Preface

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Version 1.3b

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1 **Introducing the Mainboard**	Describes features of the mainboard, and provides a shipping checklist. Go to ⇒ page 1
Chapter 2 **Installing the Mainboard**	Describes installation of mainboard components. Go to ⇒ page 7
Chapter 3 **Using BIOS**	Provides information on using the BIOS Setup Utility. Go to ⇒ page 25
Chapter 4 **Using the Mainboard Software**	Describes the mainboard software. Go to ⇒ page 37

Features and Packing List Translations

Liste de contrôle

Comparez ce qui est contenu dans l'emballage de la carte mère avec la liste suivante:

Eléments standards

- Une carte mère
- Un câble plat pour lecteur de disquette et équerre
- Un câble plat pour lecteur IDE et équerre
- Un CD du logiciel d'installation automatique
- Ce manuel utilisateur

Caractéristiques

Processeur	• Supporte le CPU du package de Socket 462 • Supporte les processeurs AMD Athlon XP/Athlon/Duron • Supporte le Bus Frontal de 333 MHz
Chipset	Les chipsets SiS746 Northbridge et SiS963 Southbridge sont basés sur une architecture novatrice et dimensionnable avec une fiabilité et des performances prouvées.
Mémoire	• Deux logements DIMM 184 broches pour modules mémoire DDR • Supporte le bus mémoire DDR jusqu'à 400 MHz • La mémoire maximum installée est 2Go **Remarque:** Vous pouvez travailler sur la DDR400 en surfréquençage, mais il n'est pas garanti qu'elle fonctionnera dans des conditions d'utilisation normales.
Logements d'Extension	• Un logement CNR (Communications and Networking Riser) pour insérez des cartes riser spéciales avec fonctionnalité Audio/Modem • Trois logements PCI 32 bits pour interface de bus conforme PCI 2.2
Canaux IDE internes	• Canaux IDE PCI Primaires et Secondaires • Support pour modes PIO (programmable input/output) • Support pour modes Multiword DMA • Support pour Maîtrise de Bus et modes Ultra DMA 100/133
Alimentation & Gestion d'Alimentation	• Connecteur d'alimentation ATX • Conforme aux exigences ACPI 1.0b et APM 1.2, alimentation clavier activée/désactivée • Supporte l'Alarme RTC, Réveil Sur Modem, Réveil AC97 et Réveil USB
Spécification VGA Intégrée	• GPU (Graphics Processing Unit) – L'horloge GPU Xabre 200 AGP8X 256 bits fonctionne à partir de 200MHz • MÉMOIRE D'AFFICHAGE – La DDR interne intégrée de 64Mo fonctionne à

	partir de 400MHz (DDR400) • CARACTÉRISTIQUES DU MOTEUR 3D – Supporte Direct 3D version 8.1; pixel shader version 1.3 – Supporte AGP 8X pour récupération de texture/vertex – Transformation de Géométrie VLIW à Virgule flottante 32 bits intégrée/Eclairage (T/L) et moteur d'installation de triangle – Pipeline de rendu programmable 4 pixels intégré et 8 unités de texture (4P8T) – Supporte jusqu'à une taille de texture de 2048x2048 – Moteur de rendu automatique stéréo matériel intégré – Supporte plein écran 2X/4X anticrénelage • CARACTÉRISTIQUES DE MOTEUR 2D – Accélérateur Direct Draw Intégré – Conforme aux standards MPEG-2 MP @ ML – Session de compensation de déplacement intégrée – Supporte une vitesse de décodage allant jusqu'à 20Mbit/sec – Lecture Direct DVD vers TV – Supporte des fenêtres vidéo simples avec fonction de superposition – Supporte la fonction de superposition graphique et vidéo – Supporte la superposition de lecture de sous-image DVD – RAM de correction Gamma indépendante intégrée • RÉSOLUTION – Supporte les modes graphiques de super haute résolution des standards VESA, jusqu'à 2048x1536x32 bpp
Codec Audio AC97	• L'architecture matérielle 6-CH permet au southbridge multi-canal de lire l'audio 6CH • Compatible Intel® AC'97 (REV. 2.2), conforme aux exigences de Microsoft® PC2001 • Tampon d'écouteur intégré et PLL interne, le dernier cristal aditionnel d'économie • Lignes d'entrée/ sortie arrière partageant la même prise ; Centre/basse partageant la prise MIC • Support de SORTIE S/PDIF numérique • CRL® 3D: HRTF basé BS3D compatible moteur audio
Ports E/S Internes	La carte mère possède un jeu complet de ports d'E/S et de connecteurs: • Deux ports PS/2 pour souris et clavier • Un port série • Un port VGA • Un port parallèle • Port IEEE1 • Six ports USB (quatre ports fond de panier, prises USB internes offrant deux ports supplémentaires)— **USB2.0** • Prises audio pour microphone, ligne d'entrée et ligne de sortie

Surveillance Matérielle	Surveillance matérielle intégrée pour températures CPU & Système, vitesses de ventilateur et voltages de carte mère.
ROM Flash Interne	Supporte la configuration Plug & Play de périphériques et de cartes d'extension
LAN Ethernet intégré (optionnel)	• Solution de Couche Physique 10Base-TX/100Base-T • Double Vitesse – 100/10 Mbps • Interface MII vers Contrôleur Ethernet/Configuration & Etat • 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 0.95 • 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 • 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
IEEE 1394a (optionnel)	• Support entièrement les provisions de IEEE1394a-1995 pour bus série à hautes performances et le standard P1394a draft 2.0 • Offre trois ports câbles entièrement conformes à 100/200/400 Mbits/s et disponible avec un, deux ou trois ports • Supporte la barrière d'isolation électrique 1394a Annex J optionnelle à l'interface de liaison PHY • Support la fonction de coupure de courant pour économiser l'énergie en application alimentée par batterie • Information de signalisation de classe d'alimentation de nœud pour la gestion d'alimentation du système
Microprogramme BIOS	Cette carte mère utilise AMI BIOS qui permet aux utilisateurs de configurer de nombreuses caractéristiques du système comprenant les suivantes: • Gestion d'alimentation • Alarmes de réveil • Paramètres de CPU et synchronisation de mémoire • Synchronisation de CPU et de mémoire Le microprogramme peut aussi être utilisé pour définir les paramètres pour les vitesses d'horloges de différents processeurs.

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

Checkliste

Vergleichen Sie den Packungsinhalt des Motherboards mit der folgenden Checkliste:

Standard Items

- Ein Motherboard
- Ein Bandkabel und eine Halteklammer für Diskettenlaufwerke
- Ein Bandkabel und eine Halteklammer für IDE-Laufwerke
- Eine Auto-Installations-Support-CD
- Dieses Benutzerhandbuch

Features

Prozessor	• Unterstützt Sockel 462 Gehäuse-CPU • Unterstützt AMD Athlon XP/Athlon/Duron Prozessoren • Unterstützt 333 MHz Frontside Bus
Chipsatz	Die Chipsätze SiS746 Northbridge- und SiS963 Southbridge-basieren auf einer innovativen und skalierbaren Architektur mit bewiesener Verlässlichkeit und Leistungsfähigkeit.
Speicher	• Zwei 184-pin DIMM Steckplätze für DDR Speichermodule • Unterstützt DDR mit bis zu 400 MHz Speicher-Bus • Maximal auf 2GB Speicher erweiterbar **Bitte beachten:** DDR400 kann im übertakteten Zustand verwendet werden, es gibt jedoch keine Garantie, dass diese auch im Normalbetrieb funktionieren.
Integrierte IDE-Kanäle	• Primäre und sekundäre PCI IDE-Kanäle • Unterstützung für PIO (Programmable Input/Output) Modi • Unterstützung für Multiword DMA-Modus • Unterstützung für Bus-Mastering und Ultra DMA 100/133-Modus
Erweiterungs-Steckplätze	• Ein CNR-Steckplatz (Communications and Networking Riser) für besondere Riser-Karten mit Audio/Modem-Anwendungsgebiet • Drei 32-bit PCI-Steckplätze für PCI 2.2-entsprechende Bus-Interfaces
Stromversorgung & Energieverwaltung	• ATX-Stromversorgungsanschluss • Entspricht den Anforderungen von ACPI 1.0b und APM 1.2, verfügt über Tastaturstrom An/Aus-Funktion • Unterstützt RTC-Alarm, Wake On Modem, AC97 Wake-Up und USB Wake-Up
Eigenschaften der integrierten VGA	• GPU (Graphics Processing Unit, Grafikprozessor) – Xabre 200 AGP8X 256-bit GPU auf 200MHz • GRAFIKSPEICHER – Eingebaute On-Board 64MB DDR Speicher auf 400MHz (DDR400) • EIGENSCHAFTEN DER 3D-ENGINE – Unterstützt Direct 3D Version 8.1; Pixel-Shader Version 1.3 – Unterstützt AGP 8X für Textur/Vertex-fetch – Eingebaute 32-bit floating point VLIW Geometry

	Transform/Lighting (T/L) und Triangle-Setup-Engine – Eingebaute programmierbare 4-Pixel-Rendering-Leitungen und 8 Textureinheiten (4P8T) – Unterstützt Texturen bis zur Größe von 2048x2048 – Eingebaute Hardware stereo Auto-Rendering-Engine – Unterstützt 2X/4X Vollszenen-Anti-Alias • EIGENSCHAFTEN DER 2D-ENGINE – Eingebauter Direct Draw Accelerator – Entspricht MPEG-2 MP @ ML Standards – Eingebaute Motion Compensation Logic – Unterstützt Dekodierung mit Bitraten bis zu 20Mbit/Sek – Direktes DVD-Abspielen auf TV – Unterstützt einzelne Videofenster mit Überlapp-Funktion – Unterstützt Grafik und Video Überlappfunktion – Unterstützt DVD Sub-Picture Abspielüberlappung – Eingebauter, unabhängiger Gammakorrektur-RAM • AUFLÖSUNG – Unterstützt VESA-Standards im Superhohen Grafikauflösungsbereich bis zu 2048x1536x32 bpp
AC97 Audio Codecs	• 6-CH Hardwareaufbau erlaubt der Multi-Kanal Southbridge 6CH-Audio abzuspielen • Intel® AC'97 (REV. 2.2) kompatibel, entspricht den Anforderungen von Microsoft® PC2001 • Eingebauter Kopfhörerspeicher und interne PLL, letzteres erspart zusätzliche Kristalle • Line-in/rear-out teilen den gleichen Anschluß; Center/bass teilen sich den MIC-Anschluss • Unterstützt digitales S/PDIF OUT • CRL® 3D: Auf HRTF basierende, BS3D kompatible Audio-Engine
Onboard I/O-Schnittstellen	Das Mainboard verfügt über einen kompletten Satz von I/O-Schnittstellen und Anschlüssen: • Zwei PS/2-Steckplätze für Maus und Tastatur • Eine serielle Schnittstelle • Eine VGA-Schnittstelle • Eine parallele Schnittstelle • Zwei IEEE1394a Schnittstellen (eine auf der Rückseite, ein onboard IEEE1394a-Header) • Sechs USB- Schnittstellen (vier auf der Rückseite, onboard USB-Header für zwei weitere Steckplätze)— USB2.0 • Audioanschlüsse für Mikrofon, Line-in und Line-out
Hardware-überwachung	Integrierte Hardwareüberwachungsschaltung unterstützt die Überwachung von Temperatur, Energie und Lüftergeschwindigkeit.
Onboard Flash ROM	Unterstützt Plug & Play-Konfiguration von Peripheriegeräten und Erweiterungskarten.

Internes Ethernet LAN (optional)	• 10Base-TX/100Base-T Physical Layer Solution • Zwei Geschwindigkeiten – 100/10 Mbps • MII-Interface für Ethernet Kontrolle, Konfiguration und Statusanzeige • Automatische Netzwerkerkennung: 10/100, Volles/Halbes Duplex • Entspricht allen relevanten IEEE802.3, 10Base-T und 100Base-TX Standards
USB 2.0	• Entspricht Universal Serial Bus Specification Revision 2.0 • Entspricht Intels Enhanced Host Controller Interface Specification Revision 0.95 • Entspricht Universal Host Controller Interface Specification Revision 1.1 • PCI-Multifunktionsgerät besteht aus zwei UHCI Host Controller-Cores für Voll/Teilgeschwindigkeits-Signale und einem EHCI Host Controller-Core für Hochgeschwindigkeits-Signale • Root Hub besteht aus 4 Downstream-Ports mit integrierten Physical Layer-Transceivers, für gemeinsame Nutzung von UHCI- und EHCI Host Controller • Unterstützt PCI-Bus Power Management Interface Specification Release 1.1 • Legacy Support für alle Downstream-Ports
IEEE 1394a (optional)	• Vollständige Unterstützung der Bereitstellung von IEEE 1394a-1995 für Hochleistungs-Serial Bus und P1394a Entwurf 2.0 Standard • Bietet drei vollständig kompatible Kabelanschlüsse zu 100/200/400 Mbits/s und arbeitet im Ein-, Zwei- oder Drei-Anschluss Modus • Unterstützt optionale 1394a Annex J- elektrische Isolationsbarriere beim PHY-Link-Interface • Unterstützt Abschaltfunktion, um in den batteriebetriebenen Anwendungen Energie zu sparen • Signalisieren von Informationen zur Netzknoten-Spannungsklasse für die Energieverwaltung des Systems
BIOS Firmware	Dieses Mainboard setzt das AMI BIOS ein, mit dem der Anwender viele Systemeigenschaften selbst konfigurieren kann, einschließlich der folgenden: • Energieverwaltung • Wake-up-Alarm • CPU-Parameter und Speichertiming • CPU- und Speichertiming Mit der Firmware können auch Parameter für verschiedene Prozessortaktgeschwindigkeiten eingestellt werden..

