CERTIFICATE

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

hereby certifies in accordance with TÜV CERT
procedure that

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

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

has established and applies a quality system for

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

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

Proof has been furnished that the requirements according to

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

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

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

TGA-ZM-30-96-00

Essen, 04.03.2004

RWTÜV

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

CERTIFICATION

S Z E C

ISO14001
CERTIFICATE

Certificate NO.: 05-2001-065

We hereby certify that

ECS Manufacturing(Shenzhen) Co.,Ltd

by reason of its

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

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

Date of issue: 30th Dec 2001
Date of expiry: 29th Dec 2004
Signed by:
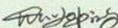
SHENZHEN ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION CENTER

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Table of Contents

Static Electricity Precautions

Static electricity could damage components on this 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.

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 **SiS963L** 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** 33/66/100/**133** function. It has one **8x AGP**, one **CNR** and three 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 six USB2.0 ports – four back-panel ports and one onboard USB connector USB2 providing two 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 37 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 **SiS963L** 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 IO Link Mastering
♦ Multithread I/O link Mastering with Read/Write Concurrent transaction

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:

- Three 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

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
- ♦ Six USB2.0 ports (four back-panel ports, onboard USB connectorsUSB2 providing two extra ports
- ♦ Audio jacks for microphone, line-in and line-out

Fast Ethernet LAN (optional)

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

USB 2.0

- ♦ Compliant with Universal Serial Bus Specification Revision 2.0
- ♦ Compliant with Intel's Enhanced Host Controller Interface Specification Revision 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.

Dimensions

- ♦ Micro ATX form factor of 244 x 220 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
- ❑ The Card Reader

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 JP2 is under Normal setting. See this chapter for information about locating JP2 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.
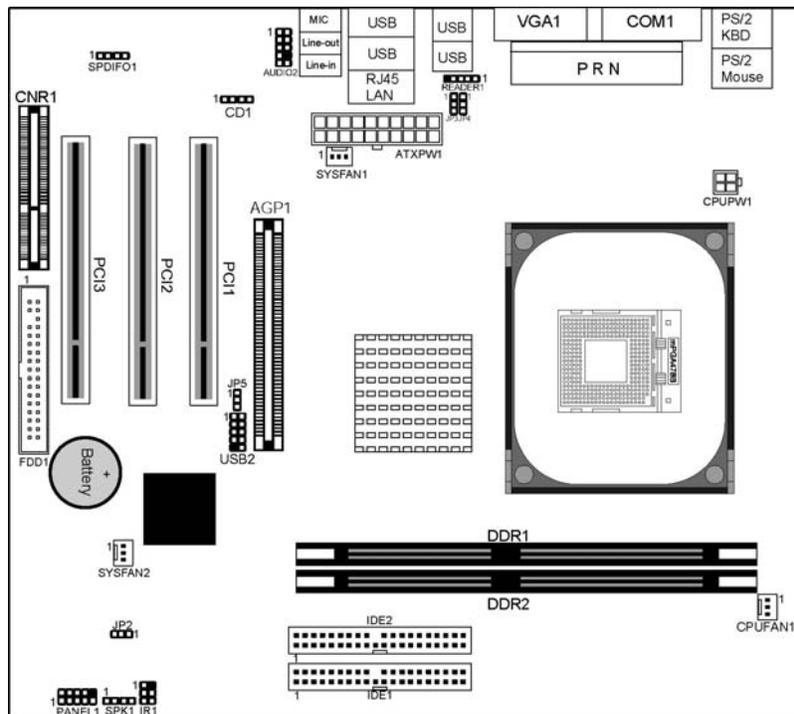
I/O Ports

