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MSPM800-M Series, V3.0A
PM800/May 2004**

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Static Electricity Precautions

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

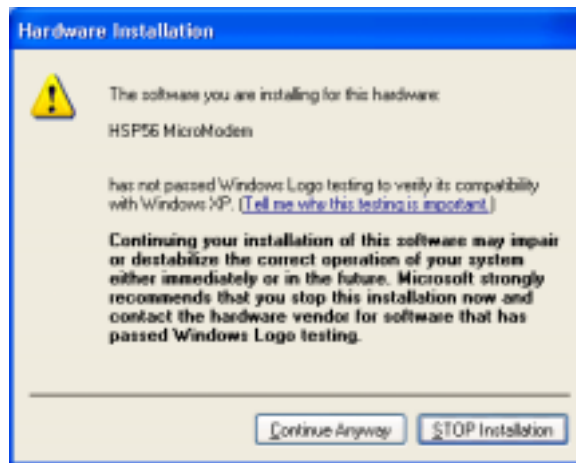
1. Don't take this motherboard and components out of their original static-proof package until you are ready to install them.
2. While installing, please wear a grounded wrist strap if possible. If you don't have a wrist strap, discharge static electricity by touching the bare metal of the system chassis.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

Pre-Installation Inspection

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

Notice:

1. Owing to Microsoft's certifying schedule is various to every supplier, we might have some drivers not certified yet by Microsoft. Therefore, it might happen under Windows XP that a dialogue box (shown as below) pops out warning you this software has not passed Windows Logo testing to verify its compatibility with Windows XP. Please rest assured that our RD department has already tested and verified these drivers. 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 motherboard has a **Socket-478** to support **Intel Prescott / Pentium 4** with **Hyper-Threading Technology** processors with Front-Side Bus (FSB) speeds up to **800/533/400 MHz**. The Prescott CPU provides higher power, better voltage regulator tolerance and thermal solution, performing better graphics and audio, speeding up the processor. 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 **VIA PM800** Northbridge along with **VT8237** Southbridge chipsets that supports the **Serial ATA** — a new interface for high-performance and mainstream desktop PCs; 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 1.0**.

It supports **AC'97 Audio Codec** and provides **Ultra DMA 133/100/66** function. It has one **8x AGP**, one **CNR** (Communications and Networking Riser) and three 32-bit **PCI** slots. There is a full set of I/O ports including two PS/2 ports for mouse and keyboard and audio jacks for microphone, line-in, line-out. One serial port, one VGA port, one parallel port, one LAN port (optional), four back-panel USB2.0 ports and onboard USB headers USB3/USB2 provide four extra ports by connecting the Extended USB Module to the motherboard.

This motherboard is a **Micro ATX** motherboard 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 38 for relative details.*

Key Features

This motherboard has these key features:

Socket-478 Processor

- ◆ Supports **Intel Prescott / Pentium 4 series** CPU with **Hyper-Threading** Technology
- ◆ Supports up to **800/533/400 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 **VIA PM800 Northbridge** and **VT8237 Southbridge** in the chipsets in accordance with an innovative and scalable architecture with proven reliability and performance. Here is a list of the chipset arrangement and their respective features:

NB	SB	Function
PM800	VT8237	CPU FSB: 800/533/400MHz DDR 400 , maximum eight USB2.0 ports, two Serial ATA connectors

- ◆ Defines Highly Integrated Solutions for Performance PC Desktop Designs--High performance Northbridge with 800/533/400 MHz Front Side Bus for Pentium 4 plus AGP 8x external bus.
- ◆ Provide superior performance between the CPU, DRAM, V-Link bus and AGP8X graphics controller bus with pipelined, burst, and concurrent operation.
- ◆ Full Featured Accelerated Graphics Port (AGP) Controller --AGP v3.0 compliant with 8x transfer mode.
- ◆ Advanced High-Performance DDR SDRAM Controller -- Supports DDR400, DDR333, DDR266, and DDR200 double-data-rate synchronous DRAM.
- ◆ Integrated Graphics with 2D/3D Video Acceleration.

