provides you a faster transfer rate of **150 MB/s**. If you have installed a Serial ATA hard drive, you can connect the Serial ATA cables to the Serial ATA hard drive or the connecter on the motherboard.

On the motherboard, locate the Serial ATA connectors **SATA1-2**, which support new Serial ATA devices for the highest data transfer rates, simpler disk drive cabling and easier PC assembly.

It eliminates limitations of the current Parallel ATA interface, but maintains register compatibility and software compatibility with Parallel ATA.

Analog Audio Input Header

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.
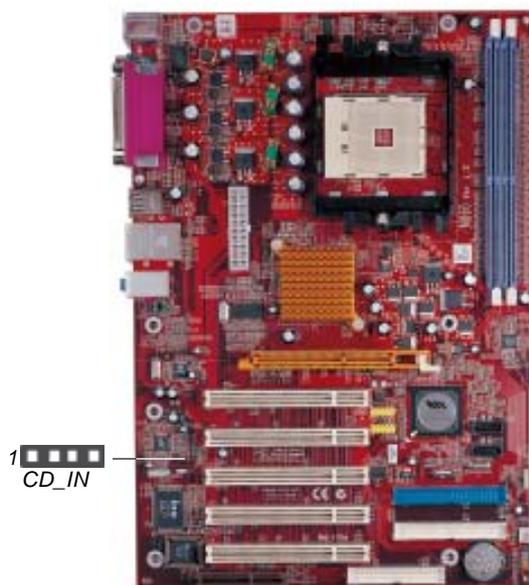
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin connector **CD_IN**.

Pin	Signal
1	CD IN L
2	GND
3	GND
4	CD IN R

Expansion Slots

This motherboard has one AGP, one CNR and five 32-bit PCI slots.

AGP1

PCI1

PCI2

PCI3

PCI4

PCI5

CNR1
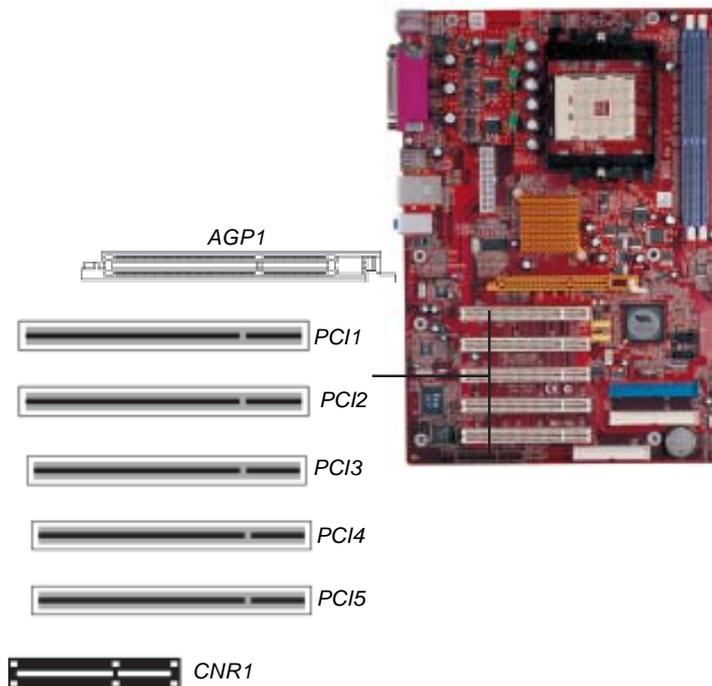
Follow the steps below to install an AGP/CNR/PCI expansion card.

1. Locate the AGP, CNR or PCI slots on the mainboard.
2. Remove the blanking plate of the slot from the system chassis.
3. Install the edge connector of the expansion card into the slot. Ensure the edge connector is correctly seated in the slot.
4. Secure the metal bracket of the card to the system chassis with a screw.

8x AGP Slot

You can install a graphics adapter that supports the 8x AGP specification and has a 8x AGP edge connector in the AGP slot.

CNR Slot

You can install the CNR (Communications and Networking Riser) cards in this slot, including LAN, Modem, and Audio functions.

PCI Slots

You can install the 32-bit PCI interface expansion cards in the slots.