The illustration below shows a side view of the built-in I/O ports on the mainboard.
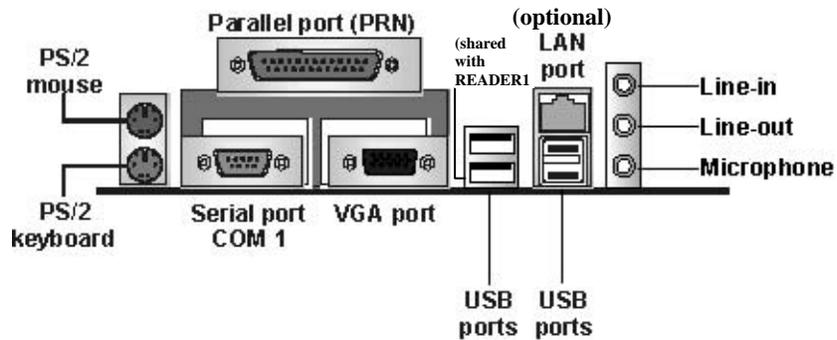
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (PRN)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice 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. *Note: The lower USB port located beside the VGA port is shared with the READER1 connector.*
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
CPUFAN1
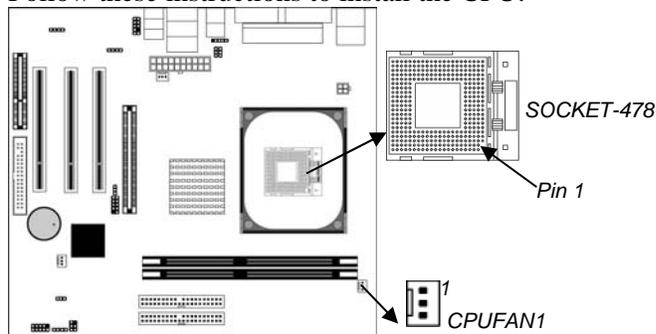
1. Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.
2. Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6. Plug the CPU fan power cable into the CPU fan connector (CPUFAN1) on the 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.

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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.

DDR1

DDR2
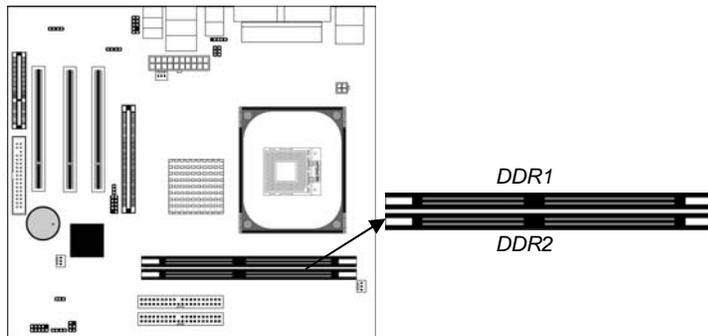
Memory Module Installation Procedure

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.

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Jumper Settings

Connecting two pins with a jumper cap is SHORT; removing a jumper cap from these pins, OPEN.
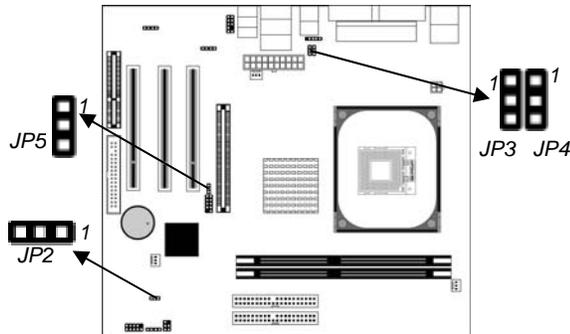
JP2: Clear CMOS Jumper

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

JP3/JP4/JP5: USB Power Selector

Use these jumpers to select the voltage for USB ports:

- **USBLAN1 Power Selector: JP3**

Function	Jumper Setting
VCC5V	Short pins 1-2
SB5V	Short pins 2-3

- **USB1 Power Selector: JP4**

Function	Jumper Setting
VCC5V	Short pins1-2
SB5V	Short pins2-3

- **USB2 Power Selector: JP5**

Function	Jumper Setting
VCC5V	Short pins1-2
SB5V	Short pins2-3

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.
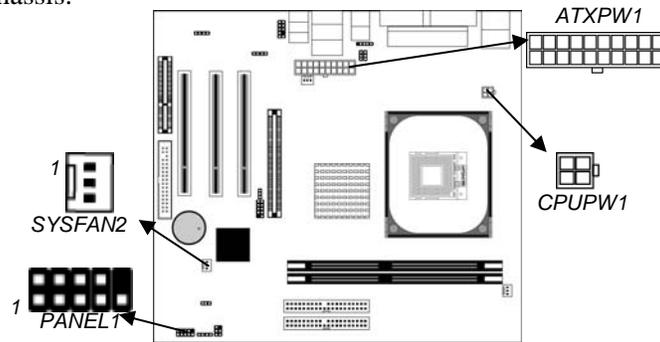
Connect the power connector from the power supply to the **ATXPW1** connector on the mainboard. **CPUPW1** is the CPU Vcore power connector.

If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSFAN1** fan power connector on the mainboard.

Connect the case switches and indicator LEDs to the **PANEL1** connector. Here is a list of the PANEL1 pin assignments.

