



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.

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No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114
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



Essen, 04.03.2004




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



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,Shatuojiac,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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Static Electricity Precautions

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 motherboard 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 mainboard vendor about those damages.

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M848A Series, V5.0
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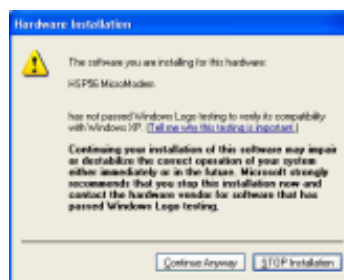
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Notice:

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 for your downloading.

Guide de l'utilisateur de la carte mère

Traduction des Caractéristiques & Liste de contrôle

Liste de contrôle

Le coffret de votre carte mère contient les éléments suivants:

- La carte mère
- Le Manuel utilisateur
- Un câble plat pour lecteur de disquette (optionnel)
- Une câble plat pour lecteur IDE
- CD de support de logiciels

Caractéristiques

Prise en charge du Processeur Socket-A

- Prend en charge les processeurs AMD **Athlon XP/Sempron**
- Supporte un Bus Avant allant jusqu'à **400*/333/266** MHz

Remarque: * Prend en charge FSB 400 MHz seulement par surfréquenceage

Chipset

Ce chipset comporte **SiS746FX Northbridge** et **SiS963L Southbridge** conformément à une architecture novatrice et dimensionnable avec une fiabilité et des performances prouvées.

- Interface d'Hôte de Hautes Performances : Prend en charge les CPU **AMD Athlon XP & Duron** jusqu'à 333 MHz et la synchronisation synchrone/Quasi-synchrone Hôte vers DRAM
- Contrôleur de mémoire DDR266/333/400 -64 Bits de haute performance : Prend en charge les SDRAM DDR 266/333/400
- Cible conforme AGP intégrée /Pont Hôte vers PCI à 66MHz : Conforme AGP v3.0 et prend en charge l'interface **AGP 8X/4X**
- Pont MuTIOL 1G vers PCI intégré : Conforme aux spécifications PCI 2.2, et prend en charge jusqu'à 6 maîtres PCI
- Contrôleur Maître/Esclave IDE double: Maîtrise de liaison d'E/S multiproces-sus intégrée avec flux en pipeline de lecture, Ultra DMA 133/100/66/33
- Contrôleur Hôte de bus USB. Maîtrise de lien Multiprocesus E/S intégré, et Deux Contrôleurs d'Hôte OHCI USB 1.1 Indépendants et Un Contrôleur d'Hôte EHCI USB 2.0, prenant en charge jusqu'à six ports
- Contrôleur Fast Ethernet MAC Intégré : Compatible avec le standard IEEE 802.3 et 802.3x et, prend en charge les réseaux domestiques full duplex 10base-T, 100base-Tx, 1Mb/s & 10 Mb/s.
- Contrôleur Audio intégré avec interface AC'97: Conforme à AC'97 v2.2, et 6 canaux de sorties haut-parleur AC97 et Modem V.90 HSP

Support de Mémoire

- Deux sockets DIMM de 2.5V 184 broches pour module mémoire DDR SDRAM
- Prend en charge les modules de mémoire **DDR400/333/266**
- La mémoire maximum installée est 2Go

Logements d'Extension

- Un logement **8X** AGP
- Quatre logements PCI 32 bits pour interface de bus conforme PCI 2.2

Canaux IDE internes

- Deux Connecteurs IDE

Guide de l'utilisateur de la carte mère

- Prend en Charge les modes PIO (Entrée/Sortie Programmable) et DMA (Accès Direct à la Mémoire)
- Supporte maîtrise de bus Ultra DMA IDE avec vitesse de transfert de **133/100/66 Mo/sec**

AC'97 Audio Codec

- Conforme aux spécifications AC'97 2.3
- CODEC full-duplex Stéréo 16 bits avec vitesse d'échantillonnage indépendante et variable
- Prise en charge d'alimentation numérique 3.3v, analogique 5v et gestion de faible courant d'alimentation
- Trois entrées stéréo de niveau de ligne analogique avec contrôle de volume 5 bits : LINE_IN, CD, AUX
- Détection de prise de Sortie Avant, Sortie Contour, Entrée MIC et Entré Ligne
- Deux entrées mono de niveau de ligne analogique
- LQFP 48 broches standard

Ports E/S Internes

- Deux ports PS/2 pour souris et clavier
- Un port série
- Un port parallèle
- Quatre ports **USB 2.0** de panneau arrière
- Un port LAN (optionnel)
- Prises audio pour microphone, ligne d'entrée et ligne de sortie

LAN Ethernet Fast (optionnel)

- **Solution de Couche Physique 100Base-TX/10Base-T**
- Double Vitesse – 100/10 Mbps
- Négociation automatique : 10/100, Full/Half Duplex
- Conforme à tous les Standards IEEE802.3, 10Base-T et 100Base-TX Applicables

USB 2.0

- Conforme aux Spécifications de Bus Série Universel Révision 2.0
- Conforme aux Spécifications d'interface de Contrôleur d'Hôte Amélioré de Intel Révision 1.0
- Conforme aux Spécifications d'Interface de Contrôleur d'Hôte Universel Révision 1.1
- Le périphérique multifonction PCI consiste en deux noyaux de Contrôleur d'Hôtes UHCI pour signalisation pleine/faible vitesse et un noyau de Contrôleur d'Hôtes EHCI pour signalisation haute vitesse
- Le hub racine consiste en 4 ports de face en aval avec émetteurs-récepteurs de couche physique intégrés partagés par le Contrôleur d'Hôte UHCI et EHCI, jusqu'à huit ports fonctionnels
- Support des Spécifications d'Interface de Gestion d'Alimentation de Bus PCI version 1.1
- Support hérité pour tous les ports face à l'aval.

Remarque: Certaines spécifications matérielles et éléments de logiciels peuvent être modifiés sans avertissement.

Funktionen & Checkliste

Checkliste

Die Verpackung Ihres Motherboards enthält folgende Teile:

- Motherboard
- Handbuch
- Bandkabel für Floppylaufwerke (optional)
- Bandkabel für IDE-Laufwerke
- Software -CD

Ausstattung

Unterstütz Socket-A-Prozessoren

- Unterstützt AMD **Athlon XP/Sempron** Prozessoren
- Unterstützung von bis zu **400*/333/266** MHz Front-Side Bus

Hinweis: * Unterstützt FSB 400 MHz nur durch Übertakten

Chipsatz

Dieser Chipsatz besteht aus einer **SiS746FX Northbridge** und **SiS963L Southbridge**. Die Chipsatzarchitektur ist in einem innovativen und skalierbaren Design gehalten und verspricht sowohl Zuverlässigkeit als auch Leistungsstärke.