- ◆ High Bandwidth 1GB/sec 16-bit V-Link Host Controller -- Configurable outstanding transaction queue for Host to V-Link Client accesses.
- ◆ Advanced System Power Management Support – ACPI 1.0B and PCI Bus Power Management 1.1 compliant.
- ◆ PCI to system memory data streaming up to 132Mbyte/sec (data sent to north bridge via high speed V-Link interface)
- ◆ PCI-2.2 compliant, 32-bit 3.3V PCI interface with 5V tolerant inputs
- ◆ Support three PCI slots of arbitration and decoding for all integrated functions and LPC bus.
- ◆ Dual Channel Serial ATA/RAID Controller—Complies with Serial ATA Specification Revision 1.0

Memory Support

- ◆ Two 184-pin DIMM sockets for DDR SDRAM memory modules
- ◆ Supports DDR400/333/266/200 memory bus
- ◆ Maximum installed memory is 2GB

AC'97 Audio Codec

- ◆ Compliant with AC'97 2.3 specification
- ◆ 16-bit Stereo full-duplex CODEC with independent and variable sampling rate
- ◆ Support for 3.3v digital, 5v analog power supply and low power consumption management
- ◆ Three analog line-level stereo inputs with 5-bit volume control: LINE_IN, CD, AUX

Expansion Options

The motherboard comes with the following expansion options:

- ◆ Three 32-bit PCI slots
- ◆ One 8xAGP slot
- ◆ One Communications Network Riser (CNR) slot

Onboard IDE

- ◆ Two IDE Connectors

- ◆ Supports IDE Ultra DMA bus mastering with transfer rates of **133/100/66 MB/sec**

Serial ATA

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

Onboard I/O Ports

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

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

Fast Ethernet LAN (optional)

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

USB 2.0

- ◆ Compliant with Universal Serial Bus Specification Revision 2.0
- ◆ Compliant with Intel's Enhanced Host Controller Interface Specification Revision 1.0
- ◆ Compliant with Universal Host Controller Interface Specification Revision 1.1
- ◆ PCI multi-function device consists of two **UHCI Host Controller** cores for full-/low-speed signaling and one **EHCI Host Controller** core for high-speed signaling

- ◆ Root hub consists 4 downstream facing ports with integrated physical layer transceivers shared by **UHCI** and **EHCI** Host Controller, up to eight functional ports.
- ◆ Support PCI-Bus Power Management Interface Specification release 1.1
- ◆ Legacy support for all downstream facing ports

BIOS Firmware

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

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

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

Bundled Software

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

Dimensions

- ◆ Micro ATX form factor of 244 x 220mm

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

Package Contents

Your motherboard package contains the following items:

- ❑ The motherboard
- ❑ 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 motherboard.

- ❑ The Extended USB module
- ❑ The CNR v.90 56K Fax/Modem card
- ❑ The Card Reader
- ❑ The Serial ATA cable (optional)

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

Chapter 2

Motherboard Installation

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

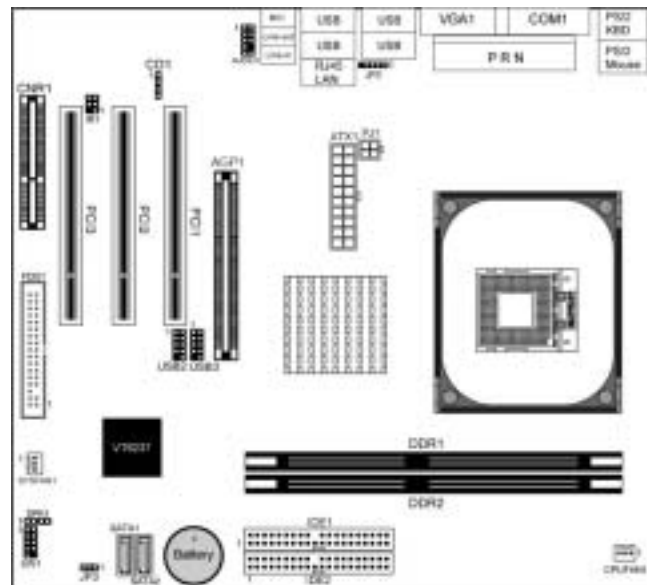
- ❑ Identify the motherboard components
- ❑ Install a CPU
- ❑ Install one or more system memory modules
- ❑ Make sure all jumpers and switches are set correctly
- ❑ Install this motherboard in a system chassis (case)
- ❑ Connect any extension brackets or cables to headers/connectors on the motherboard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