Bitte beachten: *Bestimmte Hardwarespezifikationen und Teile der Softwareausstattung können ohne weitere Ankündigung abgeändert werden.*

Lista di controllo

Comparate il contenuto della confezione della scheda madre con la seguente lista di controllo:

Articoli standard

- Una scheda madre
- Un cavo a nas`tro per il drive dischetti
- Un cavo a nastro IDE
- Un CD di supporto software auto-installante
- Un modulo di ritenzione

Caratteristiche

Processore	• Supporto per CPU Socket 462 • Supporta processori AMD Athlon XP/Athlon/Duron • Supporta Front Side Bus a 333 MHz
Chipset	I chipset SiS746 e SiS963 southbridge sono basati su un'architettura innovativa e scalabile di provata affidabilità e di eccellenti prestazioni.
Memoria	• Due slot DIMM a 184-pin per moduli di memoria DDR • Supporta DDR fino a 400 MHz di bus di memoria • Memoria massima installata 2GB **Note**: È possibile modificare il DDR400 effettuando un overclocking, ma non si garantisce che funzioni normalmente.
Opzioni di espansione	• Uno slot CNR (Communications and Networking Riser) per inserire schede riser speciali con funzionalità Audio/Modem • Tre slot a 32-bit PCI per interfaccia bus compatibile PCI 2.2
Canali IDE a bordo	• Canali PCI IDE primari e secondari • Supporto per le modalità PIO (Programmable input/output) • Supporto per le modalità multiword DMA • Supporto per le modalità Bus Mastering e Ultra DMA ATA 100/133
Alimentazione & Risparmio energia	• Connettore ATX per alimentazione • Conforme ai requisiti ACPI 1.0b e APM 1.2, accensione spegnimento tastiera. • Supporto per allarme RTC, Wake On Modem, AC97 Wake-Up e Wake-Up USB
Specifiche VGA integrate	• GPU (Graphic Processing Unit) – Clock GPU Xabre 200 AGP8X 256-bit eseguito a 200MHz • MEMORIA DISPLAY – 64MB DDR integrati a bordo eseguiti a 400MHz (DDR400) • CARATTERISTICHE MOTORE 3D – Supporta Direct 3D versione 8.1; pixel shader versione 1.3 – Supporta AGP 8X per recupero testo/vertex – Punto flottante integrato a 32-bit motore

	impostazione triangolo e VLIW Geometry Transform/Lighting (T/L) – Pipeline di rendering programmabili integrati a 4 e 8 unità texture (4P8T) – Supporta fino a 2048x2048 dimensioni di texture – Motore rendering automatico stereo hardware integrato – Supporta antialiasing 2X/4X full scene • CARATTERISTICHE MOTORE 2D – Acceleratore Direct Draw integrato – Compatibile standard MPEG-2 MP @ ML – Logica di compensazione movimento integrata – Supporta velocità decodifica bit fino a 20Mbit/sec – Supporta riproduzione da Direct DVD a TV – Supporta finestre video singole con funzione overlay – Supporta funzione overlay grafica e video – Supporta overlay riproduzione sotto immagine DVD – RAM indipendente di correzione Gamma • RISOLUZIONE – Supporta le modalità grafiche ad alta risoluzione standard VESA fino a 2048x1536x32 bpp
AC97 Audio Codec	• Architettura hardware 6-CH permette al southbridge multicanale la riproduzione audio 6CH • Compatibile Intel® AC'97 (REV. 2.2) conforme ai requisiti Microsoft® PC2001 • Buffer per auricolare integrato e PLL interno, quest'ultimo risparmiando ulteriori cristalli. • La linea ingresso/uscita posteriore condividono lo stesso jack; centrale/basso condividono il jack MIC • Supporto Digital S/PDIF OUT • Motore audio CRL® 3D: HRTF compatibile BS3D
Porte I/O integrate	La scheda madre è dotata da una serie completa di porte e connettori I/O: • Due porte PS/2 per tastiera e mouse • Una porta seriale • Una porta VGA • Una porta parallela • Due porte IEEE1394a (una sul pannello posteriore, e un terminale IEEE1394a integrato) • Sei porte USB (quattro porte sul pannello posteriore, terminali USB a bordo che offrono due porte extra) – USB 2.0 • Jack audio per microfono, ingresso linea e uscita linea
Monitoraggio hardware	Monitoraggio hardware integrato per la temperatura di sistema e CPU, velocità della ventola e tensioni della scheda madre.
Flash ROM a bordo	Supporta la configurazione Plug&Play delle periferiche e schede di espansione.

ETHERNET LAN integrata (opzionale)	• Soluzione del layer fisico 10Base-TX/100Base-T • Doppia velocità – 100/10 Mbps • Interfaccia MII Interface con la scheda di controllo/configurazione & stato Ethernet • Negoziazione automatica: 10/100, Full/Half Duplex • Conforme a tutti gli standard applicabili 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 0.95 • 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 porto hub di base consiste di 4 porte downstream con ricetrasmittenti integrati nel layer fisico condivisi dalla scheda di controllo interfaccia UHCI e EHCI • Supporto per interfaccia risparmio energia bus PCI specifiche release 1.1 • Supporto per tutte le porte downstream precedenti
IEEE 1394 (opzionale)	• Piena compatibilità con le specifiche IEEE1394 - 1995 per bus seriale ad alte prestazioni e standard P1394a draft 2.0. • Fornisce due porte compatibili cavo a 100/200/400 Mbit/s e disponibili con una o due porte • Supporta la barriera di isolamento elettrica opzionale 1394 Annex J in prossimità dell'interfaccia PHY-link • Supporta la funzione di spegnimento per conservare energia nell'uso con batterie. • Segnalazione informazioni classe di potenza del nodo per la gestione energetica
Firmware BIOS	Questa scheda madre adotto un BIOS AMI che permette agli utenti di configurare le caratteristiche principali del sistema, inclusi: • Gestione energia • Allarmi wake up • Parametri CPU • Temporizzazione CPU e memoria Il firmware può anche essere usato per impostare i parametri per diverse velocità di clock.

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

Lista de Verificación

Compare los contenidos del paquete de la placa principal con la sigte. lista:

Ítems Estándares

- Una placa principal
- Un cable cinta del lector de diskette
- Un cable cinta de la unidad IDE
- Un CD de soporte en software de autoinstalación
- Este manual del usuario

Características

Procesador	• Soporta CPU de paquete de Socket462 • Soporta procesadores AMD Athlon XP/Athlon/Duron • Soporta Bus de Lado Frontal 333 MHz
Chipset	Los chipsets SiS746 Northbridge y SiS963 Southbridge se basan de una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.
Memoria	• Dos ranuras 184-pin DIMM para módulos de memoria DDR • Soporta DDR hasta bus de memoria de 400 MHz • Memoria máxima instalada es 2GB **Nota:** Puede trabajar en DDR400 con sobrecronometraje, pero no se le garantiza una operación normal.
Ranuras de Expansión	• Una ranura CNR (Communications and Networking Riser) para insertar a las tarjetas de receptores especiales con la función de Sonido/Módem • Tres ranuras 32-bit PCI para interfaz de bus frontal PCI 2.2-conforme
Canales IDE abordo	• Canales PCI IDE primario y secundario • Soporte para modos PIO (entrada/salida programable) • Soporte para el modos de Multiword DMA • Soporte para Bus Mastering y el modos Ultra DMA 100/133
Suministro de Energía & Administración de Energía	• Conector de suministro de energía ATX • Satisface los requisitos ACPI 1.0b y APM 1.2, encendido/apagado de teclado • Soporta Alarma RTC, Despertar En Módem, Despertar AC97, y Despertar USB
Especificación VGA Integrada	• GPU (Unidad de Procesamiento de Gráficas/Graphics Processing Unit) – Reloj Xabre 200 AGP8X 256-bit GPU corre de 200MHz • MEMORIA DE MUESTRA – 64MB DDR incoporado abordo corre de 400MHz (DDR400) • CARACTERÍSTICAS DE MOTOR 3D – Soporta Direct 3D versión 8.1; pixel shader versión 1.3 – Soporta AGP 8X para textura/vertex fetch – 32-bit punto flotante incorporado.

	Transformación/Iluminación de Geometría VLIW (T/L) y motor de setup triangular – tuberías de rendimiento programable de 4 pixel incorporadas y 8 unidades de textura (4P8T) – Soporta hasta tamaño de textura 2048x2048 – Motor de rendimiento de sonido estéreo de hardware incorporado – Soporta 2X/4X anti-aliasing de escena completa • CARACTERÍSTICAS DE MOTOR 2D – Direct Draw Accelerator incorporado – Conformidad con las normas MPEG-2 MP @ ML – Registro de compensación de movimiento incorporado – Soporta hasta descodificación de índice de bit de 20Mbit/seg – Reproducción Direct DVD a TV – Soporta ventanas de vídeo singulares con función de solape – Soporta función de solape de gráficas y vídeo – Soporta solape de reproducción de sub-imagen en DVD – RAM de corrección de Gama independiente incorporado • RESOLUCIÓN – Soporta normas VESA de modos de gráficas de resolución super alta, hasta 2048x1536x32 bpp
Codec de Sonido AC97	• Arquitectura de hardware 6-CH permite southbridge multicanal para reproducir sonido 6CH • Compatible con Intel® AC'97 (REV. 2.2), satisface los requisitos de Microsoft® PC2001 • Buffer de auriculares incorporado y PLL interno, que ahorra el cristal adicional • Entrada de línea/salida en dorso comparten la misma clavija, Centro/Bajo comparten la clavija MIC • Soporta Digital S/PDIF OUT • CRL® 3D: HRTF basado de motor de sonido compatible de BS3D
Puertos I/O abordos	La placa principal tiene un juego completo de puertos I/O y conectores: • Dos puertos PS/2 para ratón y teclado • Un puerto serial • Un puerto VGA • Un puerto paralelo • Dos puertos IEEE1394a (un puerto de panel trasero, un cabezal de IEEE1394a abordo) • Seis puertos USB (cuatro puertos de panel trasero, cabezales USB abordos que proveen dos puertos extras)— USB2.0 • Clavijas de sonido para micrófono, entrada y salida de línea
Monitorización de Hardware	Monitor de hardware incorporado para las temperaturas de CPU & Sistema, velocidades de ventilador y voltajes de la placa principal.
Flash ROM	Supports Plug and Play configuration of peripheral devices and expansion cards.

Abordo	
Ethernet LAN Incorporado (opcional)	• Solución de Capa Física 10Base-TX/100Base-T • Velocidad Dual – 100/10 Mbps • Interfaz MII al Controlador de Ethernet/Configuración & Estado • Autonegociación: 10/100, Completo/Medio Duplex • Satisface todas las normas de IEEE802.3, 10Base-T y 100Base-TX aplicables
USB 2.0	• Conforme con la Especificación Bus Serie Universal Edición 2.0 • Conforme con la Especificación Interfaz de Controlador de Receptor Mejorado de Intel Edición 0.95 • Conforme con la Especificación Interfaz de Controlador de Receptor Universal Edición 1.1 • Componente PCI multi-función compuesto de dos centros Controladores de Interfaz UHCI para señalización de velocidad total-/baja- y un centro Controlador de Interfaz EHCI para señalización de alta velocidad • Hub Raíz compuesto de 4 puertos de frente a la corriente con receptor transmisor de nivel físico integrado y compartido por UHCI y Controlador de Receptor EHCI • Soporta Especificación PCI-Bus Interfaz de Administración de Energía edición 1.1 • Soporte antiguo para todos los puertos de frente a la corriente
IEEE 1394a (opcional)	• Suministro de apoyo total de IEEE1394a-1995 para bus de serie de alto rendimiento y la P1394a diseño 2.0 convencional • Provee tres puertos de cable plenamente conformes a 100/200/400 Mbits/s y disponible con uno, dos o tres puertos • Soporta 1394a Anexo J barrera de aislamiento eléctrico opcional a PHY-Interfaz link • Soporta característica de corte de corriente para conservar energía en aplicaciones que funcionan con pilas • Nodo energía-señalización de información de categoría para la administración de energía del sistema
BIOS Firmware	Dieses Mainboard setzt das AMI BIOS ein, mit dem der Anwender viele Systemeigenschaften selbst konfigurieren kann, einschließlich der folgenden: • Energieverwaltung • Wake-up-Alarm • CPU-Parameter und Speichertiming • CPU- und Speichertiming Mit der Firmware können auch Parameter für verschiedene Prozessortaktgeschwindigkeiten eingestellt werden.