Chapter 3 BIOS Setup Utility

Introduction

The BIOS Setup Utility records settings and information of your computer, such as date and time, the type of hardware installed, and various configuration settings. Your computer applies the information to initialize all the components when booting up and basic functions of coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer booting properly. If it happens, you can use the clear CMOS jumper to clear the CMOS memory which has stored the configuration information; or you can hold down the **Page Up** key while rebooting your computer. Holding down the **Page Up** key also clears the setup information.

You can run the setup utility and manually change the configuration. You might need to do this to configure some hardware installed in or connected to the motherboard, such as the CPU, system memory, disk drives, etc.

Running the Setup Utility

Every time you start your computer, a message appears on the screen before the operating system loading that prompts you to "*Hit <DEL>if you want to run SETUP*". Whenever you see this message, press the **Delete** key, and the Main menu page of the Setup Utility appears on your monitor.

```
┌─────────────────────────────────────────────────────────────┐
│ CMOS SETUP UTILITY – Copyright (C) 1985-2003, American       │
│ Megatrends, Inc                                              │
│                                                              │
│  ▶ Standard CMOS Setup        ▶ CPU PnP Setup                │
│  ▶ Advanced Setup             ▶ Hardware Monitor             │
│  ▶ Features Setup               Load Optimal Defaults        │
│  ▶ Power Management Setup       Save Changes and Exit        │
│  ▶ PCI / Plug and Play Setup    Discard Changes and Exit     │
│  ▶ BIOS Security Features                                    │
│                                                              │
│ ↑↓←→ : Move   Enter: Select  +/-/: Value  F10: Save  Esc: Exit│
│     F1: General Help                    F9: Optimized Defaults│
│ Standards COMOS setup for changing time, date, hard disk type, etc. │
│     V02.54  (C) 1985-2003, American Megatrends, Inc.         │
└─────────────────────────────────────────────────────────────┘
```

You can use cursor arrow keys to highlight anyone of options on the main menu page. Press **Enter** to select the highlighted option. Press the **Escape** key to leave the setup utility. Press +/-/ to modify the selected field's values.

Some options on the main menu page lead to tables of items with installed values that you can use cursor arrow keys to highlight one item, and press **PgUp** and **PgDn** keys to cycle through alternative values of that item. The other options on the main menu page lead to dialog boxes requiring your answer Yes or No by hitting the **Y** or **N** keys.

If you have already changed the setup utility, press **F10** to save those changes and exit the utility. Press **F1** to display a screen describing all key functions. Press **F9** to install the setup utility with a set of default values.

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Standard CMOS Setup Page

This page displays a table of items defining basic information about your system.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                         Standard CMOS Setup
System Time              00:00:12                  Help Item
System Date              Mon 04/05/2004
                                              Use [Enter], [TAB] or
 ▸ Primary IDE Master    Not Detected         [SHIFT-TAB] to select a
 ▸ Primary IDE Slave     Not Detected         field.
 ▸ Secondary IDE Master  Not Detected         Use [+] or [-] to configure
 ▸ Secondary IDE Slave   Not Detected         system Time.

Floppy Drive A           1.44 MB 31/2"
Floppy Drive B           Disabled


     ↑↓←→ : Move   Enter: Select   +/-/: Value  F10: Save   Esc: Exit
        F1: General Help                        F9: Optimized Defaults
```

Date & Time

These items set up system date and time.

IDE Pri Master/Pri Slave/Sec Master/Sec Slave

Use these items to configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose *Auto*. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select *Floptical*.

Floppy Drive A/B

These items set up size and capacity of the floppy diskette drive(s) installed in the system.

Advanced Setup Page

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                            Advanced Setup
┌─────────────────────────┬──────────────────────┬─────────────────────┐
│ Quick Boot              │ Enabled              │      Help Item      │
│ 1st Boot Device         │ HDD:PM-ST3120023AS   │                     │
│ 2nd Boot Device         │ CD/DVD:3S-CD-ROM 52  ├─────────────────────┤
│ 3rd Boot Device         │ 1ST FLOPPY DRIVE     │ Allows BIOS to skip │
│ Try Other Boot Device   │ Yes                  │ certain tests while │
│ Bootup Num-Lock         │ On                   │ booting. This will  │
│ Boot To OS/2 > 64MB     │ No                   │ decrease the time   │
│ AGP Aperture Size       │ 64 MB                │ needed to boot the  │
│ DRAM CAS# Latency       │ By SPD               │ system.             │
│ Auto Detect DIMM/PCI C1K│ Enabled              │                     │
│ Spread Spectrum         │ Disabled             │                     │
│ Cool 'N' Quiet          │ Enabled              │                     │
├─────────────────────────┴──────────────────────┴─────────────────────┤
│    ↑↓←→ : Move   Enter: Select  +/-/: Value  F10: Save  Esc: Exit     │
│         F1: General Help                    F9: Optimized Defaults     │
└───────────────────────────────────────────────────────────────────────┘
```