- Hochleistungsfähiges Host-Interface: unterstützt **AMD Athlon XP & Duron** CPU bis zu 333 MHz und Synchron/Quasi-synchron Host-zu-DRAM Timing
- 64-Bit hochleistungsfähiger DDR266/333/400 Speicher-Controller: unterstützt 266/333/400 DDR SDRAM
- Integriertes AGP-gemäßes Target/66MHz Host-zu-PCI-Bridge: entspricht AGP v3.0 und unterstützt **AGP 8X/4X** Interface
- Integriertes MuTIOL 1G-zu-PCI Bridge: entspricht PCI 2.2 Spezifikation und unterstützt bis zu 6 PCI-Masters
- Dualer IDE Master/Slave-Controller: integriertes Multithreaded I/O Link-Mastering mit Read-Pipelined-Streaming, Ultra DMA 133/100/66/33
- Universal Serial Bus Host-Controller: integriertes Multithreaded I/O Link-Mastering, Zwei unabhängige OHCI USB 1.1 Host-Controller und ein EHCI USB 2.0 Host-Controller unterstützen bis zu sechs Ports
- Integrierter Fast Ethernet MAC-Controller: entspricht IEEE802.3 und 802.3x Standards und unterstützt Vollduplex 10base-T, 100base-Tx, 1 Mb/s & 10 Mb/s Home-Networking
- Integrierter Audio-Controller mit AC'97 Interface: AC'97 v2.2 Entsprechung, 6-Kanal AC97 LautsprecherAusgabe und V.90 HSP-Modem

Speicherunterstützung

- Zwei 184-pin 2.5V DIMM Steckplätze für DDR SDRAM
- Unterstützung für **DDR400/333/266** Speicherbus
- Maximal auf 2GB Speicher erweiterbar

Erweiterungssteckplätze

- Ein **8X** AGP-Steckplatz
- Vier 32-Bit PCI-Steckplätze für PCI 2.2-kompatibles Businterface

Onboard IDE-Kanäle

- Zwei IDE-Header
- Unterstützt die Modi PIO (Programmable Input/Output) und DMA (Direct Memory Access)

- Unterstützung für IDE Ultra DMA-Busmastering mit Transferraten von **133/100/66 MB/Sek**

AC'97 Audio Codec

- Entspricht AC'97 2.3
- 16-Bit Stereo full-duplex CODEC mit unabhängigem und variablem Rang.
- Unterstützung für 3.3v digitaler, 5v analoger Stromzuführung und niedrigem Stromverbrauch.
- Drei analoggleiche Stereo-Eingänge mit einer 5-Bit Lautstärkenkontrolle: LINE_IN, CD, AUX
- Front-Out, Surround-Out, MIC-In und LINE-In-Jack Sensing
- Zwei analoge Line-Level Mono-Eingänge
- Standard 48-Pin LQFP

Onboard I/O Ports

- Zwei PS/2-Steckplätze für Maus und Tastatur
- Ein serieller Steckplatz
- Ein paralleler Steckplatz
- Vier **USB 2.0** Ports auf der Rückseite
- Ein LAN Steckplatz (optional)
- Audioanschlüsse für Mikrofon, line-in und line-out

Fast Ethernet LAN (optional)

- **100Base-TX/10Base-T Physical Layer-Lösung**
- Duale Geschwindigkeit – 100/10 Mbps.
- Auto-Negotiation: 10/100 , Voll/Halfduplex
- Entspricht allen anwendbaren Standards: IEEE802.3, 10Base-T und 100Base-TX

USB2.0

- Entspricht Universal Serial Bus-Spezifikation, Revision 2.0
- Entspricht Intels Enhanced Host Controller Interface-Spezifikation, Revision 1.0
- Entspricht Universal Host Controller Interface -Spezifikation Revision 1.1
- PCI-Multifunktionsgerät besteht aus zwei UHCI Host Controller-Kernen für Signalübertragung bei voller und niedriger Geschwindigkeit sowie einem EHCI Host Controller-Kern für Hochgeschwindigkeits-Signalübertragung
- Root Hub besteht aus 4 Downstream-Ports mit integrierten Physical Layer-Überträgern für gemeinsame Nutzung durch UHCI und EHCI Host Controller, bis zu acht funktionelle Ausgangsstellen.
- Unterstützt PCI-Bus Power Management Interface , Spezifikation Release 1.1
- Legacy-Unterstützung für alle Downstream-Ports

Hinweis: Bestimmte Hardwarespezifikationen und Teile der softwareausstattung können ohne weitere Ankündigung abgeändert werden.

Guida dell'utente della scheda madre

Traduzione Funzioni e Lista

Lista

L'imballo della scheda madre é composto da:

- La scheda madre
- Il manuale
- Una piattina per il collegamento dei drive (opzionale)
- Una piattina IDE
- Il CD con il Software di supporto

Caratteristiche

Dotata di Socket A per Processori

- Supporto di processori AMD **Athlon XP/Sempron**
- Supporta fino a **400*/333/266** MHz Front Side Bus

Nota: * Supporto di 400 MHz per FSB solo tramite overlocking

Chipset

In accordo ad una architettura scabile e innovative sono presenti nel chipset il **Northbridge SiS746FX** e **Southbridge SiS963L**.

- Interfaccia host con elevate prestazioni: supporto di CPU **AMD Athlon XP e Duron** fino a 333 MHz e temporizzazione da host a DRAM sincrona/quasi sincrona
- Controller memoria 266/333/400 DDR a 64 bit con elevate prestazioni: supporto di SDRAM DDR 266/333/400
- Bridge Host/PCI Target/66 MHz conforme con AGP integrato: conformità con AGP v3.0 e supporto di interfaccia **AGP 8X/4X**
- Bridge MuTIOL 1G/PCI integrato: conforme alla specifica PCI 2.2, con supporto di un massimo di 6 master PCI
- Doppio controller IDE Master/Slave: controllo master MuTIOL integrato con streaming a pipeline in lettura, Ultra DMA 133/100/66/33
- Host controller a bus seriale universale: controllo master MuTIOL integrato, Due host controller OHCI USB 1.1 indipendenti e un host controller EHCI USB 2.0, supporto di fino a sei porte
- Controller MAC Fast Ethernet integrato: compatibile con gli standard IEEE802.3 e 802.3x e supporto di reti domestiche full duplex a 10base-T, 100base-Tx, 1 Mb/s e 10 Mb/s
- Controller audio integrato con interfaccia AC'97: Conforme a AC'97 v2.2, 6 canali di uscita altoparlanti AC97 e HSP-Modem V.90

Memoria Supporta

- Due prese DIMM da 2.5 V a 184 pin per moduli memoria SDRAM DDR
- Supporta bus di memoria **DDR400/333/266**
- Quantità massima di memoria installabile, 2GB

Slot di espansione

- Una slot AGP **8X**
- Quattro slots PCI a 32 bit per interfaccia bus PCI 2.2

Canali IDE Integrati

- Due connettori IDE

Guida dell'utente della scheda madre

- Supporto della modalità PIO (Programmable Input/Output) e DMA (Direct Memory Access)
- Supporto per le modalità Bus Mastering e Ultra DMA ATA **133/100/66 MB/sec**

AC'97 Audio Codec

- Conforme con le specifiche AC'97 2.3
- CODEC stereo full-duplex a 16-bit con sampling rate indipendente e variabile.
- Supporto per 3.3v digitale, alimentazione analogica da 5v e gestione a basso consumo elettrico.
- Tre input stereo line-level analogici con controllo volume a 5 bit: LINE_IN, CD, AUX
- Rilevazione dei jack Front-Out, Surround-Out, MIC-In e LINE-In
- Due ingressi di linea analogica-mono
- LQFP a 48 pin standard

Onboard I/O Porte

- Due porte PS/2 per tastiera e mouse
- Una porta seriale
- Una porta parallela
- Quattro porte **USB 2.0** sul retro del pannello
- Una porta LAN (opzionale)
- Jack audio per microfono, ingresso linea e uscita linea