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

チェックリスト

下記のチェックリストに列挙されている製品が同封されているかを確認してください。

標準同封アイテム

- メインボード　1 枚
- ディスクドライブ用リボンケーブル　1 個
- IDE ドライブ用リボンケーブル　1 個
- 自動インストール機能対応ソフトウェア CD　1 枚
- ユーザーマニュアル

製品特徴

プロセッサ	• Socket462 パケット CPU をサポート • **Athlon XP/Athlon/Duron** プロセッサをサポート • **333** MHz システムバスをサポート
チップセット	SiS746 Northbridge と SiS963 Southbridge チップセットは、革新的かつ拡張性の高いアーキテクチャを採用し、高い安定性およびパフォーマンスが保証されています。
メモリ	• DDR メモリモジュール用の 2 つの 184 ピン DIMM スロット • 最大 400 MHz メモリバスまで DDR をサポート • インストール可能な最大メモリは 2GB **メモ:** オーバークロックにより DDR400 に達することができますが、正常な操作は保証できません。
拡張スロット	• オーディオ/モデム機能を搭載した特殊ライザカード用の CNR (Communications and Networking Riser) スロットを搭載 • PCI2.2 準拠バスインターフェース用の 3 つの 32 ビット PCI スロット
オンボード IDE チャネル	• プライマリおよびセカンドリ PCI IDE チャネルを提供しています • PIO (programmable input/output) モードをサポートします • マルチワード DMA モードをサポートします • バスマスタ機能及び Ultra DMA **100/133** モードをサポートします
電源と電源の管理	• ATX 電源コネクタ • ACPI 1.0b および APM 1.2 要件、キーボード電源オン/オフに対応 • RTC アラーム、Wake On モデム、AC97 Wake-Up、USB Wake-Up をサポート
統合 VGA 仕様	• GPU (Graphics Processing Unit) – 200MHz からの Xabre 200 AGP8X 256 ビット GPU クロック

	• ディスプレイメモリ – 400MHz からの内蔵 64MB DDR オンボードメモリ (DDR400) • 3D エンジン機能 – Direct 3D バージョン 8.1、ピクセルシェイダー バージョン 1.3 をサポート – テクスチャ/バーテックスフェッチのための AGP 8X をサポート – 内蔵 32 ビットフローティングポイント VLIW ジオメトリ転送/照明 (T/L) とトライアングルセットアップエンジン – 内蔵の 4 ピクセルプログラム可能レンダリングパイプラインと 8 テクスチャユニット (4P8T) – 最大 4078x1048 テクスチャサイズまで対応 – 内蔵ハードウェアステレオ自動レンダリングエンジン – 2X/4X フルシーン アンチエリアス対応 • 2D エンジン機能 – 内蔵 Direct Draw アクセレレータ – MPEG-2 MP @ ML 標準対応 – 内蔵モーション補正 logig – 最高 20M ビット/秒のビットレートでコーディングをサポート – DVD から TV への直接再生 – オーバーレイ機能付シングルビデオウィンドウに対応 – グラフィックおよびビデオオーバーレイ機能に対応 – DVD サブピクチャ再生オーバーレイに対応 – 内蔵された独立ガンマ修正 RAM • 解像度 – VESA 標準超高解像度グラフィックモードで 2048x1536x32 bpp に対応
AC97 オーディオコーデック	• 6-CH ハードウェア構造で複数チャンネルの Southbridge による 6CH オーディオ再生を実現 • Intel® AC’97 (REV. 2.2) 準拠、Microsoft® PC2001 要件に符合 • 内蔵イヤフォンバッファと内部 PLL。後者は追加クリスタルを節約 • ライン入力/リア出力が同じジャックを共有。中央/ベースが同じ MIC ジャックを共有 • デジタル S/PDIF 出力サポート • CRL® 3D:HRTF ベースの BS3D 対応オーディオエンジン
オンボード I/O ポート	このメインボードにはフルセットの I/O ポートおよびコネクタが搭載されています: • マウスおよびキーボード向け PS/2 ポート X 2 • シリアルポート X 1 • VGA ポート X 1 • パラレルポート X 1 • IEEE1 ポート X 2

	• 6 つの USB ポート（背面に 4 ポート、オンボード USB ヘッダーが 2 つの外部ポートを提供)- USB2.0 • マイクロフォン、Line In、Line Out 向けのオーディオジャック
ハードウェアのモニター機能	CPU やシステムの温度、ファンスピード、メインボードの電圧等のハードウェアの状態を監視します。
オンボードフラッシュ ROM	周辺機器や拡張カードの Plug&Play 設定情報を保存します。
内蔵イーサネット LAN (optional)	• 10Base-TX/100Base-T 物理レイヤーソリューション • デュアルスピード - 100/10 Mbps • イーサネットコントローラ/設定&状態への MII インターフェース • 自動ネゴシエーション:10/100 全/半二重 • すべての IEEE 802.3、10Base-T、100Base-Tx 標準に対応
USB 2.0	• USB2.0 仕様に準拠 • Intel の EHCI (Enhanced Host Controller Interface) 0.95 仕様に準拠 • UHCI (Universal Host Controller Interface) 1.1 仕様に準拠 • PCI 多機能デバイスは、高速シグナリング用に 2 つの UHCI ホストコントローラコアで構成 • ルートハブは UHCI と EHCI ホストコントローラ共用の統合物理レイヤー受信機を搭載したダウンストリーム専用の 4 つのポートから構成 • PCI バス電源管理インターフェース 1.1 仕様 • 全てのダウンストリーム専用ポートにレガシーサポート
IEEE 1394a (optional)	• 高性能シリアルバスと P1394a ドラフト 2.0 基準のための IEEE1394a-1995 提供に完全対応 • 100/200/400 Mbits/秒の完全準拠ケーブル X 3 を提供、1、2、3 ポートで使用可能 • PHY-リンクインターフェースでオプショナル 1394a Annex J 電子隔離バリアをサポート • バッテリー操作中の節電のためにパワーダウン機能をサポート • システム電源管理用のノート電源クラス情報シグナル
BIOS ファームウェア	本メインボードは次ぎのシステム機能を含めた設定をすることができる AMIBIOS を採用しています： • 電源管理 • Wake-up アラーム • CPU パラメータおよびメモリタイミング • CPU およびめもりタイミング その他に、各種プロセッサクロック速度のパラメータを設定することができます。

メモ: *一部のハードウェア仕様及びソフトウェアアイテムは予告なく変更されることがあります。*

품목 목록

다음 품목들이 메인보드 패키지에 모두 포함되어 있는지 확인해 보십시오:

표준 품목

- 메인 보드 1 개
- 디스켓 드라이브 리본 케이블 1 개
- IDE 드라이브 리본 케이블 1 개
- 자동 설치 소프트웨어 지원 CD 1 개
- 본 사용자 설명서

기능

프로세서	• 소켓 462 패키지 CPU 지원. • AMD Athlon XP/Athlon/Duron 프로세서 지원 • 333 MHz Front-Side Bus 지원
칩셋	SiS746 Northbridge 및 SiS963 Southbridge 칩셋은 혁신적이고 범위성을 지닌 아키텍처를 기초로 하여 인정된 신뢰성과 성능을 지닌다.
메모리	• DDR 메모리 모듈용 184 핀 DIMM 슬롯 2 개 • DDR 을 최대 400 MHz 메모리 버스까지 지원 • 최대 설치 메모리 2GB **노트:** 오버 클록킹으로 DDR400 을 작동할 수는 있으나 일반 작동 시 실행될지는 보장할 수 없음.
확장 슬롯	• 오디오/모뎀 기능을 지닌 스페셜 라이저 카드 삽입용 CNR (Communications and Networking Riser) 슬롯 1 개 • PCI 2.2 호환 버스 인터페이스용 32 비트 PCI 슬롯 3 개
Onboard IDE 채널	• 주, 부 PCI IDE 채널 • PIO (programmable input/output) 모드 지원 • Multiword DMA 모드 지원 • Bus Mastering 및 Ultra DMA 100/133 모드 지원
파워 써플라이 및 전원 관리	• ATX 파워 써플라이 커넥터 • ACPI 1.0b 및 APM 1.2 요구 사항 부합, 키보드 전원 on/off • RTC 알람, Wake On 모뎀, AC97 Wake-Up 및 USB Wake-Up 지원
통합 VGA 사양	• GPU (Graphics Processing Unit) – 200MHz 실행 Xabre 200 AGP8X 256-bit GPU 클록 • 디스플레이 메모리 – 400MHz (DDR400) 실행 내장 64MB DDR onboard • 3D 엔진 특징

	– Direct 3D 버전 8.1 지원; pixel shader 버전 1.3 – texture/vertex fetch 용 AGP 8X 지원 – 내장 32 비트 플로팅 포인트 VLIW Geometry Transform/Lighting (T/L) 및 트라이앵글 셋업 엔진 – 내장 4 픽셀 프로그램 가능한 랜더링 파이프라인 및 8 개의 텍스쳐 유닛 (4P8T) – 최대 2048x2048 텍스쳐 크기 지원 – 내장 하드웨어 스테레오 오토 랜더링 엔진 – 2X/4X full scene anti-aliasing 지원 • 2D 엔진 특징 – Direct Draw 가속기 내장 – MPEG-2 MP @ ML 표준 부합 – 내장 모션 보정 로직 – 최대 20Mbit/sec 비트 속도 디코딩 지원 – DVD 에서 TV 로 바로 재생 – 오버레이 기능의 싱글 비디오 창 지원 – 그래픽 및 비디오 오버레이 기능 지원 – DVD sub-picture 재생 오버레이 지원 – 내장 독립적 감마 수정 RAM 내장 • 해상도 – VESA 표준 고해상도 그래픽 모드 지원, 최대 2048x1536x32 bpp
AC97 오디오 코덱	• 6-CH 하드웨어 아키텍쳐로 멀티 채널 south bridge 의 6CH 오디오 재생 가능 • Intel® AC' 97 (REV. 2.2) 호환, Microsoft® PC2001 요구 사항 부합 • 내장 이어폰 버퍼 및 내부 PLL (이것으로 추가적인 크리스탈을 절약할 수 있다.) • 라인 입력/후면 출력은 같은 잭 공유; 중앙/베이스는 MIC 잭 공유 • 디지털 S/PDIF 출력 지원 • CRL® 3D: HRTF 기반의 BS3D 호환 오디오 엔진
보드 내장 I/O 포트	본 메인보드는 풀 세트의 I/O 포트 및 커넥터가 있다: • 마우스 및 키보드 용 PS/2 포트 2 개 • 시리얼 포트 1 개 • VGA 포트 1 개 • 패러럴 포트 1 개 • IEEE1394a 포트 2 개 (뒷 패널 포트 1 개, 보드 내장 IEEE1394a 해더 1 개) • USB 포트 6 개 (뒷 패널 포트 4 개, onboard USB 해더가 2 개의 추가적 포트 제공)— USB2.0 • 마이크 용 오디오 잭, 라인 입력 및 라인 아웃
하드웨어 모니터링	CPU 및 시스템 온도, 팬 속도 및 메인 보드 전압 감지용 하드웨어 모니터링.
Onboard 플래시 ROM	주변 장치 및 확장 카드의 플러그 앤 플레이 구성 지원.
내장 이더넷 랜 (선택)	• 10Base-TX/100Base-T 물리적 레이어 솔루션 • 듀얼 스피드 – 100/10 Mbps • 이더넷 컨트롤러/구성 및 상태를 위한 MII 인터페이스

	• 자동 설정: 10/100, Full/Half Duplex • IEEE802.3, 10Base-T 및 100Base-TX 표준 부합
USB 2.0	• Universal Serial Bus 2.0 사양 호환 • Intel 의 Enhanced Host Controller Interface.95 사양 호환 • Universal Host Controller Interface 1.1 사양 호환 • 2 개의 UHCI 호스트 컨트롤러 (전속/저속 시그널링 용) 과 1 개의 EHCI 호스트 컨트롤러 (고속 시그널링 용) 로 구성된 PCI multi-function 장치 • UHCI 및 EHCI 호스트 컨트롤러에 의해 공유되는 통합된 물리적 레이어 송수신기와 함께 4 개의 다운 스트림 페이싱 포트로 구성된 루트 허브 • PCI-Bus 전원 관리 인터페이스 1.1 사양 지원 • 모든 다운스트림 페이싱 포트를 지원하는 Legacy
IEEE 1394a (선택 사항)	• 고성능 시리얼 버스 및 P1394a draft 2.0 standard 를 위한 IEEE1394a-1995 규정 지원 • 100/200/400 Mbits/s 에서 1 개, 2 개 또는 3 개의 포트에 사용 가능한 호환 케이블 포트 3 개 제공 • PHY-link 인터페이스에서 1394a Annex J electrical isolation barrier 지원 • 배터리 사용 어플리케이션의 에너지 보존을 위한 절전 기능 지원 • 시스템 전원 관리를 위한 Node power-class 정보 시그널링
BIOS Firmware	이 메인보드는 AMI BIOS 를 사용하여 사용자가 다음과 같은 시스템 기능을 구성할 수 있도록 한다: • 전력 관리 • Wake-up 알람 • CPU 파라미터와 메모리 타이밍 • CPU 와 메모리 타이밍 Firmware 는 각 프로세서 클럭 속도의 파라미터를 설정하는 데도 사용될 수 있다.