Quick Boot

If you enable this item, the system starts up more quickly be elimination some of the power on test routines.

1st Boot Device/2nd Boot Device/3rd Boot Device

Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.

Try Other Boot Device

If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.

BootUp Num-Lock

This item determines if the Num Lock key is active or inactive at system start-up time.

Boot to OS/2 > 64MB

Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.

AGP Aperture Size

This item defines the size of aperture if you use a graphic adapter.

DRAM CAS# Latency

This item determines the operation of DRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.

Auto detect DIMM/PCI Clock

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum

If you enable spread spertrum, it can significantly reduce the EMI (Electro-Magnetic interface) generated by the system.

Cool 'N' Quiet

It supports fan control to reduce fan noise when the CPU is running cool. This motherboard and BIOS requirements for a PowerNow! are identical. The same BIOS data structures are used.

Features Setup Page

This page sets up some parameters for peripheral devices connected to the system.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                            Features Setup
OnBoard Floppy Controller    Enabled          ┌─────────────────┐
Serial Port1 Address         3F8/IRQ4         │    Help Item    │
OnBoard IR Port              Disabled         ├─────────────────┤
Parallel Port Address        378              │ Allows BIOS to  │
   Parrllel Port Mode        ECP              │ Enable or Disable│
      ECP Mode DMA Chnnel     DMA3            │ Floppy Controller.│
   Parallel Port IRQ          IRQ7
OnBoard PCI IDE Controller   Both
OnBoard PCI SATA Controller  Enabled
Audio Device                 Enabled
Modem Device                 Auto
Ethernet Device              Enabled
OnBoard USB Function         Enabled
USB Function for DOS         Disabled

      ↑↓←→ : Move   Enter: Select   +/-/: Value   F10: Save   Esc: Exit
          F1: General Help                    F9: Optimized Defaults
```

OnBoard Floppy Controller

Use this item to enable or disable the onboard floppy disk drive interface.

Serial Port1 Address

Use this item to enable or disable the onboard COM1/2 serial port, and to assign a port address.

OnBoard IR Port

Use this item to enable or disable the onboard infrared port, and to assign a port address.

Parallel Port Address

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

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Parallel Port Mode

Use this item to set the parallel port mode. You can select ECP

(Extended Capabilities Port).

ECP Mode DMA Channel

Use this item to assign a DMA channel to the parallel port.

Parallel Port IRQ

Use this item to assign IRQ to the parallel port.

OnBoard PCI IDE Controller

Use this item to enable or disable both of the onboard Primary and
Secondary IDE channels.

OnBoard PCI SATA Controller

Use this item to enable the onboard PCI SATA channel.

Audio Device

This item enables or disables the AC'97 audio chip.

Modem Device

This item enables or disables the onboard Modem.

Ethernet Device

This item enables or disables the onboard Ethernet LAN.

OnBoard USB Function

Enable this item if you plan to use the USB ports on this
motherboard.

USB Function For DOS

Enable this item if you plan to use the USB ports on this
motherboard in a DOS environment.

Power Management Setup Page

This page sets some parameters for system power management operation.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                      Power Management Setup

ACPI Aware O/S              Yes            |      Help Item
Power Management            Enabled        |
Suspend Mode               S1             | Enable / Disable
Suspend Time Out           Disabled       | ACPI support for
Resume On RTC Alarm        Disabled       | Operating System.
LAN/Ring Power On          Disabled       | Enable: If OS
Keyboard Power On          Disabled       | supports ACPI.
    Wake-Up Key            Any Key        | Disable: If OS does
    Wake-Up Password       Press Enter    | not support ACPI.

       ↑↓←→ : Move    Enter: Select   +/-/: Value   F10: Save   Esc: Exit
            F1: General Help                     F9: Optimized Defaults
```

ACPI Aware O/S

This item supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.