Note:

1. Before installing this motherboard, make sure jumper 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 motherboard.

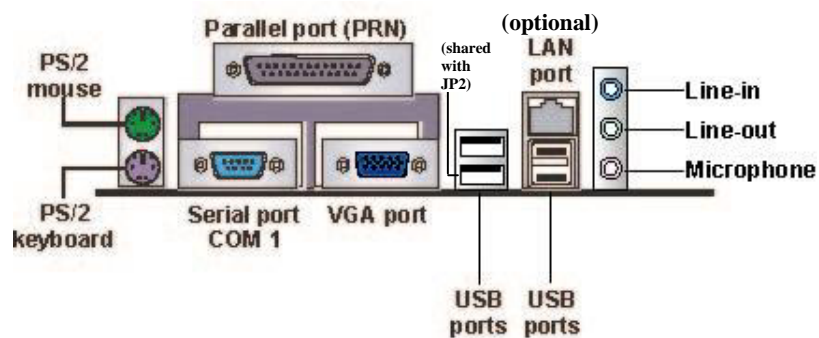
Motherboard Components

Identify major components on the motherboard via this diagram underneath.



I/O Ports

The illustration below shows a side view of the built-in I/O ports on the motherboard.



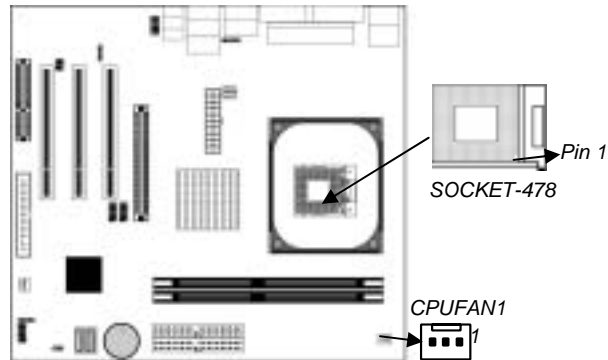
PS/2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS/2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (PRN)	Use the Parallel port to connect printers or other parallel communications devices.
COM1	Use the COM port to connect serial devices such as mice 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 motherboard 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:

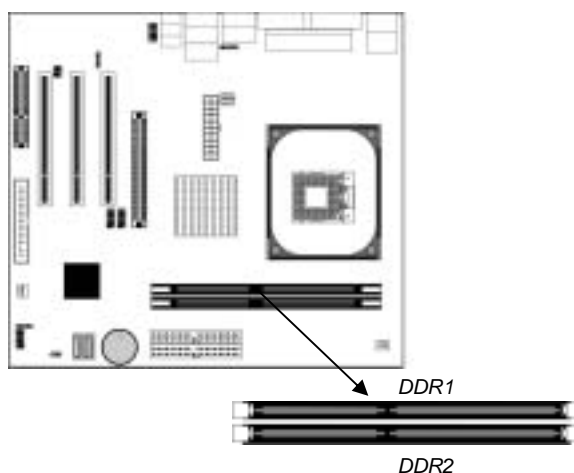


1. Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.
2. Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6. Plug the CPU fan power cable into the CPU fan connector (CPUFAN1) on the motherboard.

Installing Memory Modules

This motherboard accommodates two 184-pin 2.5V DIMM sockets (Dual Inline Memory Module) for unbuffered **DDR400/333/266/200** memory modules (Double Data Rate SDRAM), and maximum 2.0 GB installed memory.