노트: *하드웨어 사양 및 소프트웨어 아이템은 사전 통보 없이 변경될 수 있음.*

檢查表

請依下列檢查表，核對主機板包裝之內容：

標準項目

- 主機板一片
- 磁碟機排線一條
- IDE 磁碟機排線一條
- 自動安裝 CD 一片
- 本使用手冊

性能

處理器	• 支援 Socket462 插件型中央處理器 • 支援 AMD Athlon XP/Athlon/Duron 處理器 • 支援 333MHz 的前側匯流排(FSB)
晶片組	**SiS746** 北橋及 **SiS963** 南橋晶片組，採用了獨創且具有擴充功能的架構，能夠提供最佳的穩定性及功能。
記憶體	• 2 個 DDR 記憶體模組 184 針 DIMM 插槽 • 支援 DDR 高達 400MHz 記憶體匯流排 • 合計可支援高達 2GB 的系統記憶容量 **附註:** 可超頻至 DDR400，但是無法保證可執行正常。
擴充插槽	• 1 個 CNR (Communications and Networking Riser) 槽，可插具有音效/數據機功能之特殊 riser cards • 3 個 32 位元 PCI 插槽，相容於 PCI2.2 匯流排介面
內建 IDE 通道	• 包含主 PCI IDE 通道及次 PCI IDE 通道 • 支援 PIO (可程式輸出入) 模式 • 支援 Multiword DMA 模式 • 支援 Bus Mastering 及 Ultra DMA 100/133 模式
電源供應以及電源管理	• ATX 電源供應連接器 • 支援 ACPI1.0b 及 APM1.2 標準，並且支援鍵盤的電源 on/off • 支援 RTC Alarm、 Wake On Modem、 AC97 Wake-Up 及 USB Wake-Up 功能
內建 VGA 規格	• GPU (Graphics Processing Unit) – Xabre 200 AGP8X 256 位元 GPU ，最低頻率從 200MHz 起 • 顯示記憶體 – (DDR400)內建機載 64MB 400MHz DDR (DDR400) • 3D 引擎功能 – 支援 Dierct 3D 8.1 版，像素著色引擎 1.3 版 – 支援 AGP 8X 材質/墨色擷取 – 內建 32 位元幾何浮點特長指令字組(VLIW) 整合轉換/功效(T/L)以及三角構圖引擎 – 內建 4 個可程式化像素繪圖管線以及 8 個貼圖單位

	(4P8T) – 支援高達 2048x2048 材質尺寸 – 內建硬體音響自動繪圖引擎 – 支援 2X/4X 全景反鋸齒功能 • 2D 引擎功能 – 內建 Direct Draw 加速器 – 相容於 MPEG-2 MP @ ML 標準 – 內建動態視訊補償邏輯 – 支援高達每秒 20Mbit 位元還原率 – Direct DVD 電視放影 – 支援具有重疊功能之單一影像視窗 – 支援繪圖與影像重疊功能 – 支援 DVD 子畫面放映重疊功能 – 內建獨立 Gamma 修正設定記憶體 • 解析度 – 支援 VESA 標準超高解析度繪圖模式，高達 2048x1536x32 bpp
AC’ 97 音效解碼/編碼器	• 6 聲道硬體架構，讓多聲道南橋釋放 6 聲道音響 • 相容於 Intel® AC’ 97 (REV. 2.2) ，符合 Microsoft® PC2001 要求 • 內建耳機緩衝器以及內裝具有可保存清晰度之 PLL • Line-in 及 rear out 共享一個音效端，中低音共享一個麥克風音效端 • 支援數位 S/PDIF 輸出 • 相容於 CRL® 3D: HRTF based BS3D 音響引擎
機載 I/O 埠	本主機板完整地支援各種輸出入埠及連接器： • 2 個 PS/2 埠，分供滑鼠及鍵盤連接 • 1 個串列埠 • 1 個 VGA 埠 • 1 個平行埠 • 2 個 IEEE1394a 埠(一個在背面面板，另一個爲機載 IEE1394a 連接頭) • 6 個 USB 埠(4 個在背面面板，另外 2 個埠則由機載 USB 連接器提供) -- USB2.0 • 麥克風、line-in 及 line-out 音效端
硬體監視	內建硬體監視功能，可監控 CPU 及系統的溫度、風扇轉速及主機板電壓。
內建快閃唯讀記憶體	用以儲存有關週邊設備及擴充卡的隨插即用(Plug&Play)設定。
內建乙太區域網路功能(選購)	• 10Base-TX/100Base-T 實體層技術 • 100/10 Mbps 雙速 • 具媒體無關介面(MII)之高速乙太網路控制器，可設定參數及狀態 • 具自動協調功能: 10/100，全雙工/半雙工網路狀態 • 符合 IEEE802.3、10Base-T 以及 100Base-TX
USB 2.0	• 相容於通用序列埠規格 Revision 2.0 • 相容於 Intel 之增強型主控制器介面規格 Revision 0.95 • 相容於通用控制器介面規格 (UHCI) Revision 1.1

	• PCI 多功能裝置具有兩個可高/低速送訊之 UHCI 主控制器管，和一個高速送訊之 EHCI 主控制器管 • 主集線器配有四個下傳埠，下傳埠內建有 UHCI 和 EHCI 主控制器共享的實體層接收器 • 支援 PCI 匯流排電源管理介面規格 release 1.1 • 支援所有舊型下傳埠
IEEE 1394a **(選購)**	• 可完全支援 IEEE 1394a-1995 高傳輸功效之序列埠，並符合 P1394a draft 2.0 標準 • 提供 3 個完全相容之纜線埠，支援高達每秒 100/200/400 Mbit 之傳輸速率，且支援 1/2/3 埠的動作模式 • 支援增購 PHY 連結介面之 1394a Annex J 阻電隔板， • 支援斷電功能，以便在系統以電池做爲電源時，節省電力 • 藉由傳輸節點電源訊息以進行系統電源之管理
BIOS 韌體	本主機板使用了 AMI BIOS ，使用者可藉此對包括下列之系統功能進行設定： • 電源管理 • Wake-up 警示 • CPU 參數及記憶體定時 • CPU 及記憶體的定時 • 數據機的 Wake-up 警示 本 BIOS 也可用以設定各種有關處理器頻率的參數。

附註: *有些硬體規格以及軟體物件將視狀況適當調整，不予另行通知。*

校验表

将本主板的组件内容与以下校验表进行对照：

标准组件

- 一只主板
- 一条磁盘驱动器带状电缆
- 一条 IDE 驱动器带状电缆
- 一张自动安装软件支持光盘
- 本用户手册

特性

处理器	• 支持 Socket462 封装 CPU • 支持 AMD Athlon XP/Athlon/Duron 处理器 • 支持 333 MHz 前端总线
芯片组	SiS746 北桥和 SiS963 南芯片组是基于一种新型的、可扩展的架构，能提供已经证明的可靠性和高性能。
内存	• 2 个用于 DDR 内存条的 184-pin DIMM 插槽 • 支持 400 MHz 存储总线 DDR • 内存最多可达 2GB **说明：**您可以将 DDR400 超频工作 但不保证它能够正常工作。
扩展槽	• 1 个 CNR（通信网络转接）插槽，用来插入具有音频/调制解调器功能的转接卡 • 3 个用于 PCI 2.2 兼容总线接口的 32 位 PCI 插槽
Onboard IDE 通道	• Primary 和 Secondary PCI IDE 通道 • 支持 PIO（可编程输入/输出）模式 • 支持 Multiword DMA 模式 • 支持 Bus Mastering（总线控制）和 Ultra DMA 100/133 模式
电源及电源管理	• ATX 电源接口 • 符合 ACPI 1.0b 和 APM 1.2 规格、键盘电源开/关 • 支持 RTC 报警、调制解调器唤醒、AC97 唤醒和 USB 唤醒
集成 VGA 规格	• GPU（图形处理单元） – Xabre 200 AGP8X 256-位 GPU，最低运行时钟为 200MHz • 显示内存 – 板上内建 64MB DDR，最低运行时钟为 400MHz (DDR400) • 3D 引擎功能 – 支持 8.1 版本 Direct 3D；1.3 版本像素遮光器 – 支持用于纹理/顶点读取的 AGP 8X – 内建 32-位浮点 VLIW 几何多边形转换与光源 (T/L) 及三角设置引擎

	– 内建 4 像素可编程染色管道技术和 8 纹理单元 (4P8T) – 支持 2048x2048 纹理尺寸 – 内建硬件立体声自动染色引擎 – 支持 2X/4X 全景防叠处理 • 2D 引擎功能 – 内建 Direct Draw 加速器 – 符合 MPEG-2 MP @ ML 标准 – 内建运动位移补偿 logig – 支持 20Mbit/sec 位速率解码 – Direct DVD 到 TV 播放 – 支持具有重叠功能的单视频窗口 – 支持图像和视频重叠功能 – 支持 DVD 子图像播放重叠 – 内建独立的图像校正 RAM • 分辨率 – 支持 VESA 标准超高分辨率模式，可到 2048x 1536x32 bpp
AC97 Audio Codec	• 6-CH 硬件结构，允许多通道南桥播放 6CH 音频 • Intel® AC’97 (REV. 2.2) 兼容，符合 Microsoft® PC2001 规格 • 内建耳机缓冲和内部 PLL，后者可节省更多的晶体 • 线入/后置输出共享同一插孔；中置/低音输出共享 MIC 插孔 • 支持数字 S/PDIF OUT • CRL® 3D:基于 HRTF 的 BS3D 兼容音频引擎
Onboard I/O 端口	此主板具有完整的 I/O 端口和插孔： • 2 个用于鼠标和键盘的 PS/2 端口 • 1 个串口 • 1 个 VGA 端口 • 1 个并口 • 2 个 IEEE1394a 端口（主板后面板带 1 个端口，板上 IEEE1394a 接口提供另一个端口） • 6 个 USB 端口（主板后面板带 4 个 USB 端口，板上 USB 接口最多可再提供 2 个端口）— USB2.0 • 麦克风、线入和线出声音插孔
硬件监测	内建硬件监测功能，对 CPU 和系统温度、风扇速度和主板电压进行监测。
Onboard Flash ROM	支持外围设备和扩展卡的即插即用配置。
内建以太网 LAN（可选）	• 10Base-TX/100Base-T 物理层解决方案 • 双速 - 100/10 Mbps • 到以太网控制器的 MII 接口/配置和状态 • 自动侦测：10/100，全/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 0.95 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 • 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
IEEE 1394a（可选）	• 完全支持 IEEE1394a-1995 关于高性能串行总线的规定和 P1394a draft 2.0 标准 • 提供 3 个完全符合的有线端口（速度为 100/200/400 Mbit） 并可运行在一个、两个或三个端口模式下 • PHY-link 接口支持可选的 1394a Annex J 电隔离势垒 • 支持省电功能，以保存电池驱动应用的能量 • 用于系统电源管理的节点电源级信息信令
BIOS	此主板使用 AMI BIOS，可以让用户自己配置以下系统功能： • 电源管理 • 唤醒报警 • CPU 参数和记忆定时 • CPU 和记忆定时 还可用于设置不同处理器时钟速度的参数。

说明：*部分硬件规格和软件项目若有更改恕不另行通知。*

TABLE OF CONTENTS

Chapter 1

Introducing the Mainboard

Introduction

Thank you for choosing the K7S7AG mainboard. This mainboard has a Socket-462 processor for the AMD K7 type of processors. You can install any of these processors on the mainboard. This mainboard supports a system bus speed of 333MHz.

With a measurement of 305 x 224 mm, this mainboard is built using the leading edge technology of SiS746 Northbridge along with SiS963 Southbridge chipsets that supports built-in 6-channel speak-out AC97 Codec, 2 DDR400 (by overclocking) modules up to 2GB system memory.

It also supports the Xabre200 GPU, which integrates a 256-bit 3D/2D graphics engines and motion compensation MPEG 1/MPEGII accelerator. In addition to superior hardware capabilities, the mainboard has one CNR (Communications and Networking Riser) slot to support Audio and Modem application, built-in 10BaseT/100Base TX Network Interface and an advanced full set of I/O ports such as two PS/2 ports for mouse and keyboard, one serial port, one VGA port, one parallel port, one IEEE port and six USB ports (USB 2.0) – consisting of four back-panel ports and onboard USB header USB3 providing two extra ports by connecting the Extended USB Module to the mainboard.