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

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Connecting Optional Devices

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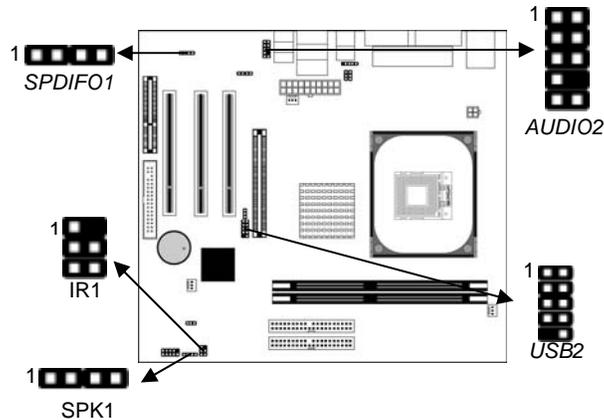
SPK1: Speaker Connector

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

AUDIO2: 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

USB2: 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 USB2 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 USB2 connector on the mainboard.
2. Plug the bracket cable onto the USB2 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.

READER1: USB Card Reader Connector (optional)

This connector is for connecting internal USB card reader. You can use a card reader to read or transfer files and digital images to your computer.

Pin	Signal
1	VCC
2	USB-
3	USB+
4	GND
5	KEY

The READER1 is shared with one of the USB ports of the I/O back panel. The USB port is located beside the VGA port connector. See "I/O Ports" for more information.

Please check the pin assignment of the cable and the USB connector on the mainboard. Make sure the pin assignment will match before plugging in. Any incorrect usage may cause unexpected damage to the system. The vendor won't be responsible for any incidental or consequential damage arising from the usage or misusage of the purchased product.

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.

SPDIFO1: SPDIF Out Connector

If your CD-ROM/DVD drive has digital audio output, you can connect it to the input pins of the SPDIF connector.

Pin	Signal	Pin	Signal
1	SPDIFOUT	2	+5VA
3	NC	4	GND

Install Other Devices

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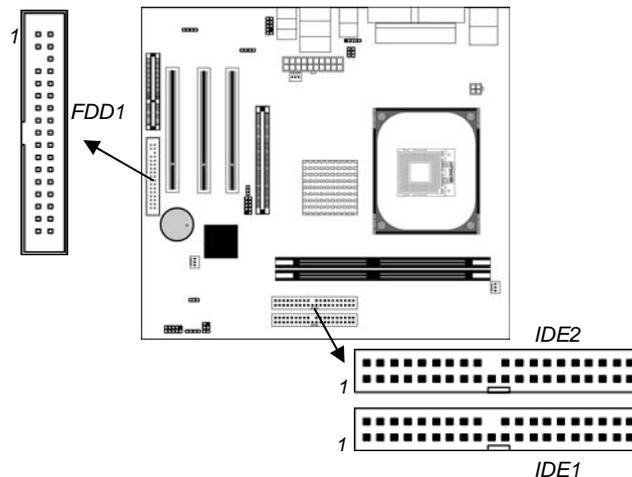
Floppy Disk Drive

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 **FDD1**.

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.

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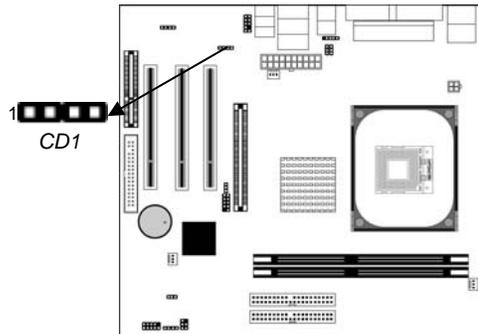
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the mainboard, locate the 4-pin connector **CD1**.

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

Expansion Slots

This mainboard has one AGP, CNR and three 32-bit PCI slots.
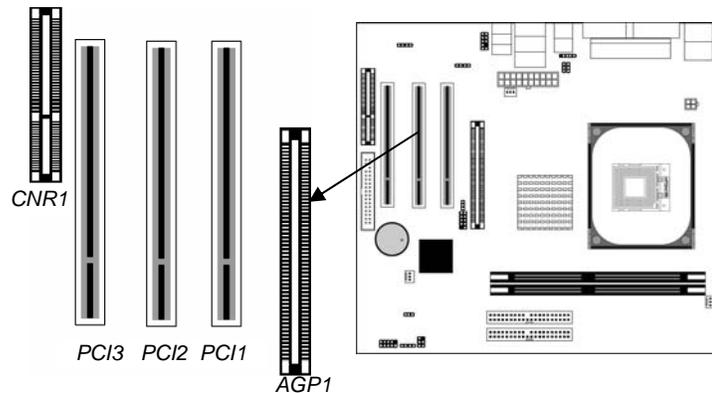
Follow the steps below to install an AGP/CNR/PCI expansion card.
1. Locate the AGP, CNR or PCI slots on the mainboard.
2. Remove the blanking plate of the slot from the system chassis.
3. Install the edge connector of the expansion card into the slot. Ensure the edge connector is correctly seated in 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.