DDR SDRAM is a type of SDRAM that supports data transfers on both edges of each clock cycle (the rising and falling edges), effectively doubling the memory chip's data throughput. DDR DIMMs can synchronously work with 400/333/266/200 MHz memory and provide 3.2 GB/s , 2.7 GB/s, 2.1 GB/s and 1.6GB/s data transfer rate.



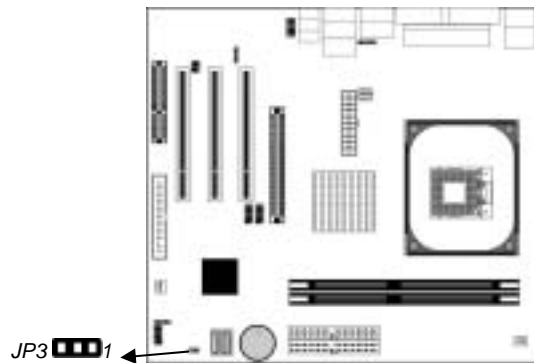
Memory Module Installation Procedure

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

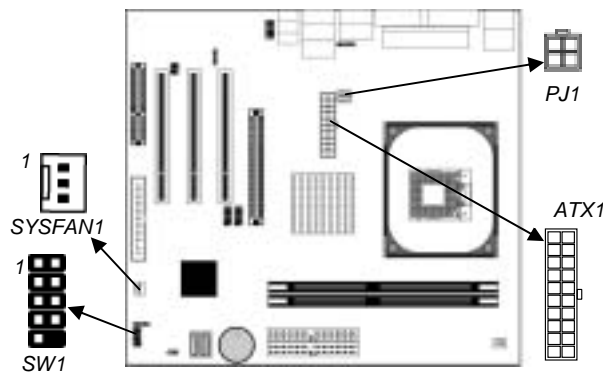
Use this jumper to clear the contents of the CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect and prevent your motherboard from operating. To clear the CMOS memory, disconnect all the power cables from the motherboard and then move the jumper cap into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

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

Install the Motherboard

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

Install the motherboard in a case. Follow the case manufacturer's instructions to use the hardware and internal mounting points on the chassis.



Connect the power connector from the power supply to the ATX1 connector on the motherboard. The **PJ1** is a +12V connector for CPU Vcore power.

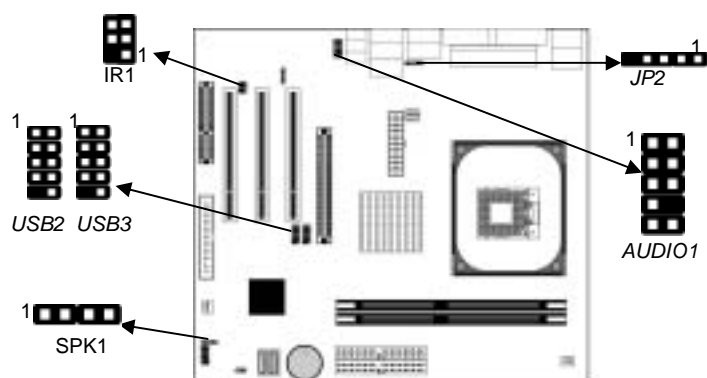
If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSFAN1** fan power connector on the motherboard.

Connect the case switches and indicator LEDs to the **SW1** header. 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 for information on connecting the motherboard's optional devices:



SPK1: Speaker Header

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

Pin	Signal	Pin	Signal
1	Vcc5	2	NC
3	GND	4	SPKR

AUDIO1: Front Panel Audio Header

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

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

USB2/USB3: Front Panel USB Headers

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

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

1. Locate the USB2/3 headers on the motherboard.
2. Plug the bracket cable onto the USB2/3 headers.
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.

