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Static Electricity Precautions

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

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

Pre-Installation Inspection

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

Notice:

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

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

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

Features & Checklist Translations

Liste de contrôle

Le coffret de votre carte mère contient les éléments suivants :
- ❑ La carte mère
- ❑ Le Manuel utilisateur
- ❑ Un câble plat pour lecteur de disquette (optionnel)
- ❑ Une câble plat pour lecteur IDE
- ❑ CD de support de logiciels

Features

Processeur	**Prise en charge du Processeur Socket-478** • Supporte le CPU Intel Pentium 4 series avec la Technologie **Hyper Threading** • Supporte un Bus Avant allant jusqu'à **800 MHz** *La technologie "Hyper-Threading" permet au système d'exploitation de penser qu'il est connecté à deux processeurs, permettant d'exécuter deux threads en parallèle, à la fois sur des processeurs 'logiques' dans le même processeur physique.*
Chipset	Ce chipset comporte **SiS661FX Northbridge** et **SiS964LSouthbridge** conformément à une architecture novatrice et dimensionnable avec une fiabilité et des performances prouvées. • Cible conforme A.G.P. intégré /Pont Hôte vers PCI 66Mhz: Conforme à AGP v3.0 universel et supporte l'Interface AGP 8X/4X avec Fast Write Transaction • Moteur 3D 256 bits de haute performance et Moteur d'installation en triangle VLIW au format de virgule flottante en 32 bits intégré • Le lien Multiprocessus E/S intégré assure l'accès simultané de transfert de données en amont/aval avec une bande passante de 1.2Go/s. • Conforme aux spécifications PCI 2.2 • Maîtrise de lien Multiprocessus E/S intégré avec flux en pipeline de lecture
Support de Mémoire	• Deux logements DIMM 184 broches pour modules mémoire • Supporte le bus mémoire DDR**400**MHz • La mémoire maximum installée est 2Go
VGA	• Accélérateur Graphique 3D de Haute Performance & Haute Qualité. Intégré dans un moteur **256 bits 3D** hautes performances • Accélérateur Graphique 2D de Haute Performance. Tampon de trame de 128Mo maximum avec adressage linéaire • Décodeur Vidéo MPEG-1/2 Conforme aux standards MPEG-2 ISO/IEC 13818-2 MP@HL et MPEG-1 ISO/IEC 11172-2
AC97 Audio Codec	• 6 canaux et conforme aux Spéc. Intel® AC'97 (REV. 2.3), respectant les exigences de Microsoft® PC2001 • Gestion d'alimentation avancée et capacités d'économie d'énergie. • Fonction de ligne d'entrée stéréo partagée avec la sortie Contour. • Entrée de CD Audio analogique pseudo différentielle de haute qualité. • Support d'Entrée/Sortie S/PDIF : Entrée S/PDIF est dotée du support des fonctionnalités d'interruption, auto-verrouillage, anti-bruit, et anti-distorsion.

	• Technologie logicielle complémentaire de valeur. Supporte la plupart des standards de l'industrie de son 3D PC et support de fonction de karaoké unique qui comprend l'écho microphone, décalage de touche, et annulation vocale.
Logements d'Extension	• Deux slots PCI 32 bits • Un logement 8x AGP • Un logement CNR (Communications and Networking Riser)
IDE Interne	• Deux Connecteurs IDE • Prend en Charge les modes PIO (Entrée/Sortie Programmable) et DMA (Accès Direct à la Mémoire) • Supporte maîtrise de bus Ultra DMA IDE avec vitesse de transfert de 33/66/100/**133** Mo/sec
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 parallèle • Un port VGA • Huit ports USB 2.0 (quatre ports fond de panier, connecteurs deux USB internes JUSB1/JUSB2 offrant quatre ports supplémentaires) • Prises audio pour microphone, ligne d'entrée et ligne de sortie
LAN Fast Ethernet (optionnel)	• Supporte le fonctionnement en 10/100Mbps et le fonctionnement en half/full duplex • Conforme IEEE 802.3/802.3u • Supporte l'auto négociation IEEE 802.3u clause 28 • Supporte le fonctionnement en mode d'Economie d'Energie d'Interruption de Liaison • Supporte la compensation de Déviation de Ligne de Base (BLW) • Egalisation spéculative
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.

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

Checkliste

Die Verpackung Ihres Mainboards enthält folgende Teile:
- ❑ Mainboard
- ❑ Handbuch
- ❑ Bandkabel für Floppylaufwerke (optional)
- ❑ Bandkabel für IDE-Laufwerke
- ❑ Software-CD

Ausstattung

Prozessor	**Unt Unterstütz Socket-478-Prozessoren** •Unterstützung für Intel Pentium 4-CPUs mit "**Hyper-Threading**"-Technologie •Unterstützung von bis zu **800 MHz** Front-Side Bus *"Hyper-Threading"-Technologie läßt das Betriebssystem glauben, es sei an zwei Prozessoren angeschlossen, was zwei parallele Threads auf separaten 'logischen' Prozessoren im selben physischen Prozessor erlaubt.*
Chipsatz	Dieser Chipsatz besteht aus einer **SiS661FX Northbridge** und einer **SiS964LSouthbridge.** Die Chipsatzarchitektur ist in einem innovativen und skalierbaren Design gehalten und verspricht sowohl Zuverlässigkeit als auch Leistungsstärke. • Integrierte A.G.P., gemäß mit Target/66Mhz Host-to-PCI Bridge: Entspricht Universal AGP v3.0 und unterstützt AGP 8X/4X Interface mit Fast-Write-Transaction Eingebauter 256-Bit 3D Hochleistungsmotor und VLIW Dreieck-Startmotor mit 32-BitFlußpunktformat • Integriertes mehrfasiges I/O Bindeglied, welches den Zulauf der Datenübertragung stromaufwärts und stromabwärts mit einer 1.2GB/Sek-Bandbreite sicherstellt • Entspricht PCI 2.2 Spezifikation • Eingebautes Multithreaded I/O-Link-Mastering mit Read-Pipelined-Streaming
Speicherunte rstützung	• Zwei 184-pin DIMM Steckplätze für DDR Speichermodule • Unterstützung für DDR**400**MHz Speicherbus • Maximal auf 2GB Speicher erweiterbar
VGA	• Hochleistungsfähiger und hochqualifizierter 3D Grafik-Beschleuniger: Onboard-**256-Bit 3D**-Engine • Hochleistungsfähiger 2D Grafik-Beschleuniger: Maximaler 128MB-Rahmenpuffer mit linearer Adressierung • MPEG-2/1-Video-Decoder: Standardgemäß nach MPEG-2 ISO/IEC 13818-2 MP@HL und MPEG-1 ISO/IEC 11172-2
AC97 Audio Codec	• 6-Kanäle und gemäß Spezifikationen von Intel® AC'97 (REV. 2.3) , entspricht den Anforderungen von Microsoft® PC2001 • Fortgeschrittene Betriebsstromzufuhr und stromsparend. • Stereo Line-in Funktion, geteilt mit Surround-Out. • Analoger CD Audio Input, pseudo-differential, von hoher Qualität. • S/PDIF Input/Output Unterstützung: S/PDIF-In kennzeichnet sich durch eine Unterbrechungs-Unterstützung, Selbstblockierung, Anti-Geräusche, und Anti-Störungs Funktionsfähigkeit.