Fast Ethernet LAN (opzionale)

- **Architettura 100Base-TX/10Base-T**
- Doppia velocità – 100/10 Mbps
- Negoziazione Automatica: 10/100, Full/Half Duplex
- Supporto di tutti gli standard esistenti IEEE802.3, 10Base-T e 100Base-TX

USB 2.0

- Conforme alle specifiche Universal Serial Bus 2.0
- Conforme alle specifiche Intel Enhanced Host Controller revisione 1.0
- Conforme alle specifiche Universal Host Controller Interface revisione 1.1
- Il dispositivo PCI multifunzione consiste di due schede di controllo UHCI per la trasmissione segnali pieno/basso e una scheda di controllo EHCI per la trasmissione segnali ad alta velocità.
- Il root hub è composto in 4 porte in downstream facing con ricevitore physical layer integrato condiviso dall'Host Controller UHCI e EHCI sino a otto porte funzionali
- Supporto per interfaccia risparmio energia bus PCI specifiche release 1.1
- Supporto per tutte le porte downstream precedenti

Nota: Alcune specifiche hardware ed elementi software sono soggetti a variazioni senza preavviso.

Guía de Usuario de la Placa Principal

Traducción de Características & Lista

LISTA DE VERIFICACIÓN

El paquete de su placa principal contiene los sigtes. ítems:

- La placa principal
- El Manual del Usuario
- Un cable cinta para el lector de disquete (optativo)
- Un cable cinta para el lector IDE
- CD de Software de soporte

Características

Soporte de Procesador Socket-A

- Soporta procesadores AMD **Athlon XP/Sempron**
- Soporta hasta Bus de Lado Frontal de **400*/333/266** MHz

Nota: * Soporta FSB 400 MHz solamente por overlocking

Chipset

Hay **SiS746FX Northbridge** y **SiS963L Southbridge** en este chipset en conformidad con una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

- Interface Host de Alta Performance: Soporta **AMD Athlon XP & Duron** CPU maxima de 333 MHz y Sincronización Host-para-DRAM Synchronous/Quasi-synchronous
- Regulador de Memoria de alta performance 64 bit DDR266/333/400: Soporta 266/333/400 DDR SDRAM
- AGP Integrado Objeto Complaciente/66MHz Host-to-PCI Puente: AGP v3.0 Complace y soporta Interface **AGP 8X/4X**
- Puente MuTIOL 1G a PCI Integrado: Conformidad de la Especificación 2.2, y soporta hasta 6 Másters de PCI
- Controlador Dual IDE Máster/Escavo: vínculo I/O Multihilado Integrado con Read Pipelined Streaming, Ultra DMA 133/100/66/33
- Controlador Anfitrión de Bus Serial Universal: Mastering de Vínculo IO Multihilado Integrado, y Dos Controladores Anfitriones OHCI USB 1.1 Independientes y Un Controlador Anfitrión EHCI USB 2.0, soportan hasta seis puertos
- Controlador MAC de Fast Ethernet Integrado: Compatible con las Normas IEEE802.3 y 802.3x, y Soporta Redes de Casa de full duplex 10base-T, 100base-Tx, 1 Mb/s & 10 Mb/s
- Controlador de Audio Integrado con Interfaz AC'97: Conformidad de AC'97 v2.2, y 6 Canales de salidas de altoparlantes AC97 y V.90 HSP-Modem

Soporte de Memoria

- Dos zócalos DIMM de 184-pin 2.5V para los módulos de memoria DDR SDRAM
- Soporta bus de memoria en **DDR400/333/266**
- Memoria máxima instalada es 2GB

Ranuras de Expansión

- Una ranura **8X** AGP
- Cuatro ranuras 32-bit PCI para la interfaz de bus conforme con PCI 2.2

Canales IDE abordo

- Dos conectores IDE

Guía de Usuario de la Placa Principal

- Soporta modos PIO (Entrada/Salida Programable/Programmable Input/Output) y modos DMA (Acceso de Memoria Directo/Direct Memory Access).
- Soporta mastering de bus IDE Ultra DMA con índices de transferencia de **133/100/66 MB/seg**

AC'97 Audio Codec

- Conforme con la especificación AC'97 2.3
- CODEC full-duplex de estéreo en 16-bit con índice independiente y variable
- Soporte para suministro eléctrico digital de 3.3v y analógico de 5v, y administración de consumo bajo.
- Tres entradas de estéreo a nivel de línea analógica con control de volumen de 5-bit: LINE_IN, CD, AUX
- Detección de Clavija de Salida de Frente, Salida Surround, Entrada de Microfono y Entrada de Línea
- Dos entradas mono a nivel de línea analógica
- 48-Pin LQFP estándar

Puertos I/O Abordos

- Dos puertos PS/2 para ratón y teclado
- Un puerto serial
- Un puerto paralelo
- Cuatro puertos **USB2.0** del panel trasero
- Un puerto LAN (optativo)
- Clavijas de sonido para micrófono, entrada y salida de línea

Fast Ethernet LAN (optativo)

- **Solución de Capa Física 100Base-TX/10Base-T**
- Velocidad Dual – 100/10 Mbps
- Autonegociación: 10/100, Duplex Completo/Medio
- Satisface Todas las Normas Aplicables IEEE802.3, 10Base-T y 100Base-TX

USB2.0

- Conforme con la Especificación de Bus Serial Universal Revisión 2.0
- Conforme con Controlador Anfitrión Reforzado de Intel Interface Specification Revision 1.0
- Conforme con la Especificación de Interfaz de Controlador Anfitrión Universal Revisión 1.1
- Dispositivo PCI multi-función se consiste de dos centros de Controlador Anfitrión UHCI para señalización de velocidad completa/baja y un centro de Controlador Anfitrión EHCI para señalización de alta velocidad
- Root hub consiste de 4 puertos que miran hacia abajo con transceptores de capa física integrado compartido por Controlador Anfitrión UHCI y EHCI , hasta ocho puertos funcionales
- Soporta Especificación de Interfaz de Administración de Energía de BUS PCI versión 1.1
- Soporte de legado para todos los puertos que miran hacia abajo

Nota: Algunas especificaciones de hardware e ítems de software son sujetos a cambio sin aviso previo .

Guia de Utilizador da Motherboard

Tradução da Lista & Características

Lista de verificação

A embalagem da sua placa principal contém os seguintes itens:

- A placa principal
- O Manual do Utilizador
- Um cabo para a unidade de disquetes (opcional)
- Um cabo para a unidade IDE
- CD de suporte para o software

Características

Suporte do Processador Socket-A

- Suporta processadores AMD **Athlon XP/Sempron**
- Suporta até **400*/333/266** MHz Front-Side Bus

Nota: * Suporta FSB 400 MHz somente através de sobre-temporização

Chipset

Conta com **SiS746FX Northbridge** e **SiS963L Southbridge** neste chipset, de acordo com uma arquitectura inovadora e escalável com um nível de confiança e desempenho comprovado.