Power Management

Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Both APM and ACPI are supported.

Suspend Mode

This item selects the status S1(Stop Clock) or S3(Suspend to RAM) when the system enters the power-saving Suspend mode.

Suspend Time Out

This sets the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

Resume On RTC Alarm / Date / Hour / Minute / Second

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

LAN/Ring Power On

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem/Ring, or traffic on the network adapter. You must use an ATX power supply in order to use this feature.

Keyboard Power On

If you enable this item, system can automatically resume by pressing any keys or power key on the keyboard, or typing in the password. You must use an ATX power supply in order to use this feature.

Wake-Up Key

When Keyboard Power On is set to "Wake-Up Key", this item is available and users can press any keys on the keyboard.

Wake-UP Password

When Keyboard Power On is set to "Password", this item is available and users can enter the password.

PCI / Plug and Play Setup Page

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                        PCI / Plug and Play Setup
Primary Graphics Adapter        AGP              Help Item
Allocate IRQ to PCI VGA         Yes
PCI IDE BusMaster               Disabled              Options
                                                 PCI
                                                 AGP




       ↑↓←→   : Move   Enter: Select  +/-/: Value  F10: Save  Esc: Exit
           F1: General Help                        F9: Optimized Defaults
```

Primary Graphics Adapter

This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default AGP setting still lets the onboard display work and allows the use of a second display card installed in a Pci slot.

Allocate IRQ to PCI VGA

If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

PCI IDE BusMaster

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

BIOS Security Features Setup Page

This page helps you install or change a password.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                      BIOS Security Features
┌──────────────────────────────────────────────┬──────────────────┐
│ Security Settings                              │    Help Item     │
│                                                │                  │
│ Supervisor Password : Not Installed            │ Install or Change│
│ Change Supervisor Password  Press Enter        │ the password.    │
│                                                │                  │
│                                                │                  │
├──────────────────────────────────────────────┴──────────────────┤
│      ↑↓←→  : Move   Enter: Select  +/-/: Value  F10: Save  Esc: Exit │
│          F1: General Help                  F9: Optimized Defaults  │
└──────────────────────────────────────────────────────────────────┘
```

Supervisor Password

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change Supervisor Password

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

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CPU PnP Setup Page

This page helps you manually configure the motherboard for the CPU. The system will automatically detect the type of installed CPU and make the appropriate adjustments to the items on this page.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                         CPU PnP Setup
CPU Type: AMD Athlon (tm) 64 Processor 3700+      Help Item
CPU Over-clocking Func. :      Disabled
CPU Fequency           :      200 MHz        CPU Freq Over Clock 200 to
                                             230 MHz
DRAM Frequency         :      SPD
Memory Voltage         :      Auto



     ↑↓←→  : Move   Enter: Select  +/-/: Value  F10: Save  Esc: Exit
        F1: General Help                       F9: Optimized Defaults
```

CPU Type

This item shows the type of the CPU installed in your system.

CPU Over-clocking Func.

This item decides the CPU over-clocking function installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

CPU Frequency

This item shows the frequency of the CPU installed in your system.

DRAM Frequency

This item shows the frequency of the DRAM in your system.

Memory Voltage

This item determines the DDR voltage adjustment.

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Hardware Monitor Page

This page sets up some parameters for the hardware monitoring function of this motherboard.