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	• Zusätzliche wertvolle Software-Technologie: Unterstützt die meisten PC 3D-Sound Industrienormen und die einzigartige Karaoke-Funktion, welche sich durch das Mikrofon-Echo, Tastatur-Umschaltung und Stoppen mittels Stimme hervorhebt.
Erweiterungs steckplätze	• Zwei 32-Bit PCI-Steckplätze • Ein 8x AGP-Steckplatz • Ein CNR-Steckplatz (Communications & Networking Riser)
Onboard IDE	• Zwei IDE-Header • Unterstützt die Modi PIO (Programmable Input/Output) und DMA (Direct Memory Access) • Unterstützung für IDE Ultra DMA-Busmastering mit Transferraten von 33/66/100/**133** MB/Sek
Onboard I/O Ports	Das Mainboard verfügt über einen kompletten Satz von I/O-Schnittstellen und Anschlüssen: • Zwei PS/2-Steckplätze für Maus und Tastatur yboard • Ein serieller Steckplatz • Ein paralleler Steckplatz • Ein VGA Steckplatz • Acht USB2.0-Ports (vier Ports auf der Rückseite; zwei Onboard-USB-Header JUSB1/JUSB2 bieten vier zusätzliche USB-Ports). • Audioanschlüsse für Mikrofon, line-in und line-out
Fast Ethernet LAN (optional)	• Unterstützt 10/100Mbps-Betrieb und halben/vollen Duplex-Betrieb • Übereinstimmend mit IEEE 802.3/802.3u • Unterstützt IEEE 802.3u Klausel 28 Selbstentscheidung • Unterstützt den Betrieb unter dem Modus "Link Down Power Saving" (Verbundener Sparbetrieb) • Unterstützt Base Line Winder (BLW) - Ausgleich • Anpassungsfähige Ausgleichung
USB 2.0	• Entspricht Universal Serial Bus-Spezifikation, Revision 2.0 • Entspricht Intels Enhanced Host Controller Interface-Spezifikation, Revision 0.95 • Entspricht Universal Host Controller Interface -Spezifikation Revision 1.1 • PCI-Multifunktionsgerät besteht aus zwei UHCI Host Controller-Kernen für Signalübertragung bei voller und niedriger Geschwindigkeit sowie einem EHCI Host Controller-Kern für Hochgeschwindigkeits- Signalübertragung • Root Hub besteht aus 4 Downstream-Ports mit integrierten Physical Layer-Überträgern für gemeinsame Nutzung durch UHCI und EHCI Host Controller • Unterstützt PCI-Bus Power Management Interface , Spezifikation Release 1.1 • Legacy-Unterstützung für alle Downstream-Ports

Bestimmte Hardwarespezifikationen und Teile der Softwareausstattung können ohne weitere Ankündigung abgeändert werden.

Lista

L'imballo della scheda madre é composto da:
❑ La scheda madre
❑ Il manuale
❑ Una piattina per il collegamento dei drive (opzionale)
❑ Una piattina IDE
❑ Il CD con il Software di supporto

Features

Processor	**Dotata di Socket 478 per Processori** • Supporta CPU **Intel Pentium serie 4** con tecnologia **Hyper Threading** • Supporta fino a **800 MHz** Front Side Bus *La tecnologia **Hyper-Threading** permette al sistema operative di essere dotato di due procressori. Permettendovi di effettuare due operazioni in parallelo, entrambe su processori 'logici' separati all'interno dello stesso processore fisico.*
Chipset	There are **Northbridge** and in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance. In accordo ad una archittettura scabile e innovative sono presenti nel chipset il **Northbridge SiS661FX** e **Southbridge SiS964L**. • Bridge A.G.P. Integrato con supporto Host-to-PCI Target/66Mhz: Compatibile con lo standard Universal AGP v3.0 e supporto dell'interfaccia AGP 8X/4X con Fast Write Transaction • Motore 3D a 256 bit con floating point VLIW triangle a 32 bit • Link I/O Multi-threaded integrato assicura la concorrenza dei trasferimenti upstream/downstream con una larghezza di banda pari a 1.2GB/s • Compatibile con le specifiche PCI 2.2 • Link mastering I/O multi-threaded integrato con read pipelined streaming
Memory Support	• Due slot DIMM a 184 pin per moduli di memoria DDR • Supporta bus di memoria DDR**400** MHz • Quantità massima di memoria installabile, 2GB
VGA	• Scheda Grafica 3D ad alte prestazioni ed alta qualità: Motore integrato **3D** a **256 bit** che garantisce alte prestazioni • Scheda Grafica 2D ad alte prestazioni: frame buffer a 128MB con indirizzamento lineare • Decoder Video MPEG-2/1: conforme agli standard MPEG-2 ISO/IEC 13818-2 MP@HL e MPEG-1 ISO/IEC 11172-2
AC97 Audio Codec	•6 canali, conforme alle specifiche Intel® AC'97 (REV. 2.3) ed i requisiti Microsoft® PC2001 •Gestione avanzata del risparmio energetico ed "Advanced power management". •Funzione Stereo Line IN condivisa con Surround out. •Input Audio CD pseudo differenziale ad alta qualità. •Input/Output S/PDIF: S/PDIF In é dotato delle funzioni interrupt, auto-lock, anti-noise ed anti-distortion. •Tecnologie software aggiuntive : Supporto della maggior parte degli standard

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	industriali 3D sound PC ed una funzione karaoke dotata di microphone echo, key shifting e vocal cancellation.
Slot di espansione	• Due slot a 32-bit PCI • Una slot AGP 8x • Uno slot CNR (Communications and Networking Riser)
Onboard IDE	• Due connettori IDE • Supporto della modalità PIO (Programmable Input/Output) e DMA (Direct Memory Access) • Supporto per le modalità Bus Mastering e Ultra DMA ATA 33/66100/**133** MB/sec
Onboard I/O Ports	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 parallela • Una porta VGA • Otto porte USB2.0 (Quattro presenti nella parte posteriore, due connettori USB integrati nella scheda madre per l'aggiunta di altre 4 porte JUSB1/JUSB2 • Jack audio per microfono, ingresso linea e uscita linea
Fast Ethernet LAN (opzionale)	• Operazioni 10/100Mbps e half/full duplex • Conforme allo standard IEEE 802.3/802.3u • Negoziazione automatica 28 clause IEEE 802.3u • Operazioni nella modalitá "Link Down Power Saving mode" • Supporto compensazione Base Line Winder (BLW) • Adaptive Equalization
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