- Interface Host de Alta Performance: Suporta **AMD Athlon XP & Duron** CPU até 333 MHz e Temporização Host-para-DRAM Sincronica/Quase-sincronica
- Controlador de Memória DDR266/333/400 de alta performance de 64 bits: Suporta 266/333/400 DDR SDRAM
- Compatível com AGP Integrada de Alvo/66MHz Host-para-PCI Bridge: Compatível com AGP v3.0 e suportando Interface **AGP 8X/4X**
- Porta de Ligação Integrada MuTIOL 1G para PCI: Cumprimento com a Especificação PCI 2.2, e Suporta até 6 Domínios PCI
- Controlador Duplo IDE Principal/Secundário: Domínio Link I/O Multi-fios Integrado com Fluxo de Leitura em Paralelo , Ultra DMA 133/100/66/33
- Controlador Host Bus de Série Universal: Domínio Link IO Multi-fios Integrado , e Dois Controladores Host OHCI USB 1.1 Independentes e Um Controlador Host EHCI USB 2.0, suporta até seis portas
- Controlador Integrado MAC de Ethernet Rápida: Compatível com IEEE802.3 e 802.3x Standard, e Suporta duplex completo 10base-T, 100base-Tx, Rede Local 1 Mb/s & 10 Mb/s
- Controlador de Áudio Integrado com Interface AC'97: compatibilidade com AC'97 v2.2, e 6 Canais de saídas de altifalantes AC97 e Modem V.90 HSP

Suporte de memória

- Dois fichas DIMM 2.5V com 184 pinos para módulos de memória DDR SDRAM
- Suporta barramento de memória **DDR400/333/266**
- A memória máxima instalada é de 2GB

Slots de expansão

- Um slot AGP **8X**
- Quatro slots PCI de 32 bit para interface bus compatível com PCI 2.2

Canais IDE na placa

- Dois conectores IDE
- Suporta modos PIO (Input/Output Programável) e DMA (Direct Memory Access)

- Suporta IDE Ultra DMA bus mastering com razão de transferência de **133/100/66 MB/seg**

AC'97 Audio Codec

- Compatível com a especificação AC'97 2.3
- CODEC full-duplex estéreo 16-bit com taxa de amostragem variável e independente
- Suporte para 3.3v digital, fonte de alimentação analógica 5v e gestão de consumo de baixa potência
- Três entradas estéreo de nível de linha e analógicas com controlo de volume 5-bit: LINE_IN, CD, AUX
- Saída Frontal, Saída Surround, Sensor de Tomada MIC-In e LINE-In
- Duas entradas mono nível de linha analógicas
- LQFP de 48 pinos standard

Portas I/O na placa

- Dois portas PS/2 para o rato e teclado
- Uma porta série
- Uma porta paralela
- Quatro portas **USB2.0** instaladas no painel traseiro
- Uma porta LAN (opcional)
- Jacks audio para microfone, line-in e line-out

Fast Ethernet LAN (opcional)

- **100Base-TX/10Base-T Solução de Camadas Físicas**
- Velocidade Dupla – 100/10 Mbps
- Auto Negociação: 10/100, Full/Half Duplex
- Satisfaz todos os Padrões IEEE802.3, 10Base-T e 100Base-TX Aplicáveis

USB 2.0

- Compatível com Universal Serial Bus Revisão 2.0 da especificação
- Compatível com controlador Enhanced Host da Intel Revisão 1.0 da especificação da interface
- Compatível com controlador Universal Host Revisão 1.1 da especificação da Interface
- O dispositivo PCI multi-funções consiste em dois núcleos de Controlador UHCI Host Controller para sinalização de velocidade total/baixa em um núcleo de Controlador EHCI Host para sinalização de alta velocidade
- O núcleo de raiz consiste em 4 portas de protecção a jusante com transreceptores de camadas físicas integrados partilhados pelos controladores Host UHCI e EHCI, até oito tomadas funcionais
- Suporte de gestão de energia PCI-Bus Revisão 1.1 da especificação da interface
- Suporte para todas as portas de protecção a jusante

Nota: As especificações de alguns artigos de hardware e software encontram-se sujeitos a alterações sem aviso prévio.

检查单

您的主板包装含有以下项目：

- 主板
- 用户手册
- 一根磁盘驱动器扁平电缆（可选）
- 一根 IDE 驱动器扁平电缆
- 软件支持 CD

功能

支持 Socket-A 处理器

- 支持 AMD Athlon XP/Sempron 处理器
- 支持 400*/333/266 MHz 前端总线

说明：*只在超频情况下支持 FSB 400 MHz

芯片组

芯片组包含 SiS746FX 北桥和 SiS963L 南桥，它基于一种新型的、可扩展的架构，能提供已经证明的可靠性和高性能。

- 高性能主机接口：支持 AMD Athlon XP & Duron（最高 333 MHz）和同步/准同步主机到 DRAM 定时
- 64 位高性能 DDR266/333/400 存储控制器：支持 266/333/400 DDR SDRAM
- 集成兼容 A.G.P 的 Target/66Mhz 主机到 PCI 桥路：符合 AGP v3.0 并支持 AGP 8X/4X 接口
- 集成 MuTIOL 1G 到 PCI 桥路：符合 PCI 2.2 规格，最多支持 6 个 PCI 主控制器
- 双 IDE 主/从控制器：对读流水线信号流进行集成多线程 I/O 连接主控，Ultra DMA 133/100/66/33
- 通用串行总线主控器：集成多线程 IO 连接主控，2 个独立 OHCI USB 1.1 主控器和 1 个 EHCI USB 2.0 主控制，最多支持 6 个端口
- 集成高速以太网 MAC 控制器：兼容 IEEE802.3 和 802.3x 标准，支持全双工 10base-T、100base-Tx、1Mb/s & 10 Mb/s 本地网络
- 带 AC'97 接口的集成音频控制器：符合 AC'97 v2.2 规格，6 声道 AC97 扬声器输出和 V.90 HSP-Modem

内存支持

- 两个用于 DDR SDRAM 内存条的 184-pin 2.5V DIMM 插槽
- 支持 DDR400/333/266 存储总线
- 内存最多可达 2GB

扩展槽

- 1 个 8XAGP 插槽
- 4 个 32 位 PCI 插槽，用于 PCI 2.2 兼容总线接口

Onboard IDE 通道

- 2 个 IDE 接口
- 支持 PIO（程控输入/输出）和 DMA（直接存储器存取）模式
- 支持 IDE Ultra DMA 总线控制，传输速率可达 133/100/66 MB/sec

AC'97 编解码器

- 兼容 AC'97 2.3 规格
- 具有可调独立采样速率的 16 位立体声全双工 CODEC (编解码器)
- 它支持 3.3v 数字、5v 模拟电源和低功耗管理
- 3 路带 5 位音量控制的模拟线路电平立体声输入: LINE_IN, CD, AUX
- 前置输出、环绕输出、麦克风输入和线入插孔检测
- 2 路线路电平单声道输入
- 标准 48-Pin LQFP

集成 I/O 端口

- 2 个用于连接鼠标和键盘的 PS/2 端口
- 1 个串口
- 1 个并口
- 4 个后面板 USB2.0 端口
- 1 个 LAN 端口 (可选)
- 麦克风、线入和线出声音插孔

快速以太网 LAN (可选)

- 100Base-TX/10Base-T 物理层解决方案
- 双速-100/10 Mbps
- 自动协商: 10/100, 全双工/半双工
- 符合所有相应的 IEEE 802.3、10Base-T 和 100Base-Tx 标准

USB 2.0

- 符合通用串行总线规格 2.0 版本
- 符合 Intel 1.0 版本的增强主控器接口规格
- 符合 1.1 版本的通用主控器接口规格
- PCI 多功能设备由 2 个用于全速/低速传输数据的 UHCI 主控器和 1 个用于高速传输数据的 EHCI 主控器组成
- Root 集线器包括 4 个下行端口, 带有与 UHCI 和 EHCI 主控制器共用的集成物理层收发器, 最多 8 个功能端口
- 支持 1.1 版本的 PCI 总线电源管理接口规格
- 支持所有传统下行端口

说明: 某些硬件规格和软件项目若有更改恕不另行通知。

Chapter 1 Introduction

This motherboard has a **Socket-A** supporting **AMD Athlon XP/ Sempron** processors, with Front-Side Bus **400*/333/266 MHz**.