JP2: USB Card Reader Header (optional)

This header 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	Pin	Signal
1	Vcc5	2	USB-
3	USB+	4	GND
5	KEY		

! *The JP2 is shared with one of the USB ports of the I/O back panel. The USB port is located near the Parallel port connector. See "I/O Ports" for more information.*

! *Please check the pin assignment of the cable and the USB header on the motherboard. 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 misuse of the purchased product.*

IR1: Infrared Header

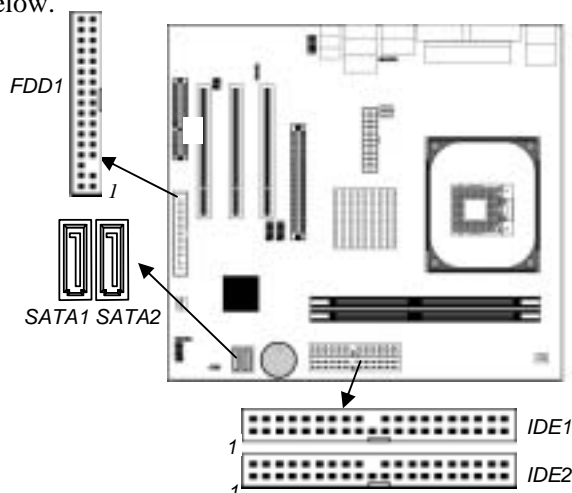
The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

Pin	Signal	Pin	Signal
1	NC	2	KEY
3	Vcc5	4	GND
5	IRTX	6	IRRX

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

Install Other Devices

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



Floppy Disk Drive

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

Install your drives and connect power from the system power supply. Use the cable provided to connect the drives to the floppy disk drive connector **FDD1**.

IDE Devices

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

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

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

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

Serial ATA Devices

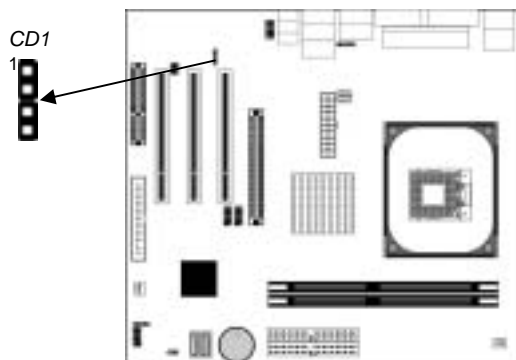
The **Serial ATA (Advanced Technology Attachment)** is the standard interface for the IDE hard drives, which is designed to overcome the design limitations while enabling the storage interface to scale with the growing media rate demands of PC platforms. It provides you a faster transfer rate of **150 MB/s**. If you have installed a Serial ATA hard drive, you can connect the Serial ATA cables to the Serial ATA hard drive or the connector on the motherboard.

On the motherboard, locate the Serial ATA connectors **SATA1/SATA2**, which support new Serial ATA devices for the highest data transfer rates, simpler disk drive cabling and easier PC assembly.

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

Analog Audio Input Header

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.

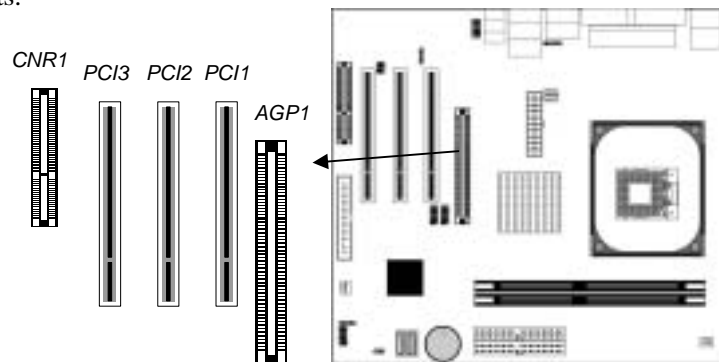


When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the motherboard, locate the 4-pin header **CD1**.

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

Expansion Slots

This motherboard has one AGP, one 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 motherboard.
2. Remove the blanking plate of the slot from the system chassis.
3. Install the edge connector of the expansion card into the slot.
Ensure the edge connector is correctly seated in the slot.
4. Secure the metal bracket of the card to the system chassis with a screw.