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

LiSTA DE VERIFICACIÓN

El paquete de su placa principal contiene los sigtes. ítems:
- ❑ La placa principal
- ❑ El Manual del Usuario
- ❑ Un cable cinta para el lector de disquete (optativo)
- ❑ Un cable cinta para el lector IDE
- ❑ CD de Software de soporte

Características

Processor	**Soporte de Procesador Socket-478** • Soporta CPU de **Intel Pentium** 4 con la Tecnología **Hyper Threading** • Soporta hasta Bus de Lado Frontal de **800 MHz** *La tecnología "Hyper-Threading" habilita el sistema operativo en pensar que está conectado a dos procesadores, que permite dos hilos a correr en paralelo, ambos en procesadores 'lógicos' dentro del mismo procesador físico.*
Chipset	Hay **SiS661FX Northbridge** y **SiS964LSouthbridge** en este chipset en confomidad con una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados. • A.G.P integrado. Conforme con Target/66Mhz Host-to-PCI Bridge: AGP v3.0 universal adaptable y permite Interfaz AGP 8X/4X con Transacción de Escritura Rápida • Motor 3D de 156-bit de alto rendimiento incorporado y motor de setup de triángulo VLIW de formato de punto flotante de 32-bit • Vínculo I/O multihilado integrado asegura la concurrencia de la transferencia de datos hacia arriba y abajo con un ancho de banda de 1.2GB/s • Especificación de conformidad PCI 2.2 • Entrada/Salida multi-ensartada integrada y enlace maestro con lectura yuxtapuesta de datos
Soporte de Memoria	• Dos ranuras 184-pin DIMM para módulos de memoria DDR • Soporta DDR**400** MHz • Memoria máxima instalada es 2GB
VGA	• Acelerador de Gráficas 3D de Alto Rendimiento & Alta Calidad: Un motor **256-bit 3D** de alto rendimiento incorporado • Acelerador de Gráficas 2D de Alto Rendimiento: buffer de cuadro máximo de 128MB con dirección lineal • Decodificador de Vídeo MPEG-2/1: conforme con las normas MPEG-2 ISO/IEC 13818-2 MP@HL y MPEG-1 ISO/IEC 11172-2
AC97 Audio Codec	• 6-canales y conforme con la Espec. Intel® AC'97 (REV. 2.3), satisface los requisitos de Microsoft® PC2001 • Capacidades de administración de alimentación avanzada y ahorro de energía. • Función Stereo Line-in compartida con Surround out. • Salida CD Audio seudo-diferencial analógica de alta calidad. • Soporta S/PDIF Input/Output: S/PDIF In se caracteriza con el soporte de interrupción, auto-bloqueo, anti-ruido, y anti-distorción. • Tecnología de software adicional valiosa: Soporta la mayoría de las normas industriales de PC 3D sound y la función única de karaoke que se caracteriza por el eco de micrófono, cambio a teclados y cancelación a voz.

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Ranuras de Expansión	• Dos ranuras 32-bit PCI • Una ranura 8x/4x AGP • Una ranura CNR (Communications and Networking Riser)
IDE Abordos	• Dos conectores IDE • Soporta modos PIO (Entrada/Salida Programable/Programmable Input/Output) y modos DMA (Acceso de Memoria Directo/Direct Memory Access). • Soporta mastering de bus IDE Ultra DMA con índices de transferencia de 33/66/100/**133** MB/sec
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 paralelo • Un puerto VGA • Ocho puertos USB2.0 (cuatro puertos de panel trasero, dos conectores USB abordo JUSB1/JUSB2 que provee cuatro puertos extras) • Clavijas de sonido para micrófono, entrada y salida de línea
Ethernet LAN Rápido (optional)	• Soporta operación 10/100Mbps y operación de duplex medio/completo. • Conformidad IEEE 802.3/802.3u • Soporta auto-negociación IEEE 802.3u cláusula 28 • Soporta operación bajo el modo Link Down Power Saving (Vincular Ahorro de Suministro) • Soporta compensación Base Line Winder (BLW) • Ecualización Adaptiva.
USB 2.0	• Conforme con la Especificación de Bus Serial Universal Revisión 2.0 • Conforme con Controlador Anfitrión Reforzado de Intel Interface Specification Revision 0.95 • Conforme con la Especificación de Interfaz de Controlador Anfitrión Universal Revisión 1.1 • Dispositivo PCI multi-función se consiste de dos centros de Controlador Anfitrión UHCI para señalización de velocidad completa/baja y un centro de Controlador Anfitrión EHCI para señalización de alta velocidaa • Root hub consiste de 4 puertos que miran hacia abajo con transceptores de capa física integrado compartido por Controlador Anfitrión UHCI y EHCI • Soporta Especificación de Interfaz de Administración de Energía de BUS PCI versión 1.1 • Soporte de legado para todos los puetos que miran hacia abajo

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

Lista de verificação

A embalagem da sua placa principal contém os seguintes itens:
- ❑ A placa principal
- ❑ O Manual do Utilizador
- ❑ Um cabo para a unidade de disquetes (opcional)
- ❑ Um cabo para a unidade IDE
- ❑ CD de suporte para o software

Características

Processador	**Suporte do Processador Socket-478** • Suporta CPU série **Intel Pentium 4** com Tecnologia **Hyper Threading** • Suporta até **800 MHz** Front-Side Bus *Tecnologia Hyper-Threading que permite o sistema operador a pensar que ele está conectado em dois processadores, fazendo com que duas tranças operem em paralelo, ambas em dois processadores "lógicos"separados dentro do mesmo processador físico.*
Chipset	Conta com **SiS661FX Northbridge** e **SiS964LSouthbridge** neste chipset, de acordo com uma arquitectura inovadora e escalável com um nível de confiança e desempenho comprovado. • Alvo Integrado A.G.P. Complacente Target/Ponte 66Mhz Host-to-PCI: Universal AGP v3.0 Complacente e suporta Interface c/ Transação de Escrita Rápida AGP 8X/4X • Engenho de alta performance embutido de 256-bit 3D e formato de ponto flutuante de 32-bit engenho de configuração triangular VLIW • Linque I/O Multi-entrelaçado assegurando a concurrência de correntes de transferência de dados para cima/para baixo com banda de 1.2GB/s • Especificação PCI 2.2 Compatível • Linque mestre multi-entrelaçado I/O com Read Pipelined Streaming
Suporte de memória	• Dois sockets DIMM com 184 pinos para módulos de memória DDR • Suporta bus de memória DDR**400** MHz • A memória máxima instalada é de 2GB
VGA	• Acelerador de Gráfico 3D de Alta Performace & Qualidader: engenho 3D de 256-bit de alta-performance embutido • Acelerador de Gráfico 2D de Alta-Performance: registro de quadro máximo de 128MB com adressamento linear • Decodificador de Vídeo MPEG-2/1: padrões MPEG-2 ISO/IEC 13818-2 MP@HL e MPEG-1 ISO/IEC 11172-2 compatíveis
AC97 Audio Codec	• 6- canais e complacente com Especificação Intel® AC'97 (REV. 2.3) , de acordo com os requerimentos da Microsoft® PC2001 • Gerenciamento de força avançada e capacidade de economia de energia. • Função Stereo Line-in compatível com a saída do Surround. • Input de CD Áudio análogo pseudo diferencial de alta qualidade. • S/PDIF Input/Output suporta : S/PDIF In é caracterizado com suporte com funcionalide de anti-distorção, anti-ruído, auto-trava, e interrompimento. • Tecnologia add-on software valiosa: Suporta a maioria dos padrões industriais de som de PC 3D e função única de karaoke caracterizado com suporte para microfone eco, troca de tom e cancelamento vocal.