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: System Date:	00:00:10 Fri 10/24/2003	Help Item
►Primary IDE Master : Auto ►Primary IDE Slave : Auto ►Secondary IDE Master : Auto ►Secondary IDE Slave : Auto Floppy Drive A : 1.44 MB 3 1/2 Floppy Drive B : Disabled		User [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system time.

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.

Advanced Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.		
Advanced Setup		
Quick Boot	Enabled	Help Item
1st Boot Device	PM-IC35L040AVVN07	
2nd Boot Device	SS-Pioneer DVD-R0	Allows BIOS to
3rd Boot Device	1st Floppy Drive	skip certain tests
Try Other Boot Device	Yes	while booting. This
Bootup Num-Lock	On	will decrease the
Boot To OS/2 > 64MB	No	time needed to
Graphic Win Size	64MB	boot the system.
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	
Vdimm Voltage Control	2.5V	

Quick Boot	If you enable this item, the system starts up more quickly be elimination some of the power on test routines.
1st Boot Device **2nd Boot Device** **3rd Boot Device**	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
BootUp Num-Lock	This item determines if the Num Lock key is active or inactive at system start-up time.
Boot To OS/2> 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.

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.
Vdimm Voltage Control	Use this item to adjust the voltage of the DIMM memory.

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 Port 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	
Parallel Port IRQ	IRQ7	
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 Port 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.
Parallel Port IRQ	Use this item to assign IRQ 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.
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.           │
│ USB Device Power On       Disabled        │ 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.

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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.
USB Device Power On	If you enable this item, the system can automatically resume by using the USB device.

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	PCI	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	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.
Ratio CMOS Setting :	8	
Auto Detect CPU and DRAM FREQU	Auto	
CPU Frequency Setting :	133 MHz	
DRAM Frequency :	166 MHz	

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 1.504V	
Vdimm 2.496V	
Vivdd 1.792V	
Vcc5V 5.107V	
SB3V 3.296V	
SYSTEM Fan1 Speed 0 RPM	
SYSTEM Fan2 Speed 0 RPM	
CPU Fan Speed 0 RPM	
SYSTEM Temperature 32°C/89°F	
CPU Temperature 41°C/105°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 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.
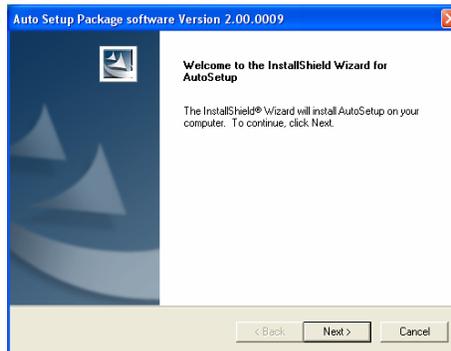
2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
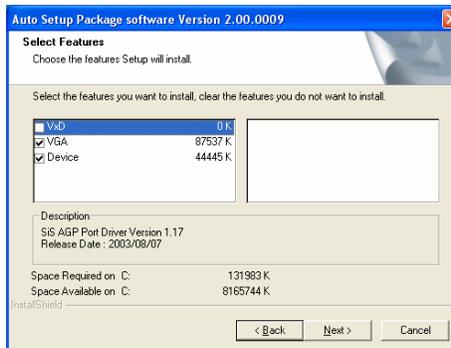
3. The support software will automatically install.

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.

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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

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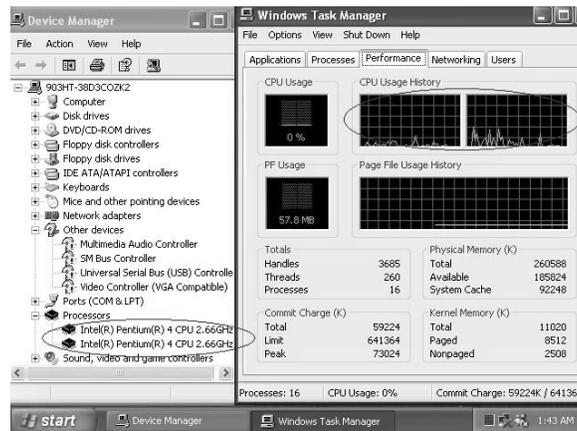
Note: *Hyper Threading Function only works under WINXP Operating System; therefore, disable it under other Operating System.*