8x/4x AGP Slot

You can install a graphics adapter that supports the 8x/4xAGP specification and has a 8x/4x AGP edge connector in the AGP slot.

CNR Slot

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

PCI Slots

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

Chapter 3

BIOS Setup Utility

Introduction

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

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

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

Running the Setup Utility

Every time you start your computer, a message appears on the screen before the operating system loading that prompts you to “Hit 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.

COMS Setup Utility- Copyright (C) 1985-2003, American Megatrends, Inc.

Standard CMOS Setup Advanced Setup Features Setup Power Management Setup PCI / Plug and Play Setup BIOS Security Setup	CPU PnP Setup Hardware Monitor Load Optimal Defaults Save Changes and Exit Discard Changes and Exit
↑ ↓ ← →: 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) Copyright 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. Hold down the **Shift** key and press **F2** to cycle through the Setup Utility’s optional color schemes.

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 **F5** to reset the changes to the original values. Press **F6** to install the setup utility with a set of default values. Press **F7** to install the setup utility with a set of high-performance values.

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	23:40:15	Help Item Use [Enter], [TAB] or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time.
System Date	Sun 05/09/2004	
▶ Primary IDE Master	Hard Disk	
▶ Primary IDE Slave	Not Detected	
▶ Secondary IDE Master	Not Detected	
▶ Secondary IDE Slave	CD/DVD ROM	
Floppy A	1.44 MB 31/2"	
Floppy B	Disabled	
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults		

Date & Time	These items set up system date and time.
IDE Pri Master	These items configure devices connected to the Primary and Secondary IDE channels. To configure an IDE hard disk drive, choose <i>Auto</i> . If the <i>Auto</i> setting fails to find a hard disk drive, set it to <i>User</i> , and then fill in the hard disk characteristics (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting <i>CDROM</i> . If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select <i>Floptical</i> .
Pri Slave	
Sec Master	
Sec Slave	
Floppy A	These items set up size and capacity of the floppy diskette drive(s) installed in the system.
Floppy B	

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	<div>Help Item</div> <div>Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.</div>
1 st Boot Device	PM-Maxtor 6Y060P0	
2 nd Boot Device	SS-MATSHITA CR-58	
3 rd Boot Device	1 ST FLOPPY DRIVE	
Try Other Boot Device	Yes	
Bootup Num-Lock	On	
Boot To OS/2 > 64MB	No	
AGP Aperture Size	64MB	
DRAM Timing	Auto BY SPD	
Hyper Threading Function	Disabled	
Auto Detect DIMM/PCI Clk	Enabled	
Spread Spectrum	Disabled	
<div>↑↔↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit</div> <div>F1: General Help F9: Optimized Defaults</div>		

Quick Boot	If you enable this item, the system starts up more quickly by elimination of some of the power on test routines.
1st 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.
2nd Boot Device	
3rd Boot Device	
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
BootUp Num-Lock	This item determines if the Num Lock key is active or inactive at system start-up time.

Boot To OS/2> 64MB	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.
AGP Aperture Size	This item defines an AGP for the graphics. Leave this item at the default value 64MB.
DRAM Timing	This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.
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	Use this item to set the system bus spread spectrum for the installed processor.

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	<div>Help Item</div> <div>Allows BIOS to Enable or Disable Floppy Controller.</div>
Serial Port1 Address	3F8/IRQ4	
OnBoard IR Port	Disabled	
Parallel Port Address	378	
Parallel Port Mode	ECP	
ECP Mode DMA Channel	DMA3	
Parallel Port IRQ	IRQ7	
OnBoard PCI IDE Controller	Both	
OnBoard SATA-IDE	Enabled	
Audio Device	Enabled	
Modem Device	Auto	
Ethernet Device	Enabled	
OnBoard USB Function	Enabled	
USB Function for DOS	Enabled	
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults		

OnBoard Floppy Controller	Use this item to enable or disable the onboard floppy disk drive interface.
Serial Port1 Address	Use this item to enable or disable the onboard COM1/2 serial port, and to assign a port address.
OnBoard IR Port	Use this item to enable or disable the onboard infrared port, and to assign a port address.
Parallel Port Address	Use this item to enable or disable the onboard Parallel port, and to assign a port address.
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.
OnBoard SATA-IDE	Use this item to enable or disable the onboard IDE channel.
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 motherboard.
USB Function For DOS	Enable this item if you plan to use the USB ports on this motherboard in a DOS environment.