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Slots de expansão	• Dois encaixes 32-bit PCI slots • Um slot AGP 8x • Um encaixe para CNR (Communications and Networking Riser)
IDE na placa	• Dois conectores IDE • Suporta modos PIO (Input/Output Programável) e DMA (Direct Memory Access) • Suporta IDE Ultra DMA bus mastering com razão de transferência de 33/66/100/**133** MB/sec
Portas I/O na placa	A placa principal possui um conjunto completo de portas e conectores I/O: • Duas portas PS/2 para o rato e teclado • Uma porta série • Uma porta paralela • Uma porta VGA • Oito portes USB2.0 (quatro portes traseiros, dois conectores USB embutidos JUSB1/JUSB2 fornecendo quatro portes extras) • Jacks audio para microfone, line-in e line-out
Fast Ethernet LAN (optional)	• Suporta operação 10/100Mbps e operação parcial/completa duplex • IEEE 802.3/802.3u complacente • Suporta IEEE 802.3u cláusula 28 auto negociação • Suporta operação sob o modo Link Down Power Saving • Suporta compensação Base Line Winder (BLW) • Equalização Adaptativa
USB 2.0	• Compatível com Universal Serial Bus Revisão 2.0 da especificação • Compatível com controlador Enhanced Host da Intel Revisão 0.95 da especificação da interface • Compatível com controlador Universal Host Revisão 1.1 da especificação da Interface • O dispositivo PCI muli-funções consiste em dois núcleos de **Controlador UHCI Host Controller** para sinalização de velocidade total/baixa em um núcleo de **Controlador EHCI Host** para sinalização de alta velocidade • O núcleo de raiz consiste em 4 portas de protecção a jusante com transreceptores de camadas físicas integrados partilhados pelos controladores Host **UHCI** e **EHCI** • Suporte de gestão de energia PCI-Bus Revisão 1.1 da especificação da interface • Suporte para todas as portas de protecção a jusante

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

检查单

您的主板包装含有以下项目：
- ❑ 主板
- ❑ 用户手册
- ❑ 一根磁盘驱动器扁平电缆（可选）
- ❑ 一根 IDE 驱动器扁平电缆
- ❑ 软件支持 CD

功能

处理器	**支持 Socket-478 处理器** • 支持带有/多线程技术的 Intel Pentium 4 系列 CPU • 支持 **800 MHz** 前端总线 *"多线程"技术可以让操作系统认为自己连接了两个处理器，允许两个线程并行运行，每个线程位于同一处理器中的单独"逻辑"处理器中。*
芯片组	芯片组包含 **SiS661FX 北桥**和 **SiS964L** ，它基于一种新型的、可扩展的架构，能提供已经证明的可靠性和高性能。 • 集成兼容 A.G.P 的 Target/66Mhz 主机到 PCI 桥：兼容常规 AGP v3.0，支持带有 Fast Write Transaction 的 AGP 8X/4X 接口 • 内建高性能 256 位 3D 引擎和 32 位浮点式 VLIW 三角设置引擎 • 集成多线程 I/O 连接，确保 1.2GB/s 带宽的并发上行/下行数据传输 • 符合 PCI 2.2 规格 • 集成多线程 I/O 连接，通过可读传输信号流控制
内存支持	• 2 个用于 DDR 内存条的 184-pin DIMM 插槽 • 支持 DDR**400** MHz 存储总线 • 内存最多可达 2GB
VGA	• 高性能高质量 3D 图形加速器：内建高性能 **256 位 3D** 引擎 • 高性能 2D 图形加速器：最大 128MB 帧缓冲区，带线性寻址 • MPEG-2/1 视频解码器：符合 MPEG-2 ISO/IEC 13818-2 MP@HL 和 MPEG-1 ISO/IEC 11172-2 标准
AC97 音频编解码器	• 6 通道，符合 Intel® AC'97 (REV. 2.3) 规格，满足 Microsoft® PC2001 要求 • 高级电源管理和节电功能。 • 共享环绕输出的立体声线入功能。 • 高质量伪差分模拟 CD 音频输入。 • 支持 S/PDIF 输入/输出：S/PDIF In 支持中断、自锁、抗噪和抗失真功能。 • 增值软件技术。支持大部分 PC 3D 立体声行业标准和卡拉 OK 功能，支持话筒回声消除、键移动和声音消除功能。

扩展槽	• 2 个 32 位 PCI 扩展插槽 • 1 个 8X/4X AGP 插槽 • 一个通信网络转接 (CNR) 插槽
Onboard IDE	• 2 个 IDE 接口 • 支持 PIO (程控输入/输出) 和 DMA (直接存储器存取) 模式 • 支持 IDE Ultra DMA 总线控制，传输速率可达 33/66/100/**133** MB/sec
集成 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 个并口 • 1 个 VGA 端口 • 8 个 USB **2.0** 端口(主板后面板带 4 个接口，板上 USB 接口 JUSB1/JUSB2 提供其它 4 个端口) • 麦克风、线入和线出声音插孔
Fast Ethernet LAN (optional)	• 支持 10/100Mbps 工作和半/全双工工作 • 符合 IEEE 802.3/802.3u 标准 • 支持 IEEE 802.3u 第 28 项的自协商 • 支持链路故障节电模式下操作 • 支持基线漂移 (BLW) 补偿 • 自适应均衡
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

部分硬件规格和软件项目若有更改恕不另行通知。

Chapter 1

Introduction

This mainboard has a **Socket-478** to support **Intel Pentium 4 / Hyper Threading Technology** processors with Front-Side Bus (FSB) speeds up to **800 MHz**. Hyper Threading Technology, designed to take advantage of the multitasking features in Windows XP, gives you the power to do more things at once.