This motherboard integrates **SiS746FX** Northbridge and **SiS963L** Southbridge that supports the **AC'97 audio codec**, the **Ultra DMA 133/100/66** function, and 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 has four 32-bit **PCI** slots, one **8X AGP** 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. One onboard USB header provides additional USB2.0 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-A Processor Support

- Supports **AMD Athlon XP/ Sempron** processors
- Supports up to **400*/333/266 MHz** Front-Side Bus

Note: * Supports FSB 400 MHz only by overclocking.

Chipset

Chipsets **SiS746FX Northbridge** and **SiS963L Southbridge** provide you with an innovative and scalable architecture, proven reliability and performance.

- High Performance Host Interface: Supports **AMD Athlon XP & Duron** CPU up to 333 MHz and Synchronous/Quasi-synchronous Host-to-DRAM Timing
- 64 bit high performance DDR266/333/400 Memory Controller: Supports 266/333/400 DDR SDRAM
- Integrated AGP Compliant Target/66MHz Host-to-PCI Bridge: AGP v3.0 Compliant and supports **AGP 8X/4X** Interface
- Integrated MuTIOL 1G to PCI Bridge: PCI 2.2 Specification Compliance, and Supports up to 6 PCI Masters
- Dual IDE Master/Slave Controller: Integrated Multithreaded I/O link Mastering with Read Pipelined Streaming, Ultra DMA 133/100/66/33

Motherboard User's Guide

- Universal Serial Bus Host Controller: Integrated Multi-threaded IO Link Mastering, and Two Independent OHCI USB 1.1 Host Controllers and One EHCI USB 2.0 Host Controller, support up to six ports
- Integrated Fast Ethernet MAC Controller: IEEE802.3 and 802.3x Standard Compatible, and Supports full duplex 10base-T, 100base-Tx, 1 Mb/s & 10 Mb/s Home Networking
- Integrated Audio Controller with AC'97 Interface: AC'97 v2.2 compliance, and 6 Channels of AC97 speaker outputs and V.90 HSP-Modem

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 **8X AGP** slot
- Four 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**

AC'97 Codec

- Compliant with AC'97 2.3 specification
- 16-bit Stereo full-duplex CODEC with independent and variable sampling rate
- Support for 3.3v digital, 5v analog power supply and low power consumption management
- Three analog line-level stereo inputs with 5-bit volume control: LINE_IN, CD, AUX
- Front-Out, Surround-Out, MIC-In and LINE-In Jack Sensing
- Two analog line-level mono input
- Standard 48-Pin LQFP

Onboard I/O Ports

- 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)

- **100Base-TX/10Base-T Physical Layer Solution**
- Dual Speed - 100/10 Mbps
- Auto-Negotiation: 10/100, Full/Half Duplex
- Meet All Applicable IEEE802.3, 10Base-T and 100Base-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 190 mm

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

Motherboard User's Guide

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 mainboard.

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

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:

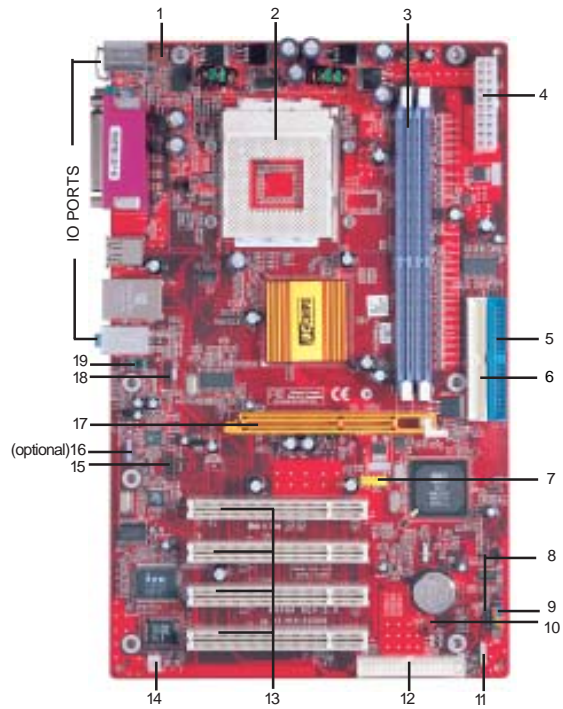
- ❑ Identify the motherboard components
- ❑ Install a CPU
- ❑ Install one or more system memory modules
- ❑ Make sure all jumpers and switches are set correctly
- ❑ Install this motherboard in a system chassis (case)
- ❑ Connect any extension brackets or cables to headers/connectors on the motherboard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

Note:

1. Before installing this motherboard, make sure jumper JP1 is under Normal setting. See this chapter for information about locating JP1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the motherboard.

Motherboard User's Guide

Motherboard Components

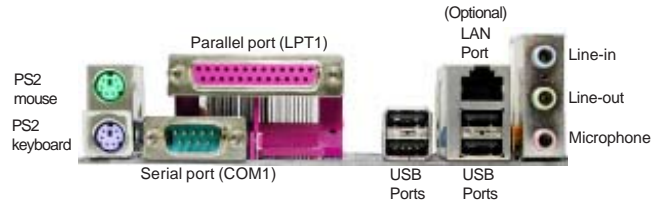


ITEM	LABEL	COMPONENTS	COLOR
1	CPUFAN1	CPU Fan connector	DARK RED
2	CPU Socket	Socket-462 for Athlon XP/Sempron CPUs	WHITE
3	DIMM1/2	Two 184-pin DDR SDRAM sockets	PURPLE
4	ATX1	Standard 20-Pin ATX Power connector	WHITE
5	IDE1	Primary IDE connector	BLUE
6	IDE2	Secondary IDE connector	WHITE
7	USB3	Front Panel USB header	YELLOW
8	SJ1	Single color LED header (optional)	BLACK
9	PANEL1	Front Panel Switch/LED header	COLOR
10	JP1	Clear CMOS jumper	RED
11	SPKR1	Speaker header	LIME
12	FDD1	Floppy Disk Drive connector	WHITE
13	PCI 1-4	32-bit PCI slots	WHITE
14	CHSFAN1	System Fan connector	WHITE
15	AUXIN1	Auxiliary Audio-In header	BLACK
16	SPDIFO1	SPDIF Out header (optional)	LIGHT PURPLE
17	AGP1	AGP slot	ORANGE
18	CDIN1	Analog Audio Input header	BLACK
19	AUDIO1	Front Panel Audio header	PURPLE

Chapter 2: Motherboard Installation

I/O Ports

This is a side view of the built-in I/O ports on the motherboard.