```
┌─────────────────────────────────────────────────────────────────┐
│  CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. │
│                       Hardware Monitor                            │
├──────────────────────────────────────┬──────────────────────────┤
│ *** System Hardware Monitor***       │       Help Item          │
│ Vcore                    :1.463V      ├──────────────────────────┤
│ VIvdd                    :1.432V      │                          │
│ Vdimm                    :2.512V      │                          │
│ Vcc5V                    :5.026V      │                          │
│ SB3V                     :3.264V      │                          │
│ CPU     FAN Speed        :4017 RPM    │                          │
│ SYSTEM  FAN  Speed       :0 RPM       │                          │
│ CPU     Temperature      :50°C/122°F  │                          │
│ SYSTEM  Temperature      :31°C/87°F   │                          │
│                                       │                          │
│                                       │                          │
├──────────────────────────────────────┴──────────────────────────┤
│   ↑↓←→ : Move   Enter: Select  +/-/: Value   F10: Save  Esc: Exit │
│       F1: General Help              F9: Optimized Defaults        │
└─────────────────────────────────────────────────────────────────┘
```

CPU/System Temperature

These items display CPU and system temperature measurement.

FANs & Voltage Measurements

These items indicate cooling fan speeds in RPM and the various system voltage measurements.

Load Optimal Defaults

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You press <Y>, and then <Enter>, the Setup Utility loads all default values; or press <N>, and then <Enter>, the Setup Utility does not load default values.

Save Changes and Exit

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility configuration. When the Save Changes and Exit dialog box appears, press Y to save and exit, or press N to return to the main menu.

Discard Changes and Exit

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Discard Changes and Exit dialog box appears, press <Y> to discard changes and exit, or press <N> to return to the main menu.

> **Note:** *If you have made settings that you do not want to save, use the "Discard Changes and Exit" item and press <Y> to discard any changes you have made.*

Chapter 4 Software & Applications

Introduction

This chapter describes the contents of the support CD-ROM that comes with the motherboard package.

The support CD-ROM contains all useful software, necessary drivers and utility programs to properly run our products. More program information is available in a README file, located in the same directory as the software.

To run the support CD, simply insert the CD into your CD-ROM drive. An Auto Setup screen automatically pops out, and then you can go on the auto-installing or manual installation depending on your operating system.

If your operating system is Windows 2000/XP, it will automatically install all the drivers and utilities for your motherboard; if Windows NT or manual installation, please follow the instructions described as the Installing under Windows NT or Manual Installation section.

Installing Support Software

1 Insert the support CD-ROM disc in the CD-ROM drive.
2 When you insert the CD-ROM disc in the system CD-ROM drive, the CD automatically displays an Auto Setup screen.
3 The screen displays three buttons of **Setup**, **Browse CD** and **Exit** on the right side, and three others **Setup**, **Application** and **ReadMe** at the bottom. Please see the following illustration.

The **Setup** button runs the software auto-installing program as explained in next section.

The **Browse CD** button is a standard Windows command that you can check the contents of the disc with the Windows 98 file browsing interface.

The **Exit** button closes the Auto Setup window. To run the program again, reinsert the CD-ROM disc in the drive; or click the CD-ROM driver from the Windows Explorer, and click the Setup icon.

The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

The **ReadMe** brings you to the Install Path where you can find out path names of software driver.

Auto-Installing under Windows 2000/XP

If you are under Windows 2000/XP, please click the **Setup** button to run the software auto-installing program while the Auto Setup screen pops out after inserting the support CD-ROM:

    1   The installation program loads and displays the following screen. Click the **Next** button.

    2   Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
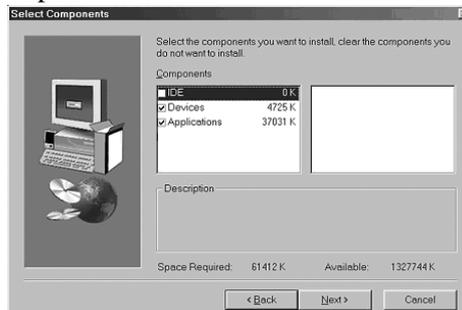
    3   The support software will automatically install.

Once any of the installation procedures start, software is automatically installed in sequence. You need to follow the onscreen instructions, confirm commands and allow the computer to restart as few times as needed to complete installing whatever software you selected. When the process is finished, all the support software will be installed and start working.

Installing under Windows NT or Manual Installation

If you are under Windows NT, the auto-installing program doesn't work out; or you have to do the manual installation, please follow this procedure while the Auto Setup screen pops out after inserting the support CD-ROM:

1. Click the **ReadMe** to bring up a screen, and then click the Install Path at the bottom of the screen.
2. Find out your mainboard model name and click on it to obtain its correct driver directory.
3. Install each software in accordance with the corresponding driver path.

Bundled Software Installation

All bundled software available on the CD-ROM is for users' convenience. You can install bundled software as follows:

1. Click the **Application** button while the Auto Setup screen pops out after inserting the support CD-ROM.
2. A software menu appears. Click the software you want to install.
3. Follow onscreen instructions to install the software program step by step until finished.