It integrates the **SiS661FX** Northbridge and **SiS964L** Southbridge that support the built-in **USB 2.0** providing higher bandwidth, implementing **Universal Serial Bus Specification Revision 2.0** and is compliant with **UHCI 1.1** and **EHCI 0.95**. It supports **AC 97 Audio Codec** and provides **Ultra DMA** 66/100/**133** function. It has one **8x AGP**, one **CNR** and two 32-bit **PCI** slots. There is a full set of I/O ports including two PS/2 ports for mouse and keyboard, one serial port, one parallel port, one VGA port and maximum eight USB2.0 ports – four back-panel ports and two onboard USB connectors JUSB1/JUSB2 providing four extra ports by connecting the Extended USB Module to the mainboard.

It is a Micro **ATX** mainboard and has power connectors for an ATX power supply.

Note:*You must initiate the HT CPU function through BIOS setup. It is strongly recommended you refer to Page 36 for relative details.*

Key Features

This mainboard has these key features:

Socket-478 Processor

♦ Supports **Intel Pentium 4 series** CPU with **Hyper Threading** Technology
♦ Supports up to **800 MHz** Front-Side Bus

> ***Hyper-Threading*** *technology enables the operating system into thinking it's hooked up to two processors, allowing two threads to be run in parallel, both on separate 'logical' processors within the same physical processor.*

Chipset

There are **SiS661FX** Northbridge and **SiS964L** Southbridge in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance.

♦ Integrated A.G.P. Compliant Target/66Mhz Host-to-PCI Bridge: Universal AGP v3.0 Compliant and supports AGP 8X/4X Interface w/ Fast Write Transaction
♦ Built-in a high performance 256-bit 3D engine and 32-bit floating point format VLIW triangle setup engine
♦ Integrated Multi-threaded I/O link ensures concurrency of upstream/down stream data transfer with 1.2GB/s bandwidth
♦ PCI 2.2 Specification Compliance
♦ Integrated Multithreaded I/O Link Mastering with Read Pipelined Streaming

Memory Support

♦ Two 184-pin DIMM sockets for DDR SDRAM memory modules
♦ Supports DDR**400** memory bus
♦ Maximum installed memory is 2GB

VGA
- ◆ High Performance & High Quality 3D Graphics Accelerator: built-in a high performance 256-bit 3D engine
- ◆ High Performance 2D Graphics Accelerator: maximum 128MB frame buffer with linear addressing
- ◆ MPEG-2/1 Video Decoder: MPEG-2 ISO/IEC 13818-2 MP@HL and MPEG-1 ISO/IEC 11172-2 standards compliant

AC97 Audio Codec
- ◆ 6- channel and compliant with Intel® AC'97 (REV. 2.3) Spec, meeting with Microsoft® PC2001 requirements
- ◆ Advanced power management and power saving capabilities.
- ◆ Stereo Line-in function shared with Surround out.
- ◆ High quality pseudo-differential analog CD Audio input.
- ◆ S/PDIF Input support: S/PDIF In is featured with interrupt, auto-lock, anti-noise, and anti-distortion functionalities support.
- ◆ Valuable add-on software technology: Support most industry standards of PC 3D sound and unique karaoke function support featured with microphone echo, key shifting, and vocal cancellation.

Expansion Options

The mainboard comes with the following expansion options:
- ◆ Two 32-bit PCI slots
- ◆ One 8x AGP slot
- ◆ One CNR slot

Onboard IDE
- ◆ Two IDE Connectors
- ◆ Supports PIO (Programmable Input/Output) and DMA (Direct Memory Access) modes
- ◆ Supports IDE Ultra DMA bus mastering with transfer rates of 33/66/100/**133** MB/sec

3

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 parallel port
- ♦ One VGA port
- ♦ Eight USB2.0 ports (four back-panel ports, two onboard USB connectors JUSB1/JUSB2 providing four extra ports
- ♦ Audio jacks for microphone, line-in and line-out

Fast Ethernet LAN (optional)

- ♦ Supports 10/100Mbps operation and half/full duplex operation
- ♦ IEEE 802.3/802.3u compliant
- ♦ Supports IEEE 802.3u clause 28 auto negotiation
- ♦ Supports operation under Link Down Power Saving mode
- ♦ Supports Base Line Winder (BLW) compensation
- ♦ Adaptive Equalization

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

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 and memory timing
♦ CPU and memory timing

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

Bundled Software

♦ **PC-Cillin 2002** provides automatic virus protection under Windows 98/ME/NT/2000/XP
♦ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions

♦ Micro ATX form factor of 244 x 200 mm

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

Package Contents

Your mainboard package contains the following items:
- ❑ The mainboard
- ❑ The User's Manual
- ❑ One diskette drive ribbon cable (optional)
- ❑ One IDE drive ribbon cable
- ❑ The Software support CD

Optional Accessories

You can purchase the following optional accessories for this mainboard.
- ❑ The Extended USB module

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

Chapter 2

Mainboard Installation

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

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

Note:
1. Before installing this mainboard, make sure jumper JP3 is under Normal setting. See this chapter for information about locating JP3 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the mainboard.

Mainboard Components

Identify major components on the mainboard via this diagram underneath.
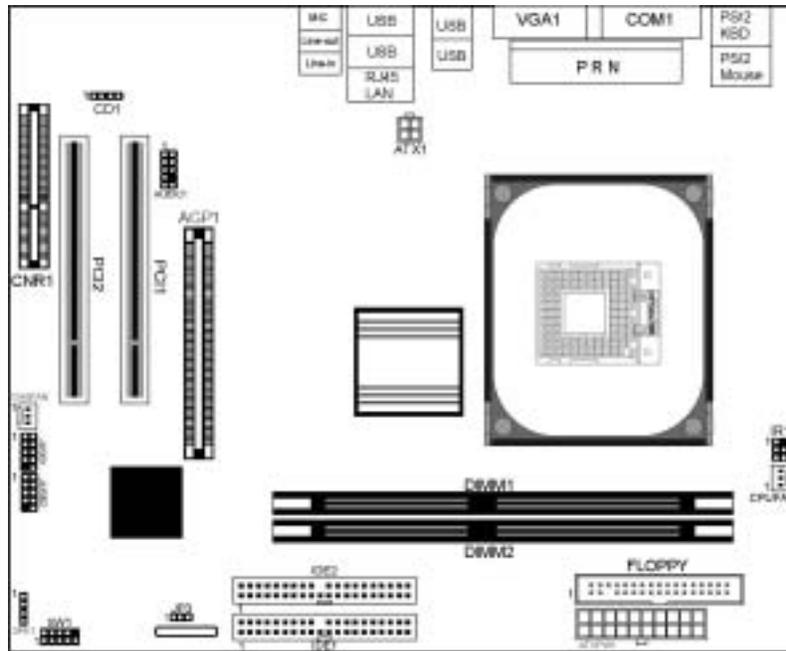
I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.
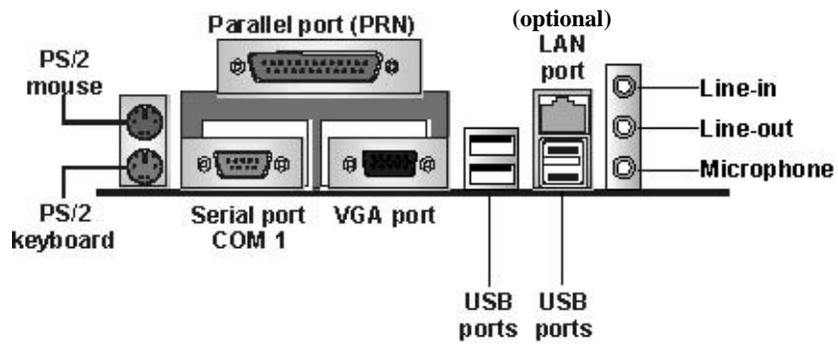
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (PRN)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
VGA	Use the VGA port to connect VGA devices.
LAN Port (optional)	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
USB Ports	Use the USB ports to connect USB devices.
Audio Ports	Use 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.