Checklist

Compare the mainboard's package contents with the following checklist:

Standard Items

- One mainboard
- One diskette drive ribbon cable
- One IDE drive ribbon cable
- One auto-install software support CD
- This user's manual

Features

Processor	• Support Socket462 package CPU • Supports AMD Athlon XP/Athlon/Duron processors • Supports 333 MHz Front-Side Bus
Chipset	The SiS746 Northbridge and SiS963 Southbridge chipsets are based on an innovative and scalable architecture with proven reliability and performance.
Memory	• Two 184-pin DIMM slots for DDR memory modules • Support DDR up to 400 MHz memory bus • Maximum installed memory is 2GB **Note:** You can work on DDR400 by overclocking, but there is no guarantee that it will run under normal operation.
Expansion Slots	• One CNR (Communications and Networking Riser) slot to insert special riser cards with Audio/Modem functionality • Three 32-bit PCI slots for PCI 2.2-compliant bus interface
Onboard IDE channels	• Primary and Secondary PCI IDE channels • Support for PIO (programmable input/output) modes • Support for Multiword DMA modes • Support for Bus Mastering and Ultra DMA ATA 100/133 modes
Power Supply & Power Manage-ment	• ATX power supply connector • Meets ACPI 1.0b and APM 1.2 requirements, keyboard power on/off • Supports RTC Alarm, Wake On Modem, AC97 Wake-Up and USB Wake-Up
Integrated VGA Specification	• GPU (Graphics Processing Unit) – Xabre 200 AGP8X 256-bit GPU clock runs from 200MHz • DISPLAY MEMORY – Built-in 64MB DDR onboard runs from 400MHz (DDR400) • 3D ENGINE FEATURES – Supports Direct 3D version 8.1; pixel shader version 1.3 – Supports AGP 8X for texture/vertex fetch – Built-in 32-bit floating point VLIW Geometry Transform/Lighting (T/L) and triangle setup engine – Built-in 4 pixel programmable rendering pipelines and 8 texture units (4P8T) – Supports up to 2048x2048 texture size – Built-in hardware stereo auto rendering engine – Supports 2X/4X full scene anti-aliasing • 2D ENGINE FEATURES – Built-in Direct Draw Accelerator – MPEG-2 MP @ ML standards compliant – Built-in motion compensation logig – Supports up to 20Mbit/sec bit rate decoding – Direct DVD to TV playback – Supports single video windows with overlay function

	– Supports graphics and video overlay function – Supports DVD sub-picture playback overlay – Built-in independent Gamma correction RAM • RESOLUTION – Supports VESA standards super high resolution graphics modes, up to 2048x1536x32 bpp
AC97 Audio Codec	• 6-CH hardware architecture allows multi-channel south bridge to playback 6CH audio • Intel® AC'97 (REV. 2.2) compatible, meeting Microsoft® PC2001 requirements • Built-in earphone buffer and internal PLL, the latter saving additionsl crystal • Line-in/rear out share the same jack; Center/bass share the MIC jack • Digital S/PDIF OUT Support • CRL® 3D: HRTF based BS3D compatible audio engine
Onboard I/O Ports	The mainboard has a full set of I/O ports and connectors: • Two PS/2 ports for mouse and keyboard • One serial port • One VGA port • One parallel port • Two IEEE1394a port (one back-panel port, one onboard IEEE1394a header) • Six USB ports (four back-panel ports, onboard USB headers providing two extra ports)— USB2.0 • Audio jacks for microphone, line-in and line-out
Hardware Monitoring	Built-in hardware monitoring for CPU & System temperatures, fan speeds and mainboard voltages.
Onboard Flash ROM	Supports Plug and Play configuration of peripheral devices and expansion cards.
Built-in Ethernet LAN	• 10Base-TX/100Base-T Physical Layer Solution • Dual Speed – 100/10 Mbps • MII Interface to Ethernet Controller/Configuration & Status • 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 0.95 • 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 • Support PCI-Bus Power Management Interface Specification release 1.1 • Legacy support for all downstream facing ports

IEEE 1394a	• Fully supports provisions of IEEE1394-1995 for high-performance serial bus and the P1394a draft 2.0 standard • Provides two fully compliant cables ports at 100/200/400 Mbits/s and available with one or two ports • Supports optional 1394 Annex J electrical isolation barrier at PHY-link interface • Supports power-down feature to conserve energy in battery powered application • Node power-class information signaling for system power management
BIOS Firmware	This mainboard uses AMI BIOS that enables users to configure many system features including the following: • Power management • Wake-up alarms • CPU parameters • CPU and memory timing The firmware can also be used to set parameters for different processor clock speeds.

Note: *Some hardware specifications and software items are subject to change without prior notice.*

Choosing a Computer Case

There are many types of computer cases on the market. The mainboard complies with the specifications for the ATX system case. Some features on the mainboard are implemented by cabling connectors on the mainboard to indicators and switches on the system case. Ensure that your case supports all the features required. The mainboard can support one or two floppy diskette drives and four enhanced IDE drives. Ensure that your case has sufficient power and space for all the drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the mainboard.

This mainboard has an ATX form factor of 305 x 224 mm. Choose a case that accommodates this form factor.

Mainboard Components

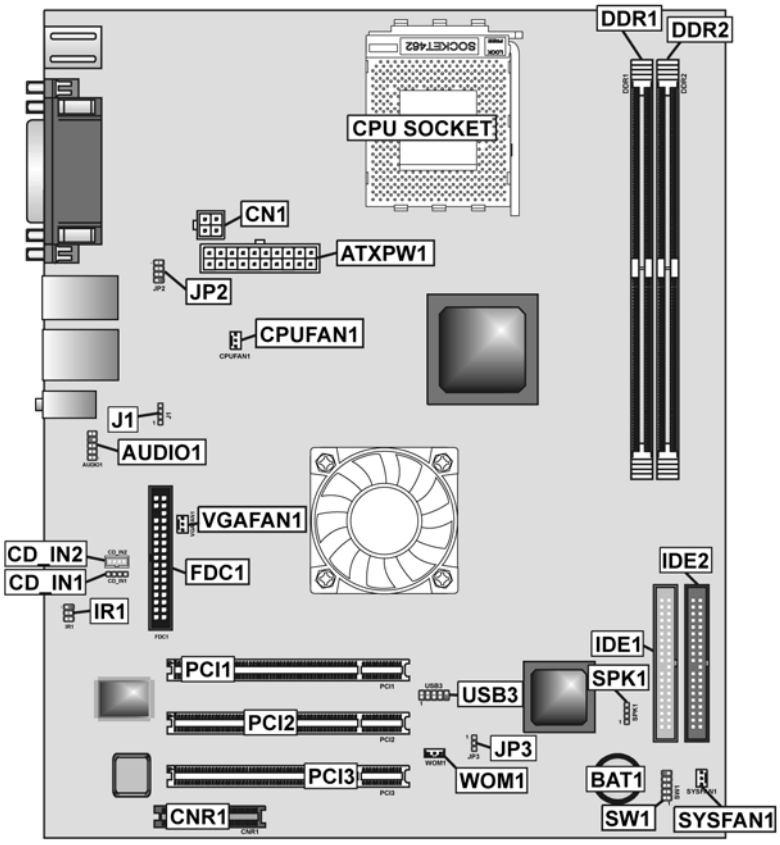


Table of Mainboard Components

Label	Component
ATXPW1	Standard power connector
AUDIO1	Front audio connector
BAT1	Three volt realtime clock battery
CD_IN1	Primary CD-in connector
CD_IN2	Secondary CD-in connector
CN1	Auxiliary power connector for Pentium 4 CPUs
CNR1	Communications Networking Riser slot
CPU SOCKET	Socket 462 for AMD Athlon/Duron CPUs
CPUFAN1	Cooling fan for CPU
DDR1~ DDR2	Two 184-pin DDR SDRAM
FDC1	Floppy disk drive connector
IDE1	Primary IDE channel
IDE2	Secondary IDE channel
IR1	Infrared cable header
J1	Onboard LAN LED connector
JP2	IEEE 1394 header
JP3	Clear CMOS jumper
PCI1 ~ PCI3	Three 32-bit add-on card slots
SPK1	Internal speaker connector
SYSFAN1	System fan connector
SW1	Connector for case front panel switches and LED indicators
USB3	Front Panel USB headers
VGAFAN1	VGA cooling fan
WOM1	Wake On Modem header

This concludes Chapter 1. The next chapter explains how to install the mainboard.

Chapter 2

Installing the Mainboard

Safety Precautions

Follow these safety precautions when installing the mainboard:

- Wear a grounding strap attached to a grounded device to avoid damage from static electricity.
- Discharge static electricity by touching the metal case of a safely grounded object before working on the mainboard.
- Leave components in the static-proof bags they came in.
- Hold all circuit boards by the edges. Do not bend circuit boards.

Quick Guide

This Quick Guide suggests the steps you can take to assemble your system with the mainboards.

The following table provides a reference for installing specific components:

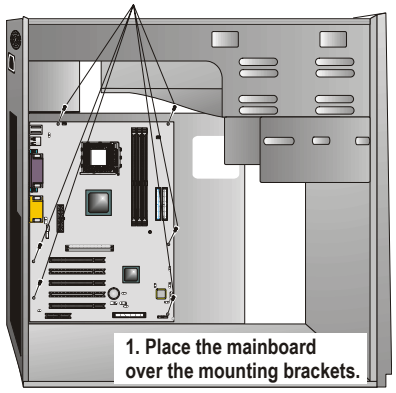
Installing the Mainboard in a Case

Refer to the following illustration and instructions for installing the mainboard in a case:

This illustration shows an example of a mainboard being installed in a tower-type case:

> **Note:** Do not overtighten the screws as this can stress the mainboard.

Most system cases have mounting brackets installed in the case, which correspond to the holes in the mainboard. Place the mainboard over the mounting brackets and secure the mainboard onto the mounting brackets with screws.



Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your mainboard.

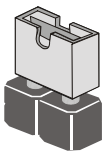
Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the mainboard.

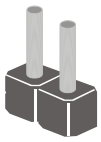
Setting Jumpers

Use the mainboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations below show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

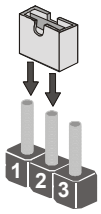


Short



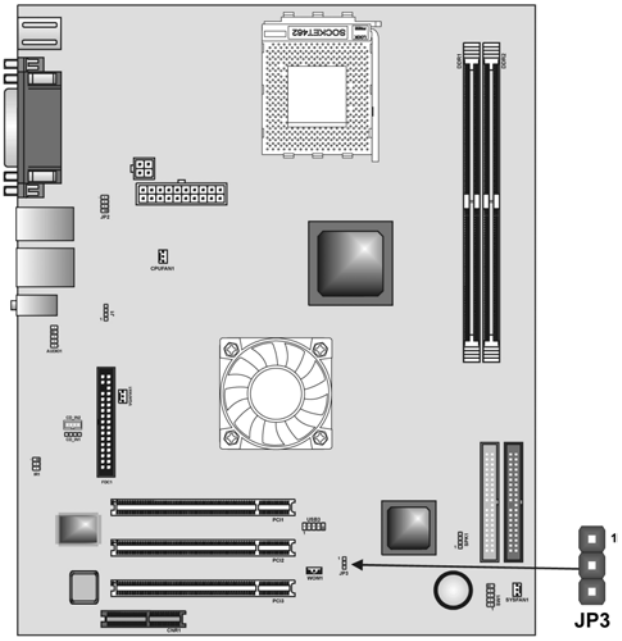
Open

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.



Checking Jumper Settings

The following illustration shows the location of the mainboard jumpers. Pin 1 is labeled.



Jumper Settings

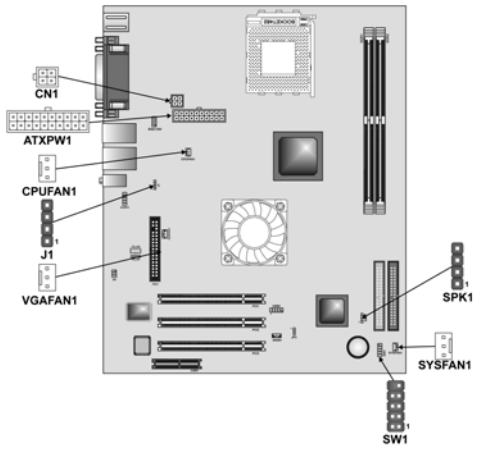
Jumper	Type	Description	Setting (*default*)
JP3	3-pin	Clear CMOS	1-2: Clear CMOS *2-3: Normal* 

Jumper 3 – 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 mainboard from operating. To clear the CMOS memory, disconnect all the power cables from the mainboard and then move the jumper cap into the CLEAR setting for a few seconds.

Connecting Case Components

After you have installed the mainboard into a case, you can begin connecting the mainboard components. Refer to the following:

1. Connect the Pentium 4 processor auxiliary case power supply connector to **CN1**.
2. Connect the standard power supply connector to **ATXPW1**.
3. Connect the CPU cooling fan cable to **CPUFAN1**.
4. Connect the system cooling fan connector to **SYSFAN1**.
5. The VGA cooling fan cable is already connected to **VGAFAN1**.
6. Connect the external speaker cable to **SPK1**.