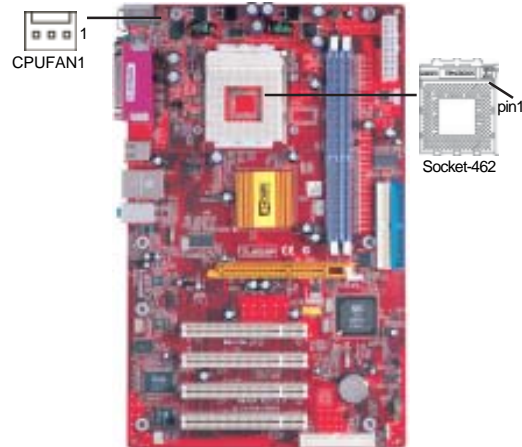
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use the Parallel port to connect printers or other parallel communications devices.
Serial Port (COM1)	Use the COM port to connect serial devices 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 462 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:



- 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.
- 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 (CPUFAN1) on the motherboard.

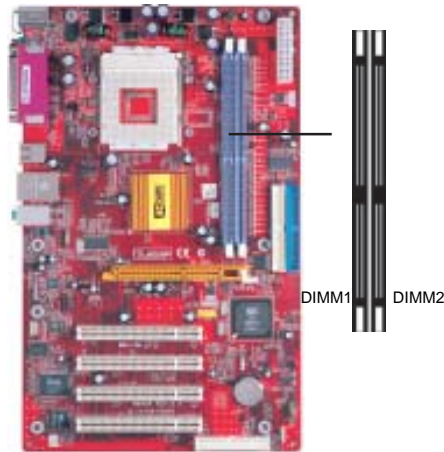


Installing Memory Modules

This motherboard accommodates two 184-pin 2.5V DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR 400**/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 1.6 GB/s, 2.1 GB/s or 3.2GB/s data transfer rate when the bus is 133 MHz, 166 MHz or 200 MHz, respectively.



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.

Motherboard User's Guide

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**.



JP1: 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
Normal	Short Pins 1-2
Clear	Short Pins 2-3

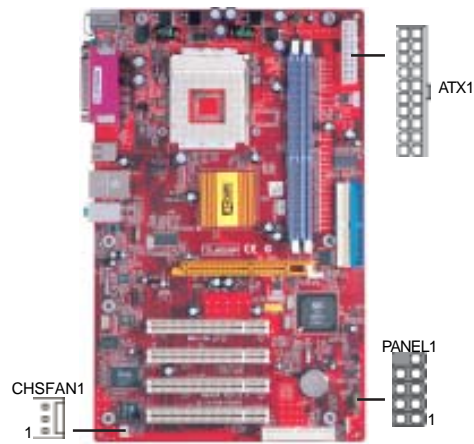
Note: To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Optimal De-faults" and then "Save Changes and Exit".

Chapter 2: Motherboard Installation

Install the Motherboard

Install the motherboard in a system chassis (case). The board is an 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.



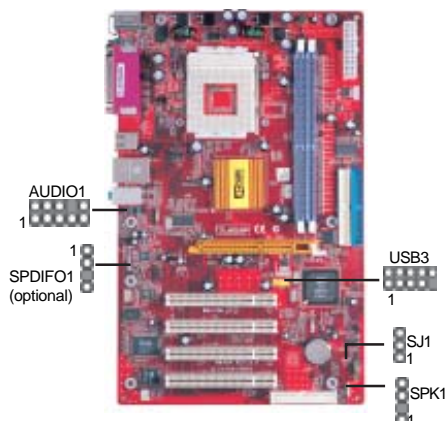
Connect the power connector from the power supply to the **ATX1** connector on the motherboard.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **CHSFAN1** fan power connector on the motherboard.

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

Connecting Optional Devices

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



SPK1: Speaker Header

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

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

SJ1: Single Color LED Header (optional)

Connect the case LED cable to **SJ1**.

Pin	Signal	Function
1	ACPI LED	MSG LED (-) green
2	ACPI LED	MSG LED (-) green
3	SBSV	Power LED (+)

ACPI LED FUNCTION:

S0	S1	S3	S4/S5
Light	Blinking	Blinking	Dark

AUDIO1: Front Panel Audio Header

This header 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

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 header USB3 to connect the front-mounted ports to the motherboard.

Pin	Signal	Pin	Signal
1	VERG_FP_USBPWRO	2	VERG_FP_USBPWRO
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_OCC0

1. Locate the USB3 header on the motherboard.
2. Plug the bracket cable onto the 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.

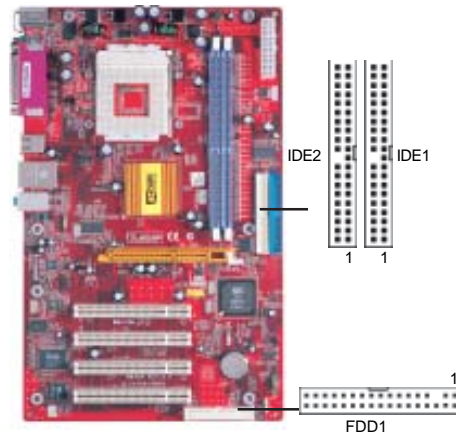
SPDIF01: SPDIF Out Header (optional)

S/PDIF (Sony/Philips Digital Interface) is a standard audio transfer file format and allows the transfer of digital audio signals from one device to another without having to be converted first to an analog format. Via a specific audio cable, you can connect the SPDIF01 header (S/PDIF output) on the motherboard to the S/PDIF digital input on the external speakers or AC Decode devices.

Pin	Signal	Pin	Signal
1	SPDIF	2	+5VA
3	KEY	4	GND

Install Other Devices

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



Floppy Disk Drive

The motherboard 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 **FDD1**.

IDE Devices

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

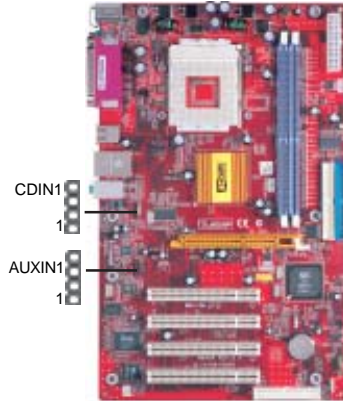
The motherboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave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

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 **CDIN1**.

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

Auxiliary Audio-In Header

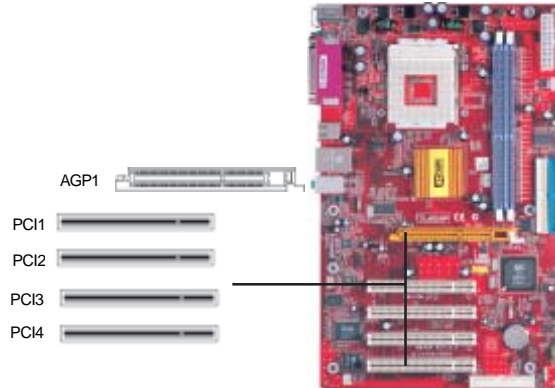
If you have installed a secondary CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system. On the motherboard, locate the 4-pin Aux-In header **AUXIN1**, and connect the cable to this header.

Pin	Signal
1	AUX_L
2	AUD_GND
3	AUD_GND
4	AUX_R

Motherboard User's Guide

Expansion Slots

This motherboard has one AGP and four 32-bit PCI slots.