Installing the Processor

This mainboard has a Socket 478 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure
Follow these instructions to install the CPU:

SOCKET-478

Pin 1

1 CPUFAN

9
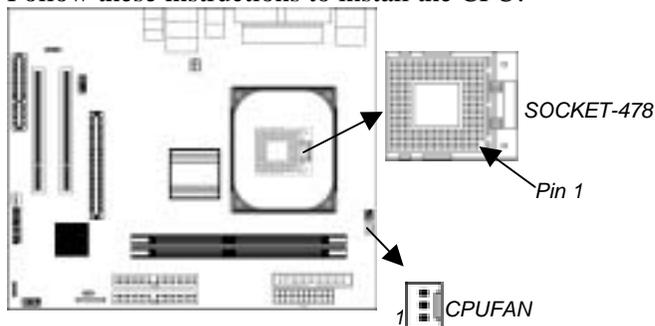
1. Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.
2. Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6. Plug the CPU fan power cable into the CPU fan connector (CPUFAN) on the mainboard.

Installing Memory Modules

This mainboard accommodates two 184-pin 2.5V unbuffered Double Data Rate SDRAM (DDR SDRAM) Dual Inline Memory Module (DIMM) sockets, and supports up to 2.0 GB of **400** MHz DDR SDRAM.

DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. DDR DIMMs can synchronously work with 100 MHz, 133 MHz, 166 MHz or 200 MHz memory bus.

DDR SDRAM provides 1.6 GB/s, 2.1 GB/s, 2.7 GB/s or 3.2 GB/s data transfer rate when the bus is 100 MHz, 133 MHz, 166 MHz or 200 MHz, respectively.

DIMM1

DIMM2
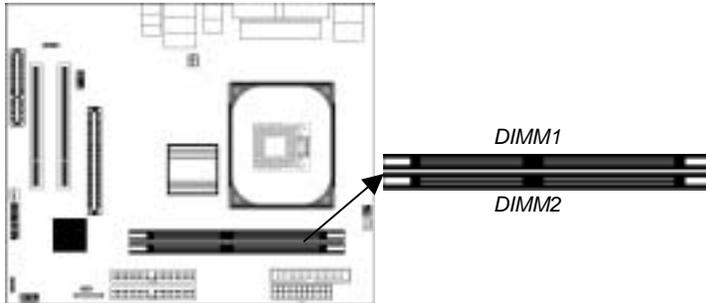
Memory Module Installation Procedure

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

1. Push down the latches on both sides of the DIMM socket.
2. Align the memory module with the socket. There is a notch on the DIMM socket that you can install the DIMM module in the correct direction. Match the cutout on the DIMM module with the notch on the DIMM socket.
3. Install the DIMM module into the socket and press it firmly down until it is seated correctly. The socket latches are levered upwards and latch on to the edges of the DIMM.
4. Install any remaining DIMM modules.

Jumper Settings

Connecting two pins with a jumper cap is SHORT; removing a
jumper cap from these pins, OPEN.
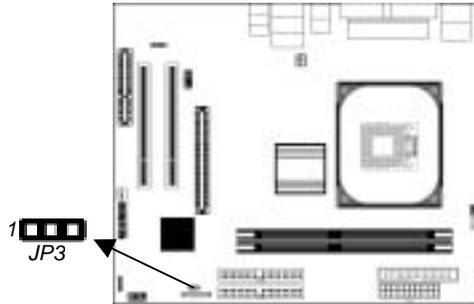
JP3: Clear CMOS Jumper
Use this jumper to clear the contents of the CMOS memory. You
may need to clear the CMOS memory if the settings in the Setup
Utility are incorrect and prevent your mainboard from operating.
To clear the CMOS memory, disconnect all the power cables from
the mainboard and then move the jumper cap into the CLEAR
setting for a few seconds.

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

Install the Mainboard

Install the mainboard in a system chassis (case). The board is a
Micro ATX size mainboard. You can install this mainboard in an
ATX case. Make sure your case has an I/O cover plate matching
the ports on this mainboard.
Install the mainboard in a case. Follow the case manufacturer's
instructions to use the hardware and internal mounting points on
the chassis.
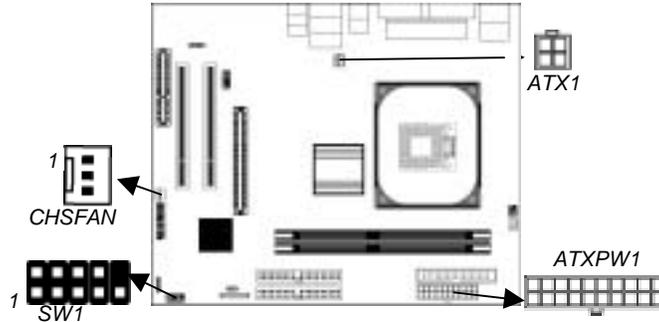
Connect the power connector from the power supply to the **ATXPW1** connector on the mainboard. **ATX1** is the CPU Vcore power connector.

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

Connect the case switches and indicator LEDs to the **SW1** connector. Here is a list of the SW1 pin assignments.

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

Connecting Optional Devices

Refer to the following information to connect the mainboard's optional devices:
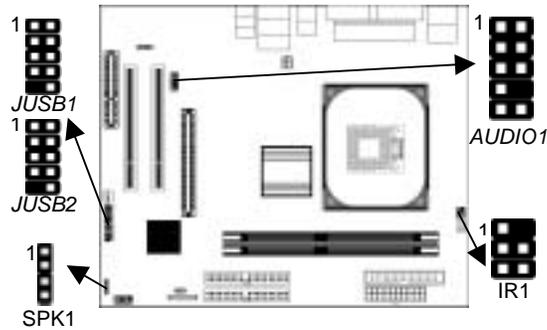
SPK1: Speaker Connector

Connect the cable from the PC speaker to the SPK1 connector on the mainboard.