7. Connect the case LAN LED cable to **J1**.
8. Connect the case switches and indicator to **SW1**.

CN1: ATX 12V Power Connector

Pin	Signal Name
1	+12V
2	+12V
3	Ground
4	Ground

ATXPW1: ATX 20-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS ON#
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PWRGD	18	+5V
9	+5VSB	19	+5V
10	+12V	20	+5V

CPUFAN1/SYSFAN1: FAN Power Connectors

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

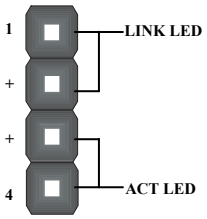
SPK1: Internal speaker header

Pin	Signal Name
1	SPKR
2	NC
3	Ground
4	+5V

J1: LAN LED Indicator

This connector is attached to LAN device that needs a LED indicator.

Device	Pins
Link LED	1, +2
ACT LED	+3, 4



Note: The plus sign (+) indicates a pin which must be connected to a positive voltage.

Front Panel Connector

The front panel connector (SW1) provides a standard set of switch and LED connectors commonly found on ATX or micro-ATX cases. Refer to the table below for information:

SW1

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (positive)	2	FP PWR/SLP	MSG LED [dual color or single color (+)]
3	HD_LED_N	Hard disk active LED (negative)	4	FP PWR/SLP	MSG LED [dual color or single color (-)]
5	RST_SW_N	Reset Switch	6	PWR_SW_P	Power Switch
7	RST_SW_P	Reset Switch	8	PWR_SW_N	Power Switch
9	RSVD	Reserved	10	NC	No pin

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power / Sleep / Message Waiting LED

Connecting pins 2 and 4 to a single- or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal debounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the mainboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the mainboard, you may cause serious damage to the mainboard or its components.

On most mainboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the mainboard and processor socket.

Before installing the Processor

This mainboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the mainboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not overclock processors or other components to run faster than their rated speed.

Warning: Overclocking components can adversely affect the reliability of the system and introduce errors into your system. Overclocking can permanently damage the mainboard by generating excess heat in components that are run beyond the rated limits.

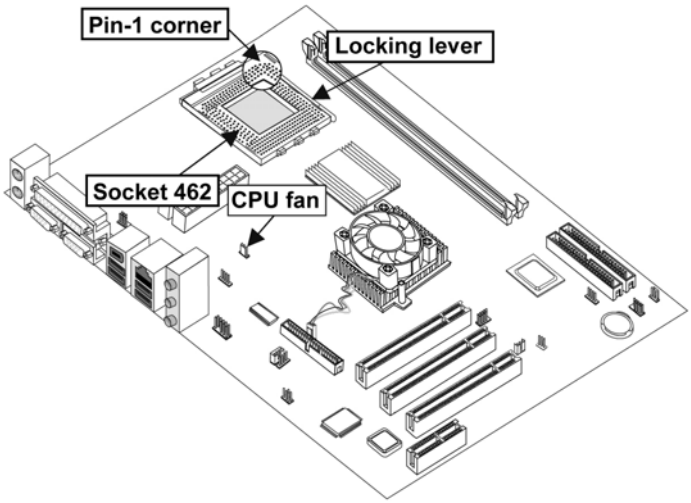
This mainboard has a Socket 462 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

The following processor is currently supported by this mainboard.

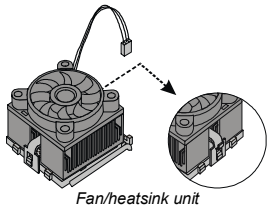
Athlon XP: 2000+ and up; FSB: 333 MHz
Athlon: 650 MHz~1.4 GHz, FSB: 200 MHz, 266 MHz, 333 MHz
Duron: 550 MHz~1.2 GHz, FSB: 200 MHz

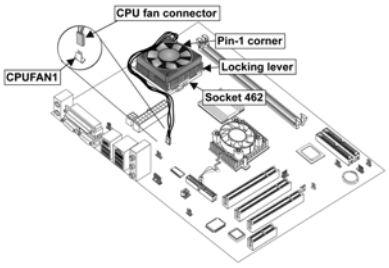
CPU Installation Procedure

The following illustration shows CPU installation components:



Note: The pin-1 corner is marked with an arrow ◤

1.	Pull the CPU socket locking lever away from the socket to unhook it and raise the locking lever to the upright position.	
2.	Match the corner on the CPU marked with an arrow with pin A-1 on the CPU socket (the corner with the pinhole noticeably missing). Insert the processor into the socket. Do not use force.	
3.	Swing the locking lever down and hook it under the latch on the edge of the socket.	
4.	Apply thermal grease to the top of the CPU.	
5.	Lower the CPU cooling fan/heatsink assembly onto the CPU.	
6.	Secure the two retention clips on either side of the fan/heatsink unit onto the Socket 462 base.	 *Fan/heatsink unit secured to socket*

7. Connect the CPU Cooling Fan power cable connector to the CPUFAN connector.	

Notes:

- To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 4800 rpm at least.
- CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

Installing Memory Modules

This mainboard accommodates two 184-pin 2.5V unbuffered Double Data Rate (DDR) SDRAM DIMM sockets. When you install DDR266/DDR333/DDR400 memory modules, the memory bus can run up to 133/166/200 MHz.

The DDR SDRAM DIMMs can synchronously work with 100 MHz or operates over a 400 MHz (overclock) system bus. You must install at least one memory module in order to use the mainboard. Each module can install up to 1GB; total maximum memory capacity.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the mainboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

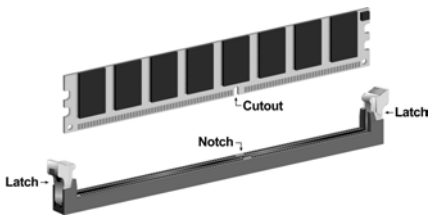
Installation Procedure

Refer to the following to install the memory modules.

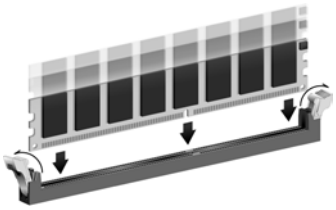
1. This mainboard supports unbuffered DDR SDRAM only. Do not attempt to insert any other type of DDR SDRAM into the slots.

2. Push the latches on each side of the DIMM slot down.

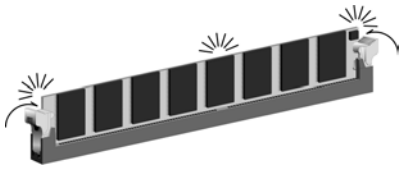
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.



4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.



5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.



6. Install any remaining DIMM modules.

Installing a Hard Disk Drive/CD-ROM

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your mainboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the mainboard.

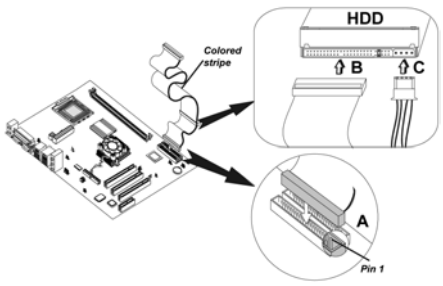
If you want to install more than two IDE devices, get a second IDE cable and you can add two more devices to the secondary IDE channel.

IDE devices have jumpers or switches that are used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. When installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About UltraDMA

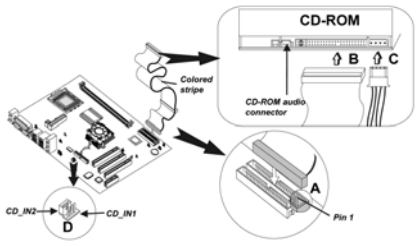
This mainboard supports UltraDMA 66/100/133. UDMA is a technology that accelerates the performance of devices in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables that support UDMA 66/100/133.

Installing a Hard Disk Drive

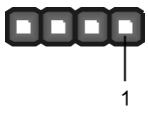
1. Install the hard disk drive into the drive cage in your system case.	
2. Plug the IDE cable into IDE1 (**A**): **Note:** Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.	
3. Plug an IDE cable connector into the hard disk drive IDE connector (**B**). It doesn't matter which connector on the cable you use.	
4. Plug a power cable from the case power supply into the power connector on the hard disk drive (**C**).	

When you first start up your system, the BIOS should automatically detect your hard disk drive. If it doesn't, enter the Setup Utility and use the IDE Hard Disk Auto Detect feature to configure the hard disk drive that you have installed.

Installing a CD-ROM/DVD Drive

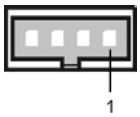
1. Install the CD-ROM/DVD drive into the drive cage in your system case.	
2. Plug the IDE cable into IDE1 (**A**). If you have already installed an HDD, use the other connector on the IDE cable. **Note:** Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.	
3. Plug an IDE cable connector into the CD-ROM/DVD drive IDE connector (**B**). It doesn't matter which connector on the cable you use.	
4. Plug a power cable from the case power supply into the power connector on the CD-ROM/DVD drive (**C**).	
5. Use the audio cable provided with the CD-ROM/DVD drive to connect to the mainboard CD-in connector CD_IN1 or CD_IN2 (**D**).	

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.



CD_IN1

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



CD_IN2

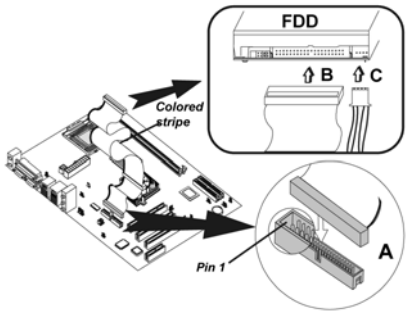
Pin	Signal Name
1	GND
2	CD IN R
3	GND
4	CD IN L

Installing a Floppy Diskette Drive

The mainboard has a floppy diskette drive (FDC1) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

1. Install the FDD into the drive cage in your system case.
2. Plug the FDD cable into FDC1 (**A**):

   Note: Ribbon cable connectors are usually keyed so that they can only be installed correctly on the device connector. If the connector is not keyed, make sure that you match the pin-1 side of the cable connector with the pin-1 side of the device connector. Each connector has the pin-1 side clearly marked. The pin-1 side of each ribbon cable is always marked with a colored stripe on the cable.



3. Plug the correct connector on the FDD cable for the 5.25-inch or 3.5-inch drive into the FDD connector (**B**).
4. Plug a power cable from the case power supply into the power connector on the FDD (**C**).

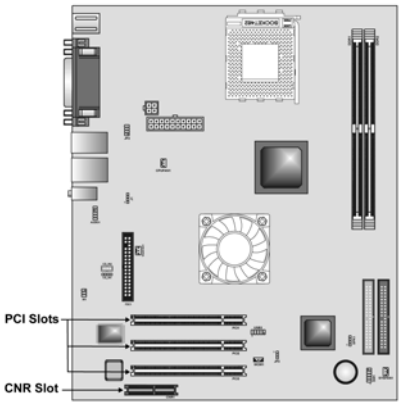
When you first start up your system, go immediately to the Setup Utility to configure the floppy diskette drives that you have installed.

Installing Add-on Cards

The slots in this mainboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the mainboard's features and capabilities. With these efficient facilities, you can increase the mainboard's capabilities by adding hardware which performs tasks that are not part of the basic system.

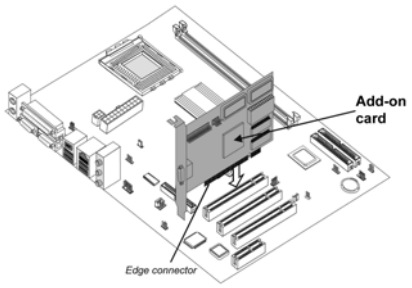
PCI Slots PCI slots are used to install expansion cards that have the 32-bit PCI interface.

CNR Slot This slot is used to insert CNR cards with Modem and Audio functionality.