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

1. Locate the AGP or PCI slots on the motherboard.
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.

PCI Slots

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

Chapter 3 Using BIOS

About The Setup Utility

The computer uses the latest AMI BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Power management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

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Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to “Hit if you want to run SETUP”. When you see this message, press the **Delete** key and the Main menu page of the Setup Utility appears on your monitor.



BIOS Navigation Keys

You can use the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter** to select the highlighted option. To exit the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes press down the **F2/F3**.

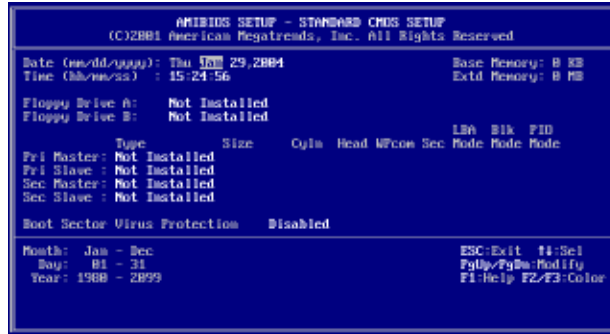
Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each item. Other options on the main menu page lead to dialog boxes that require you to answer Yes or No by hitting the Y or N keys.

If you have already made changes to the setup utility, press **F10** to save those changes and exit the utility. Press **F5** to reset the

changes to the original values. Press **F6** to install the setup utility with a set of high-performance values.

Standard CMOS Setup Page

The Standard CMOS setup is used to modify basic system configuration data, such as date, time floppy and hard disk drive types, video type and keyboard



Date & Time

Use these items to set the system date and time.

Floppy Drive A/Floppy Drive B

Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system.

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*.

Advanced CMOS Setup

The Advanced CMOS setup is used to control advanced system information such as hardware access and boot settings.



Quick Boot (Enabled)

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

Pri/Sec Master ARMD Emulated as (Auto)

Pri/Sec Slave ARMD Emulated as (Auto)

These four options ensure that, if you have an ARMD attached as a master or slave device, it can be properly detected by the system.

1st Boot Device/2nd Boot Device/3rd Boot Device (Floppy/CD/DVD/IDE-0)

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 Devices (Yes)

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.

Initial Display Mode (BIOS)

This option specifies the initial display mode when the system boots.

Display Mode at Add-On ROM Init (Force BIOS)

This option allows OEM logo to show during boot-up.

Floppy Access Control (Read-Write)

This option specifies the read/write access that is set when booting from a floppy drive.

Hard Disk Access Control (Read-Write)

This option specifies the read/write access that is set when booting from a hard disk drive.

S.M.A.R.T for Hard Disks (Disabled)

Set this option to Enabled to permit the BIOS to use the SMART (System Management and Reporting Technologies) protocol for reporting server system information over a network. Enabling this feature allows you to back up your data when your hard disk is about to fail. If a password has been set for the supervisor, this item will not be visible for the user.

BootUp Num-Lock (On)

Set this option to Off to turn the Num Lock key off when the computer is booted you can use the arrow keys in both the numeric keypad and the keyboard.

Floppy Drive Seek (Disabled)

When enabled, the BIOS will attempt to initialize the floppy drive. If it cannot detect one, it will flash an error message. When set to disabled, the BIOS will skip the floppy drive check which can speed up the booting process by several seconds.

PS/2 Mouse Support (Enabled)

Set this option to Enabled to enable the BIOS support for a PS/2-type mouse. The BIOS will allocate IRQ12 for the PS/2 mouse.

Primary Display (VGA/EGA)

This option configures the type of monitor attached to the computer.

Password Check (Setup)

This option enables password checking every time the system boots or when you run the BIOS Setup. If you choose Always, a user password prompt appears every time the computer is turned on. If you choose Setup, the password prompt appears if the BIOS is executed.

Boot To OS/2 (No)

Set this option to Enabled if running an OS/2 operating system and using more than 64 MB of system memory on the motherboard.

Internal Cache (Write Back)

This option sets the type of caching algorithm used by the L1 internal cache memory on the CPU.

External Cache (Write Back)

This option sets the type of caching algorithm used by the L1 external cache memory on the CPU.

System BIOS Cacheable (Enabled)

When set to Enabled, the contents of the F0000h system memory segment can be read from or written to cache memory. If parts of the BIOS ROM are frequently used, these parts are copied to cache memory for faster execution.

Advanced Chipset Setup

The Advanced Chipset Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer. You should leave the items on this page at their default values, if you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.



Detect CPU Frequency (Auto)

This item will automatically detect the CPU Bus Frequency.

Current Frequency (133 MHz)

This item displays the CPU current frequency.

Auto Detect DRAM Frequency (Enabled)

When set to enable, the BIOS automatically detects the reasonable speed for memory to maintain the system stability.

CPU/DRAM Clock Ratio ([1:1])

Enables you to set the CPU and DRAM clock.

DRAM Frequency (133 MHz)

This item displays the memory (DRAM) frequency. This is a display-only item. You cannot make changes to this field.

Auto Detect DIMM/PCI Clk (Enabled)

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

Clock Spread Spectrum Enable (Enabled)

The Clock Spread Spectrum significantly reduces the EMI (Electro Magnetic Interference) generated by the system.

On Board LAN (Enabled)

Enables and disables the onboard LAN.

LAN Boot ROM Support (Disabled)

Use this item to enable and disable the booting from the onboard LAN with a remote boot ROM installed.

BIOS Write Protect (Disabled)

This option protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS' data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you'll need to disable this BIOS Write Protect function.

Fast Synchronizer (Disabled)

This option enables you to adjust the timing between CPU and DRAM to enhance performance.

DRAM Timing Configuration (Normal Mode)

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

Graphic Win Size (128M)

This setting controls just how much system RAM can be allocated to AGP for video purposes.

IO APIC Support (Enable)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

DDR CAS to Latency (SPD)

This item determines the operation of the DDR memory CAS (column address strobe). We recommend that you leave this item at the default value.

AGP Fast Write (Disabled)

Enabling this item increases the graphic performance considerably. Make sure that the graphics card supports this option; otherwise problems may be encountered with older cards which do not support this feature. If you proceed to set this to enable, it may cause the system to crash.

Power Management Setup

The Power Management Setup Menu option is used to change the values of the chipset registers for system power management.



Power Switch Type (On/Off)

This option specifies how the power button is used. In the Suspend mode, the hard disk motor is spindled down, the monitor is shut down, and the processor clock is stopped.

ACPI Aware O/S (Yes)

Set this option to Yes to enable Advanced Configuration and Power Interface (ACPI) BIOS for an ACPI-aware operating system.

ACPI Standby State (S1)

This item allows you to select the standby type under ACPI operating system.

Power Management (Enabled)

Set this option to Enabled to enable the chipset power management and APM (Advanced Power Management) features.

Suspend Time Out (Disabled)

This option defines the length of time that the system while in Standby mode, it must be inactive before it enters Suspend mode.

Hard Disk Time Out (Disabled)

This option specifies the length of period of hard disk drive inactivity. When this time period expires, the computer enters the power-conserving state specified in the Hard Disk Power Down Mode option.

RTC Alarm Resume From Soft Off (Disabled)

This option enable or disable the RTC alarm to wake up the system from Soft Off.

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.

Resume on PME (Enabled)

This option allows you to enable or disable the Resume on PME function.

Resume on MAC PME (Enabled)

This option allows you to enable or disable the Resume on MAC PME function.

Wake on Ring/LAN (Disabled)

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. You must use an ATX power supply in order to use this feature.