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

AUDIO1: Front Panel Audio Connector

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

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

JUSB1/JUSB2: Front panel USB Connector
The mainboard has USB ports installed on the rear edge I/O port
array. Additionally, some computer cases have USB ports at the
front of the case. If you have this kind of case, use auxiliary USB
connectors JUSB1/JUSB2 to connect the front-mounted ports to
the mainboard.

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

1. Locate the JUSB1/2 connector on the mainboard.
2. Plug the bracket cable onto the JUSB1/2 connector.
3. Remove a slot cover from one of the expansion slots on the
    system chassis. Install an extension bracket in the opening.
    Secure the extension bracket to the chassis with a screw.

IR1: Infrared Port
The infrared port allows the wireless exchange of information
between your computer and similarly equipped devices such as
printers, laptops, Personal Digital Assistants (PDAs), and other
computers.

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

1. Locate the infrared port **IR1** connector on the mainboard.
2. If you are adding an infrared port, connect the ribbon cable
    from the port to the IR1 connector and then secure the port to
    an appropriate place in your system chassis.

Install Other Devices

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

IDE2

1

1

IDE1

1
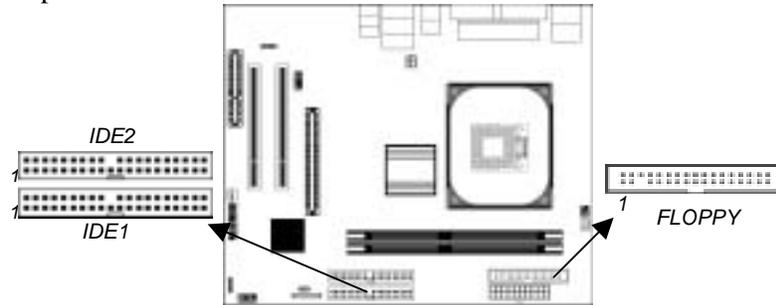
FLOPPY

Floppy Disk Drive

The mainboard ships with a floppy disk drive cable that can support one or two drives. Drives can be 3.5" or 5.25" wide, with capacities of 360K, 720K, 1.2MB, 1.44MB, or 2.88MB. Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FLOPPY**.

IDE Devices

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among others.
The mainboard ships with an IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device. The Master device connects to the end of the cable.
Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard.
If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

Internal Sound Connections

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.
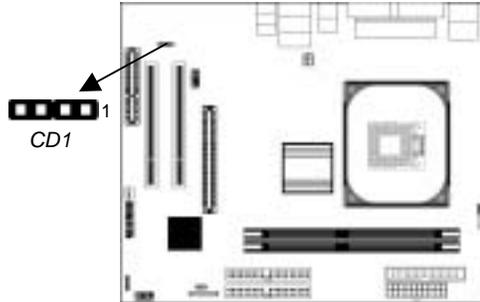
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the mainboard, locate the 4-pin connector **CD1**.

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

Expansion Slots

This mainboard has one AGP, CNR and two 32-bit PCI slots.

17
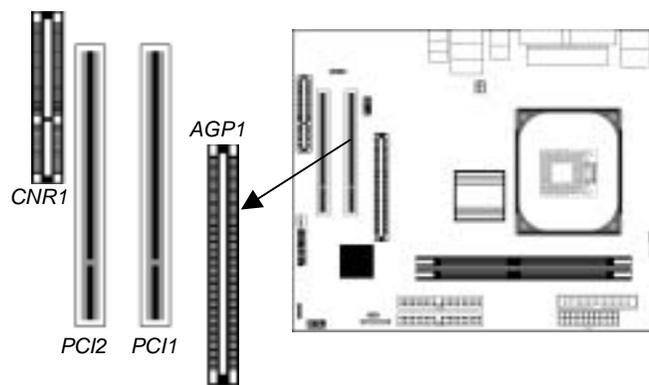
Follow the steps below to install an AGP/CNR/PCI expansion card.
1. Locate the AGP, CNR or PCI slots on the mainboard.
2. Remove the blanking plate of the slot from the system chassis.
3. Install the edge connector of the expansion card into the slot.
    Ensure the edge connector is correctly seated in the slot.
4. Secure the metal bracket of the card to the system chassis with
    a screw.

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

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

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

Chapter 3

BIOS Setup Utility

Introduction

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

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

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

Running the Setup Utility

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

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

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

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

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

20

Standard CMOS Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.		
Standard CMOS Setup		
System Time: 00:01:52		Help Item
System Date: Thu 11/06/2003		
►Primary IDE Master : Auto ►Primary IDE Slave : Auto ►Secondary IDE Master : Auto ►Secondary IDE Slave : Auto		User [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time.
Floppy Drive A : 1.44 MB 3 1/2 Floppy Drive B : Disabled		

Date & Time	These items set up system date and time.
IDE **Primary Master** **Primary Slave** **Secondary Master** **Secondary Slave**	These items 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**	These items set up size and capacity of the floppy diskette drive(s) installed in the system.

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Advanced Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.		
Advanced Setup		
Share Memory Size	32 MB	**Help Item**
Quick Boot	Enabled	
1st Boot Device	1st Floppy Drive	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
2nd Boot Device	Realtek Boot Agen	
Try Other Boot Device	Yes	
Bootup Num-Lock	On	
Boot To OS/2 > 64MB	No	
Graphic Win Size	64MB	
DRAM CAS# Latency	By SPD	
Performance Mode Select	Disabled	
MA 1T/2T Select	Auto	
Hyper Threading Function	Disabled	
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	

Share Memory Size	This item lets you allocate a portion of the main memory for the onboard VGA display application with five options of 4/8/16/32/64 MB.
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**	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
BootUp Num-Lock	This item determines if the Num Lock key is active or inactive at system start-up time.

Boot To OS/2> 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.
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 SDRAM memory CAS (column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.
Performance Mode Select	You can enable this item to achieve a better performance; however, it is necessary to use a better DDR SDRAM going with this function.
MA 1T/2T Select	This item adjusts timing 1T/2T latency. We recommend you to leave this item at the default value.
Hyper Threading Function	If your P4 CPU is not HT CPU, this item will be hidden. If your P4 CPU is HT CPU, BIOS will show this item. You can set "Disabled" or "Enabled" to control HT CPU support in O.S. Set "Enabled" to test HT CPU function.
Auto detect DIMM/PCI Clock	When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.
Spread Spectrum	If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Features Setup Page

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

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

OnBoard Floppy Controller	Use this item to enable or disable the onboard floppy disk drive interface.
Serial Port1 Address	Use this item to enable or disable the onboard COM1/2 serial port, and to assign a port address.
OnBoard IR Port	Use this item to enable or disable the onboard infrared port, and to assign a port address.
Parallel Port Address	Use this item to enable or disable the onboard Parallel port, and to assign a port address.
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.
ECP Mode DMA Channel	Use this item to assign a DMA channel to the parallel port.
OnBoard PCI IDE Controller	Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.