Note: Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

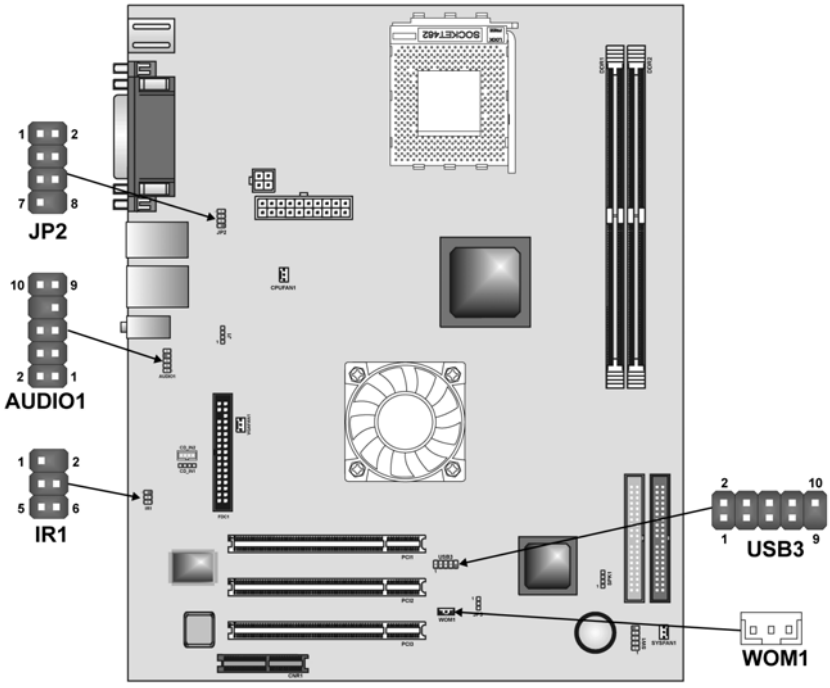
Follow these instructions to install an add-on card:

1. Remove a blanking plate from the system case corresponding to the slot you are going to use.	
2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.	
3. Secure the metal bracket of the card to the system case with a screw.	

Note: For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

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



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 Name	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5 V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel Audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	HP_ON	Reserved for future use to control Head-phone Amplifier
8	KEY	No Pin
9	AUD_FPOUT_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal Return from Front Panel

USB3: Front panel USB ports

The mainboard has four 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 connectors USB3 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Function
1	VREG_FP_USBPWR0	Front Panel USB Power
2	VREG_FP_USBPWR0	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	KEY	No pin
10	USB_FP_OC0	Overcurrent signal

Note: Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

JP2: IEEE 1394A header

Use this header to connect to any IEEE 1394A interface.

Pin	Signal Name	Pin	Signal Name
1	Cable-power	2	GND
3	TPB+	4	TPB+
5	TPA-	6	TPA+
7	Chassis GND	8	NC

IR1: Infrared port

The mainboard supports an Infrared (IR1) data port. Infrared ports allow 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 Name	Function
1	Not assigned	Not assigned
2	KEY	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRRX	IrDA serial input

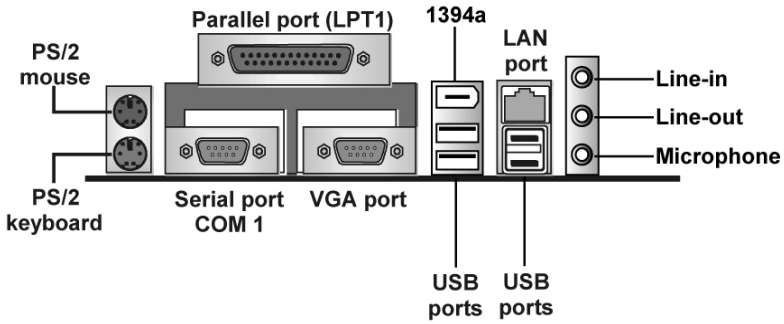
WOM1: Wake On Modem

If you have installed a modem, use the cable provided with the modem to plug into the mainboard WOM1 connector. This enables the Wake On Modem (WOM1 feature. When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility. See Chapter 3 for more information.

Pin	Signal Name	Function
1	5VSB	+5V stand by power
2	GND	Ground
3	Ring#	Wake up signal (low active)

Connecting I/O Devices

The backplane of the mainboard has the following I/O ports:



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.
LPT1	Use LPT1 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.
VGA	Use the VGA port to connect VGA devices.
1394a Port	Use the 1394a port to connect any Firewire devices.
LAN Port	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 the three audio ports to connect audio devices. The first jack is for stereo Line-In signal. The second jack is for stereo Line-Out signal. The third jack is for Microphone. Here are the configurations of 2-channel, 4-channel and 6-channel speaker-out for the onboard audio system applications: *2-CH system:* Line-In Line-Out➔ two Front Speakers Microphone *4-CH system:* Line-In➔ two Front Speakers Line-Out➔ two Rear Speakers Microphone *6-CH system:* Line-In➔ two Rear Speakers Line-Out➔ two Front Speakers Microphone➔ Subwoofer Center

External Connector Color Coding

Many connectors now use standard colors as shown in the table below.

Connector	Color
Audio line-in	Light blue
Audio line-out	Lime
Digital monitor/flat panel	White
IEEE 1394	Grey
Microphone	Pink
MIDI/game	Gold
Parallel	Burgundy
PS/2-compatible keyboard	Purple
PS/2-compatible mouse	Green
Serial	Teal or Turquoise
Speaker out/subwoofer	Orange
Right-to-left speaker	Brown
USB	Black
Video out	Yellow
SCSI, network, telephone, modem	None

This concludes Chapter 2. The next chapter covers the BIOS.

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 mainboard contains the ROM setup instructions for configuring the mainboard 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
- Password protection from unauthorized use
- 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

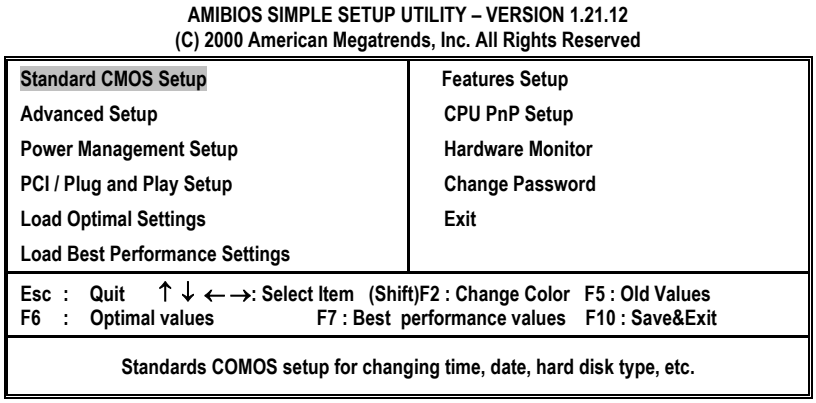
A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

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

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 <DEL> 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.



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 leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

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 of the items. Other options on the main menu page lead to dialog boxes requiring 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 default values. Press **F7** to install the setup utility with a set of high-performance values.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ►) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ►.

Standard CMOS Setup Page

This page sets up basic information such as the date, the time, the IDE devices, and the diskette drives. If you press the F3 key, the system will automatically detect and configure the hard disks on the IDE channels.

```
                 AMIBIOS SETUP – STANDARD CMOS SETUP
        (C) 2000 American Megatrends, Inc. All Rights Reserved

Date  (mm/dd/yy) : Tue Dec 03, 2002
Time  (hh/mm/ss) :  16:25:01
                                                          LBA   Blk   PIO   32Bit
              Type         Size  Cyln  Head  WPcom  Sec  Mode  Mode  Mode  Mode
Pri Master  : Auto                                                         On
Pri Slave   : Auto                                                         On
Sec Master  : Auto                                                         On
Sec Slave   : Auto                                                         On

Floppy Drive A :  1.44 MB 3 1/2
Floppy Drive B :  Not Installed

Month :  Jan – Dec                                      ESC  :  Exit
  Day :  01 – 31                                        ↑↓  :  Select Item
 Year :  1901 – 2099                                    PU/PD/+/-  :  Modify
                                                        (Shift)F2  :  Color
                                                        F3  :  Detect All HDD
```

Date & Time

Use these items to set the system date and time

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

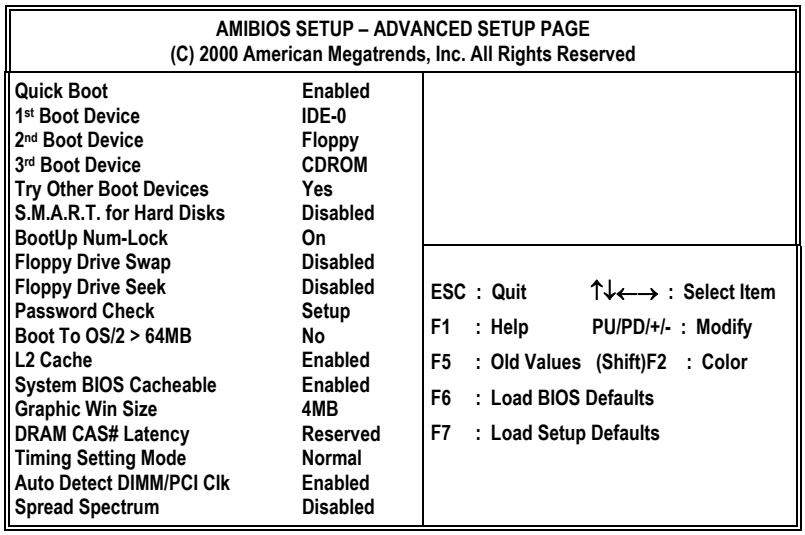
drive, select the setting *CDROM*. If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120) select *Floptical*.

Floppy Drive A/Floppy Drive B

Use these items to set the 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. Take care of this page with more caution. Any changes can affect the operation of your computer.



AMIBIOS SETUP – ADVANCED SETUP PAGE (C) 2000 American Megatrends, Inc. All Rights Reserved		
Quick Boot	Enabled	
1st Boot Device	IDE-0	
2nd Boot Device	Floppy	
3rd Boot Device	CDROM	
Try Other Boot Devices	Yes	
S.M.A.R.T. for Hard Disks	Disabled	
BootUp Num-Lock	On	
Floppy Drive Swap	Disabled	
Floppy Drive Seek	Disabled	ESC : Quit ↑↓←→ : Select Item
Password Check	Setup	F1 : Help PU/PD/+/- : Modify
Boot To OS/2 > 64MB	No	F5 : Old Values (Shift)F2 : Color
L2 Cache	Enabled	F6 : Load BIOS Defaults
System BIOS Cacheable	Enabled	F7 : Load Setup Defaults
Graphic Win Size	4MB	
DRAM CAS# Latency	Reserved	
Timing Setting Mode	Normal	
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	

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.

S.M.A.R.T. for Hard Disks

Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.

BootUp Num-Lock

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

Floppy Drive Swap

If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.

Floppy Drive Seek

If you enable this item, your system will check all floppy disk drives at start up. Disable this item unless you are using an old 360KB drive.

Password Check

If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility (*Setup*) or required both at start-up and to enter the Setup Utility (*Always*).

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.

L2 Cache

Leave these items enabled since all the processors that can be installed on this board have internal L2 cache memory.

System BIOS Cacheable

If you enable this item, a segment of the system BIOS will be copied to main memory for faster execution.

Graphic Win 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 3T setting requires faster memory that specifically supports this mode.

Timing Setting Mode

This item determines the timing setting mode of the memory. We recommend you leave this item at the default value.

Auto detect DIMM/PCI Clk

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

Spread Spectrum

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

Power Management Setup Page

This page sets some of the parameters for system power management operation.

AMIBIOS SETUP – POWER MANAGEMENT SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
ACPI Aware O/S	Yes	
Power Management	Enabled	
Suspend Time out	Disabled	
Hard Disk Time out	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	ESC : Quit ↑↓←→ : Select Item
LAN/Ring Power On	Disabled	F1 : Help PU/PD/+/- : Modify
Keyboard Power On	Disabled	F5 : Old Values (Shift)F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

ACPI Aware O/S

Enable this item if you are using an O/S that supports ACPI function such as Windows 98/ME /2000.

Power Management

Use this item to select a power management scheme. Both APM and ACPI are supported.

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.

Hard Disk Time Out

This sets the timeout to power down the hard disk drive, if the time selected passes without any hard disk activity.

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

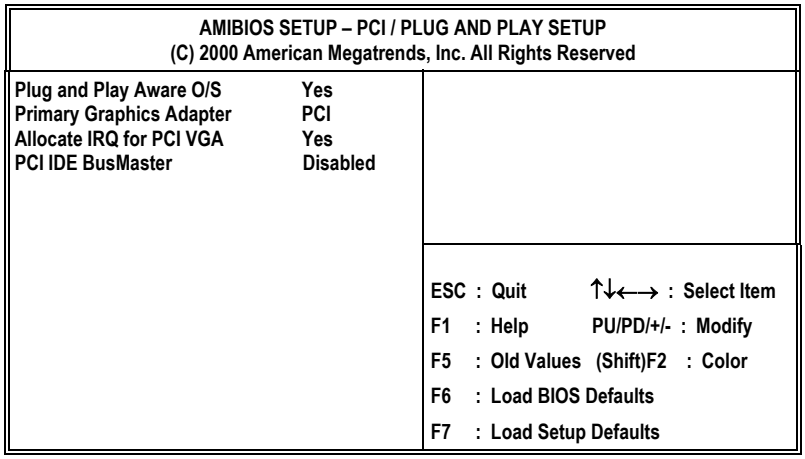
The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

KeyBoard Power On

If you enable this item, you can turn the system on and off by pressing hot keys on the keyboard. You must enable the Keyboard Power On jumper and use an ATX power supply in order to use this feature.

PCI/Plug and Play Setup Page

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.



Plug and Play Aware O/S

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

Primary Graphics Adapter

This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default PCI 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.