Restore on AC/Power Loss (Power Off)

This sets the power state after a shutdown due to an unexpected interrupt of AC power.

PCI / Plug and Play Setup

This section describes configuring the PCI bus system. PCI (Peripheral Component Interconnect) is a system, which allows I/O devices to operate at speeds nearing CPU's when they communicate with own special components.

All the options describes in this section are important and technical and it is strongly recommended that only experienced users should make any changes to the default settings.



Plug and Play Aware O/S (No)

Enable this item if you are using an O/S that supports Plug and Play such as Windows 95/98/ME.

Primary Graphics Adapter (PCI)

If you are going to use an AGP graphics card, set this item to AGP. Your system will attempt to initialize the AGP card first. But if you have PCI graphics card then leave this item to its default setting.

Allocate IRQ to PCI VGA (Yes)

This option will be used to allocate IRQ for PCI VGA card. In general, some of PCI VGA cards need IRQ support.

PCI IDE BusMaster (Enabled)

Set this option to Enabled to specify that the IDE controller on the PCI bus has bus mastering capability.

OffBoard PCI IDE Card (Auto)

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the motherboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used, the onboard IDE controller is automatically disabled.

OffBoard PCI IDE Primary IRQ (Disabled)

This option specifies the PCI interrupt used by the primary IDE channel on the offboard PCI IDE controller.

OffBoard PCI IDE Secondary IRQ (Disabled)

This option specifies the PCI interrupt used by the secondary IDE channel on the offboard PCI IDE controller.

DMA Channel 0/1/3/5/6/7 (PnP)

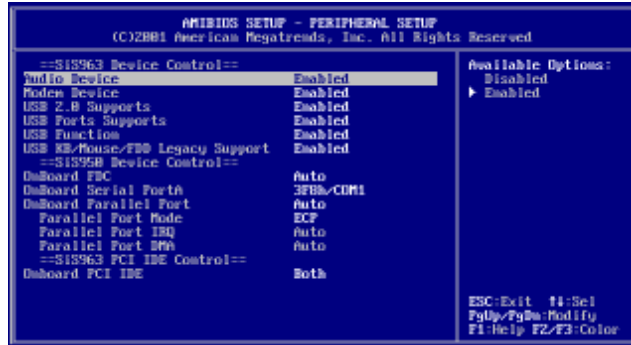
This option allows you to specify the bus type used by each DMA channel.

IRQ (PCI/PnP)

This option specifies the bus that the specified IRQ line is used on. They allow you to reserve IRQs for legacy ISA adapter cards and determine if the BIOS should remove an IRQ from the pool of available IRQs passed to devices that are configurable by the system BIOS. The available IRQ pool is determined by reading the ESCD NVRAM. If more IRQs must be removed from the pool, the end user can use these options to reserve the IRQ by assigning an ISA/EISA setting to it. Onboard I/O is configured by the BIOS. All IRQs used by onboard I/O are configured as PCI/PnP. IRQ12 only appears if the PS/2 Mouse Support option in Advanced Setup is set to Disabled. IRQ14 and 15 will not be available if the onboard PCI IDE is enabled.

Peripheral Setup

The Peripheral Setup menu describes I/O resources assignment for all of the on-board peripheral devices.



Audio Device (Enabled)

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

Modem Device (Enabled)

This item enables or disables the onboard AC'97 modem chip.

USB 2.0 Supports (Enabled)

This item enables or disables the onboard USB 2.0.

USB Ports Supports (Enabled)

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

USB Function (Enabled)

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

USB KB/Mouse/FDD Legacy Support (Enabled)

Set this item to enable to support for older keyboard, mouse and legacy devices if the USB option is set to enable.

Optional BIOS Item

Onboard 1394 Device (Enabled)

Enable this item if you plan to use the onboard 1394 device.

OnBoard FDC (Auto)

Set this option to Enabled to enable the floppy drive controller on the motherboard.

OnBoard Serial PortA (3F8h/COM1)

This option specifies the base I/O port address of serial port A.

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Optional BIOS Items

OnBoard Serial PortB (2F8h/COM2)

This option specifies the base I/O port address of serial port B.

Serial Port2 Mode (Normal)

Use this item to allocate the resources of the second serial port. Under Normal, the resources are allocated to the onboard serial port. Under ASKIR or IrDA, the resources are allocated to the onboard IR port.

OnBoard Parallel Port (Auto)

This option specifies the base I/O port address for the parallel port on the motherboard.

Parallel Port Mode (ECP)

This option specifies the parallel port mode.

Parallel Port IRQ (Auto)

Use this item to assign either IRQ 5 or 7 to the parallel port.

Parallel Port DMA (Auto)

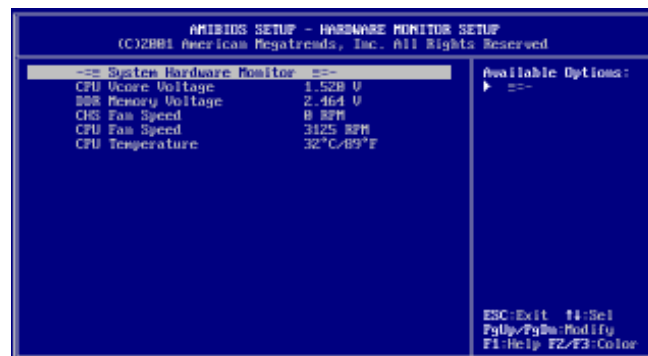
Use this item to assign a DMA channel to the parallel port. The options are 0, 1 and 3.

Onboard PCI IDE (Both)

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

Hardware Monitor Page

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



CPU Vcore Voltage (1.488 V)

This item allows you to adjust the processor's core voltage to give it a small boost.

DDR Memory Voltage (1.792 V)

This item allows you to adjust the DDR memory voltage.

CPU Fan Speed (4560 RPM)

This item indicates the cooling fan speed in RPM.

CPU Temperature (36°C/96°F)

This item displays the current CPU temperature.

Change Supervisor/User Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, 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.

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

PASSWORD DISABLED

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

Auto Configuration with Optimal Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of fail-safe default values. These default values are not very demanding and they should allow your system to function with most kinds of hardware and memory chips.

Note: It is highly recommended that users enter this option to load optimal values for accessing the best performance.

Auto Configuration with Fail Safe Settings

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility:

Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Save Settings and Exit

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

Exit Without Saving

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 Exit Without Saving 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 "Exit Without Saving" 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.

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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.

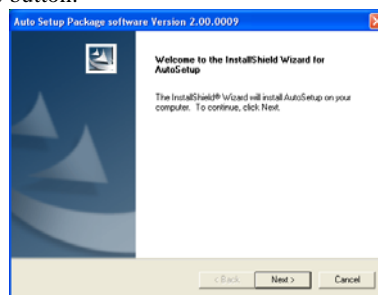
The **Application** button brings up a software menu. It shows the bundled software that this mainboard supports.

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

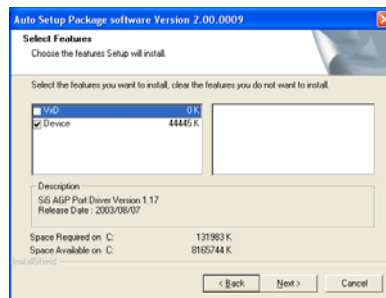
Auto-Installing under Windows 2000/XP

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.