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Audio Device	This item enables or disables the AC'97 audio chip.
Modem Device	This item enables or disables the MC'97 modem chip.
Ethernet Device	This item enables or disables the onboard Ethernet LAN.
OnBoard USB Function	Enable this item if you plan to use the USB ports on this mainboard.
USB Function For DOS	Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

Power Management Setup Page

This page sets some parameters for system power management operation.

```
CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.
                      Power Management Setup
┌──────────────────────────────────────────────┬─────────────────────┐
│ ACPI Aware O/S         Yes                     │     Help Item       │
│ Power Management       Enabled                 ├─────────────────────┤
│ Suspend Mode           S1                      │ Yes / No            │
│ Suspend Time Out       Disabled                │ ACPI support for    │
│ Resume On RTC Alarm    Disabled                │ Operating System.   │
│ Keyboard Power On      Disabled                │ Yes: If OS          │
│ LAN/Ring Power On      Disabled                │ supports ACPI.      │
│                                                │ No: If OS does not  │
│                                                │ support ACPI.       │
│                                                │                     │
└──────────────────────────────────────────────┴─────────────────────┘
```

ACPI Aware O/S	This item supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.
Power Management	Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Both APM and ACPI are supported.

Suspend Mode	This item selects the status S1(Stop Clock) or S3(Suspend to RAM) when the system enters the power-saving Suspend mode.
Suspend Time Out	This item sets up the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.
Resume On RTC Alarm	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.
Keyboard Power On	If you enable this item, the system can automatically resume by pressing hot keys on the keyboard or typing in the password. You must enable the Keyboard Power On jumper and use an ATX power supply in order to use this feature.
LAN/Ring Power On	Your system can enter the software power down. If you enable this item, the system can automatically resume if there is traffic on the network adapter.

PCI / Plug and Play Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. PCI / Plug and Play Setup		
Primary Graphics Adapter	AGP	Help Item
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Disabled	Select which graphics controller to use as the primary boot device.

Primary Graphics Adapter	This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default AGP setting still lets the onboard display work and allows the use of a second display card installed in an AGP slot.
Allocate IRQ to PCI VGA	If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.
PCI IDE BusMaster	This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

BIOS Security Features Setup Page

This page helps you install or change a password.

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. BIOS Security Features Setup	
Security Settings	Help Item
Supervisor Password : Not Installed Change Supervisor Password Press Enter	Install or Change the password.

Supervisor Password	This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.
Change Supervisor Password	You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

CPU PnP Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc. CPU PnP Setup		
Manufacturer : Intel		Help Item
Ratio Status : Locked Ratio Actual Value : 23 Ratio CMOS Setting : 8 Auto Detect CPU and DRAM FREQU Auto CPU Frequency Setting : 133 MHz DRAM Frequency : Auto		Sets the ration between CPU Core Clock and the FSB Frequency. Note: If an invalid ratio is set in CMOS then actual and setpoint values may differ.

Manufacturer/ Ratio Status/ Ratio Actual Value	These items show the brand, the Locked/ Unlocked ratio status, and the actual ratio of the CPU installed in your system.
Ratio CMOS Setting	This item shows the current ratio of the CPU installed in your system.
Auto Detect CPU and DRAM FREQU	When this item is enabled, it automatically detects and shows the frequency of the CPU and DRAM memory installed in your system; when disabled, it can adjust the frequency of the CPU and DRAM memory.
CPU Frequency	This item shows the frequency of the CPU installed in your system.
DRAM Frequency	This item shows the frequency of the DRAM in your system.

Hardware Monitor Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.	
Hardware Monitor Setup	
*** System Hardware Monitor***	Help Item
Vcore 1.419V	
Vdimm 2.560V	
Vivdd 1.776V	
Vcc5V 5.040V	
SB3V 3.338V	
CHASSIS Fan Speed 0 RPM	
CPU Fan Speed 0 RPM	
SYSTEM Temperature 33°C/91°F	
CPU Temperature 47°C/116°F	

CPU/System Temperature	These items display CPU and system temperature measurement.
FAN & Voltage Measurements	These items indicate cooling fan speeds in RPM and the various system voltage measurements.

Load Optimal Defaults

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

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

Save Changes and Exit

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

Discard Changes and Exit

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

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

Chapter 4

Software & Applications

Introduction

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

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

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

If your operating system is Windows 98/ME/2000/XP, it will automatically install all the drivers and utilities for your mainboard; if Windows NT or manual installation, please follow the instructions described as the Installing under Windows NT or Manual Installation section.

Installing Support Software

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

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

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

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

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

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

Auto-Installing under Windows 98/ME/2000/XP
If you are under Windows 98/ME/2000/XP, please click the **Setup** button to run the software auto-installing program while the Auto Setup screen pops out after inserting the support CD-ROM:

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

2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.

3. The support software will automatically install.

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

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

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

Bundled Software Installation

All bundled software available on the CD-ROM is for users' convenience. You can install bundled software as follows:
1. Click the **Application** button while the Auto Setup screen pops out after inserting the support CD-ROM.
2. A software menu appears. Click the software you want to install.
3. Follow onscreen instructions to install the software program step by step until finished.

Hyper Threading CPU

You must update BIOS to initiate BIOS Hyper Threading Function and use HT CPU function under WinXP Operating System; if not, please disable this option.

♦ When BIOS detects the HT CPU, it shows the "Hyper Threading Function (default Disabled)" option, which you must set Enabled if you want to test HT CPU function. If there is no HT CPU, this option is hidden and default Disabled.

♦ You must re-install WINXP to activate the HT CPU function.
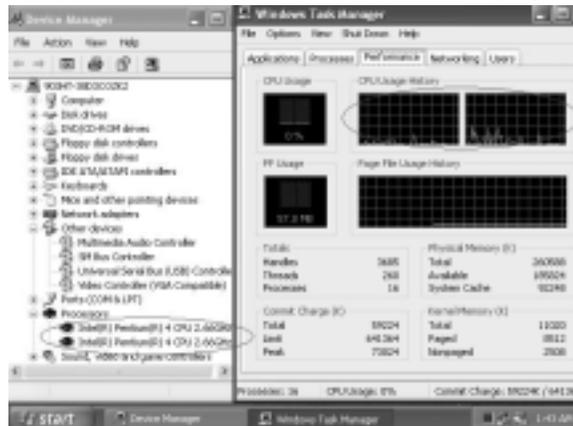
While you are in Windows Task Manager, please push down ctrl+Alt Del keys. A dual CPU appears in the CPU Usage History&Device Manager under WinXP.

Note: Hyper Threading Function only works under WINXP Operating System; therefore, disable it under other Operating System.