Load 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.

Load Best Performance 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 best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

Features Setup Page

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

AMIBIOS SETUP – FEATURES SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
OnBoard FDC	Enabled	
OnBoard Serial PortA	3F8h/COM1	
OnBoard IR Port	Disabled	
OnBoard Parallel Port	378h	
Parallel Port Mode	EPP+ECP	
Parallel Port IRQ	7	
Parallel Port DMA	3	
OnBoard PCI IDE	Both	
Audio Device	Enabled	ESC : Quit ↑↓←→ : Select Item
Modem Device	Enabled	F1 : Help PU/PD/+/- : Modify
Ethernet Device	Enabled	F5 : Old Values (Shift)F2 : Color
IEEE1394 Device	Enabled	F6 : Load BIOS Defaults
Onboard USB Function	Enabled	F7 : Load Setup Defaults
USB Function for DOS	Disabled	
ThumbDrive for DOS	Disabled	

OnBoard FDC

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

OnBoard Serial PortA

Use these items to enable or disable the onboard COM1 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.

Onboard Parallel Port

Use this item to enable or disable the onboard LPT1 parallel port, and to assign a port address. The Auto setting will detect and available address.

Parallel Port Mode

Use this item to set the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP.

Parallel Port IRQ

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

Parallel Port DMA

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

Onboard PCI IDE

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

Audio Device

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

Modem Device

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

Ethernet Device

This item enables or disables the onboard Ethernet LAN.

IEEE1394 Device

This item enables or disables the onboard IEEE1394 chip.

Onboard USB Function

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

USB Function for DOS

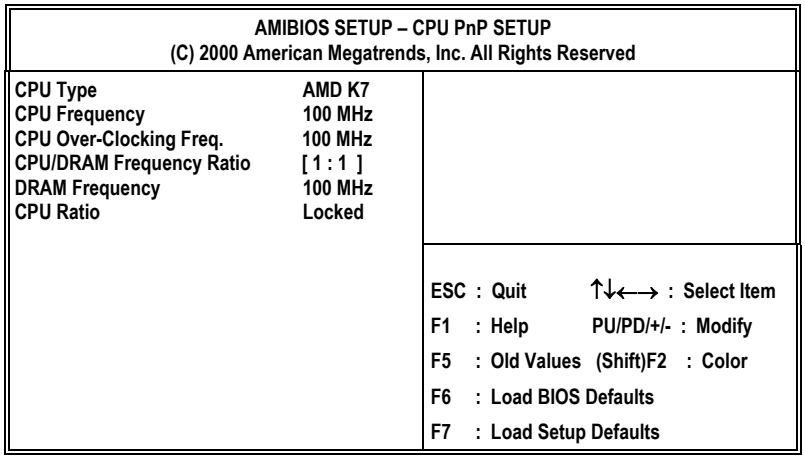
Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

ThumbDrive for DOS

Enable this item to make a small portion of memory storage device for the USB ports.

CPU PnP Setup Page

This page lets you manually configure the mainboard for the CPU. The system will automatically detect the kind of CPU that you have installed and make the appropriate adjustments to the items on this page.



CPU Type/ Frequency/Ratio

These items show the type, frequency and ratio the installed CPU in your system.

CPU/DRAM Frequency Ratio

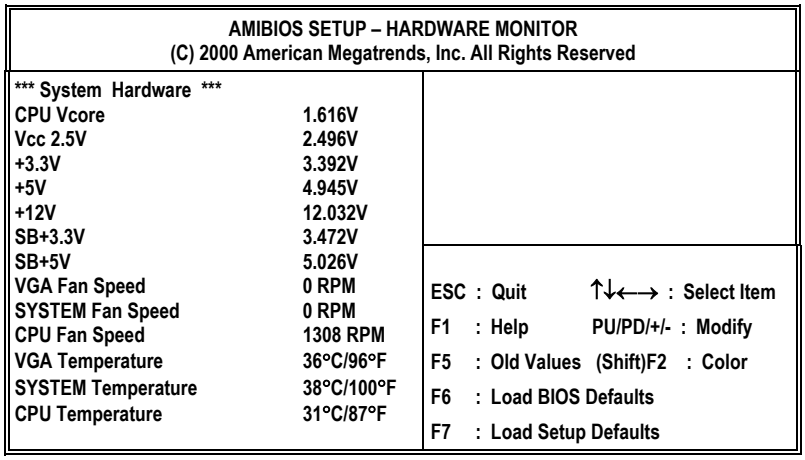
This item adjusts the CPU/DRAM frequency installed in your system.

CPU Over-Clocking Frequency

This item decides CPU over-clocking frequency 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.

Hardware Monitor Page

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



CPU/VGA/System Temperature

These items display CPU, VGA and system temperature measurement.

FANs & Voltage Measurements

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

Change Password

If you highlight this item and press **Enter**, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

Change or Remove the Password

Highlight this item, press Enter and type in the current password. At the next dialog box, type in the new password, or just press Enter to disable password protection.

Exit

Highlight this item and press **Enter** to save the changes that you have made in the Setup Utility configuration and exit the program. When the Save and Exit dialog box appears, press **Y** to save and exit, or press **N** to exit without saving.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the mainboard.

Chapter 4

Using the Mainboard Software

About the Software CD-ROM

The support software CD-ROM that is included in the mainboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your mainboard version. More information on some programs is available in a README file, located in the same directory as the software.

Note: Never try to install software from a folder that is not specified for use with your mainboard.

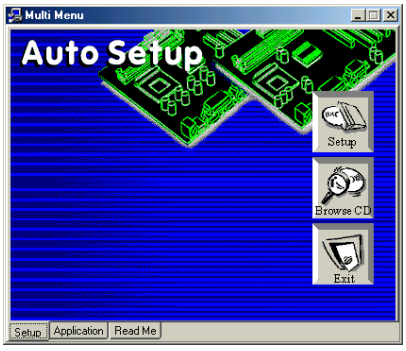
Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

Auto-installing under Windows 98/ME/2000/XP

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your mainboard.

Note: If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows 98/ME/2000/XP. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



Note: If the opening screen doesn't appear, double-click the file "setup.exe" in the root directory.

Setup Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD. Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, or WIN98/95. Always go to the correct folder for the kind of OS you are using. To install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **Exit** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

Read Me Tab

Displays the path for all software and drivers available on the CD.

Running Setup

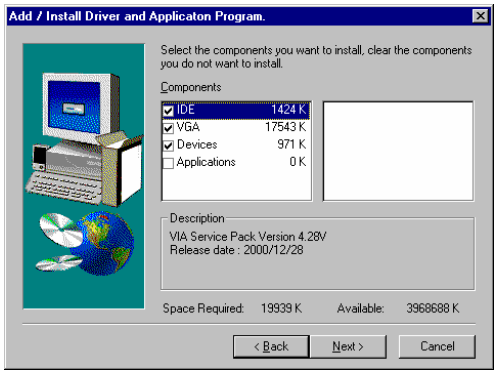
Follow these instructions to install device drivers and software for the mainboard:

1. Click **Setup**. The installation program begins:

Note: The following screens are examples only. The screens and driver lists will be different according to the mainboard you are installing.

The mainboard identification is located in the upper left-hand corner.

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:

5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the on-screen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your mainboard.

Look for the chipset and mainboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

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.

Note: The software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

Set Up the Audio System

Set up the Audio configuration of 2-channel, 4-channel and 6-channel speaker-out system through the audio driver. It also provides users with **Xear Technology**, the virtual rear sound effect compensation for any multi-channel audio systems simply by using a pair of open-aired headphones.

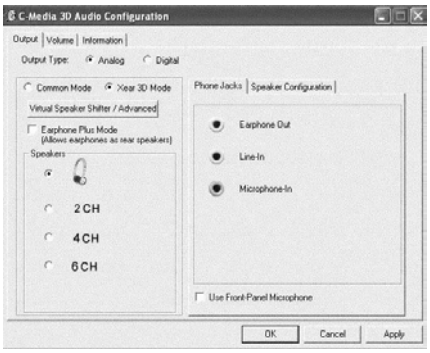
- An ear/headphone-like device, capable of delivering the rear audio in a multi-channel audio system.
- Structurally comprising two housing units for receiving the rear signal, wherein the housings are opposite each other. Both housing units may be joined by a headband or other unification device.
- Open-aired design, allowing the listener to perceive the front signal at the same time.
- Rear output adjustable in position, height, and width via C-Media's user friendly API, capable of offering a freely defined cyberspace to the listener.

Xear 3D Mode

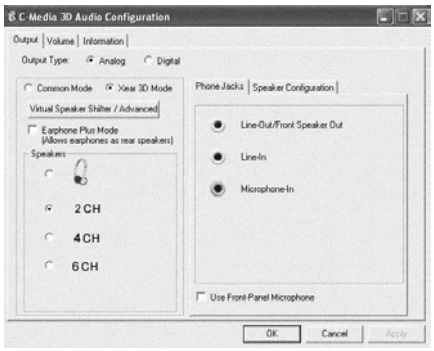
In Xear 3D Mode, there are Virtual Speaker Shifter/Advance and Earphone Plus Mode options and channel selections. Each channel has a corresponding position of phone jacks and description.

(Three audio jacks on the screen show these colors: top-- lime, middle-- light blue, bottom-- pink)

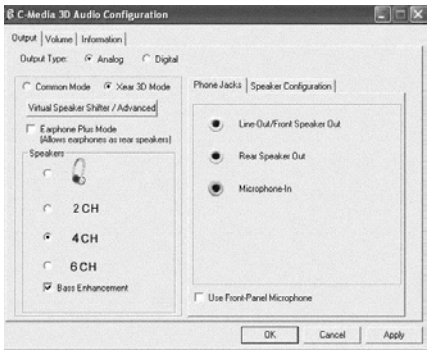
EARPHONE



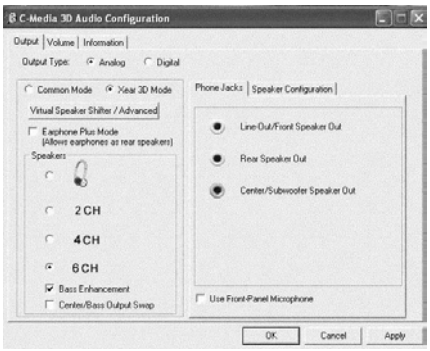
2-CHANNEL



FOUR-CHANNEL



SIX-CHANNEL

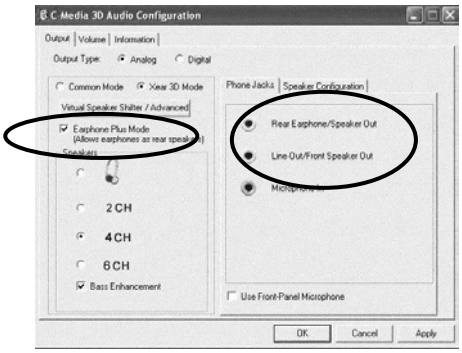


Earphone Plus Mode

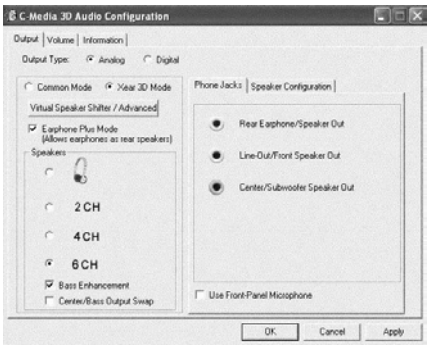
While enabling Earphone Plus Mode, it activates the Xear function; moreover, original Front Out and Rear Out positions will be exchanged in Multi-Channel mode. EARPHONE and 2-CHANNEL don't support Xear function.

(Three audio jacks on the screen show these colors: top-- lime, middle-- light blue, bottom-- pink)

FOUR-CHANNEL

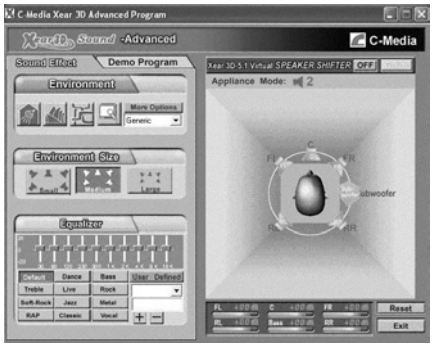


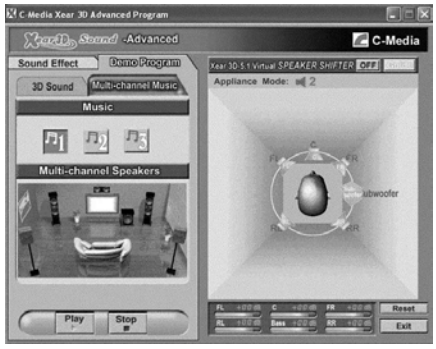
SIX-CHANNEL



Virtual Speaker Shift/Advance

Click the Virtual Speaker Shift/Advance button, it provides some 3D Sound Effect and DEMO program for testing.





This concludes Chapter 4.