Power Management Setup Page

This page sets some parameters for system power management operation.

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.		
Power Management Setup		
ACPI Aware O/S	Yes	Help Item
Power Management	Enabled	Enable / Disable ACPI support for Operating System. Enable: If OS supports ACPI. Disable: If OS does not support ACPI.
Suspend mode	S1	
Suspend Time Out	Disabled	
Resume On RTC Alarm	Disabled	
LAN/Ring Power On	Disabled	
Keyboard Power On	Disabled	
Wake-Up Key	Any Key	
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults		

ACPI Aware O/S	This item supports ACPI (Advanced Configuration and Power management
-----------------------	--

	Interface). Use this item to enable or disable the ACPI feature.
Power Management	Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Both APM and ACPI are supported.
Suspend mode	This item selects the status S1(Stop Clock) 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.
LAN/Ring Power On	The system can be turned off with a software command. If you enable this item the system can automatically resume if there is an incoming call on the Modem/Ring, or traffic on the network adapter. You must use an ATX power supply in order to use this feature.
Keyboard Power On Wake-Up Key	If you enable this item, 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.

PCI / Plug and Play Setup Page

This page sets up some parameters for devices installed on the PCI bus and devices that use 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
Share Memory Size	32MB	Options PCI AGP
Allocate IRQ to PCI VGA	Yes	
PCI IDE BusMaster	Disabled	
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults		

Primary Graphics Adapter	This item indicates if the primary graphics adapter uses the PCI or the AGP bus. The default PCI setting still lets the onboard display work and allows the use of a second display card installed in an AGP slot.
Share Memory Size	This item lets you allocate a portion of the main memory for the onboard VGA display application with three options of 32/16/8MB.
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	
<u>Security Settings</u>	Help Item
Supervisor Password : Installed Change Supervisor Password Press Enter Password Check <u>Setup</u>	Setup: Check password while invoking setup. Always: Check password while invoking setup as well as on each boot.
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults	

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

CPU PnP Setup Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.		
CPU PnP Setup		
Manufacturer :	Intel	Help Item
Ratio Status :	Locked	
Ratio Actual Value :	14	Options
Ratio CMOS Setting :	14	Auto
DRAM Frequency. :	Auto	CPU-100
CPU Over-clocking Func. :	Disabled	CPU-66
CPU Frequency :	200MHz	CPU-33
		CPU+0
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit F1: General Help F9: Optimized Defaults		

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

Hardware Monitor Page

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

CMOS SETUP UTILITY – Copyright (C) 1985-2003, American Megatrends, Inc.	
Hardware Monitor	
*** System Hardware Monitor***	Help Item
Vcore	:1.280V
Vdimm	:2.576V
Vivdd	:1.520V
Vcc5V	:4.954V
SB3V	:3.184V
VBAT	:3.184V
CPU FAN Speed	:4440 RPM
SYSTEM FAN Speed	:0 RPM
CPU Temperature	:72°C/161°F
SYSTEM Temperature	:32°C/89°F
↑↓↔ : Move Enter: Select +/-: Value F10: Save Esc: Exit	
F1: General Help F9: Optimized Defaults	

CPU/SYSTEM FAN Speed	This item indicates CPU and SYSTEM cooling fan speed in RPM.
CPU/ System Temperature	These items display CPU and System temperature measurement.

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 motherboard package.

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

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

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

Installing Support Software

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



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

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

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

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

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.

- | ORIGINEE LIST - ARMED COUNTRIES | | | |
|--|----------|-------------------------|----------|
| CONSENSUS American Republics, Inc. All Rights Reserved | | | |
| Quick Start | Switched | Speed Spectrum | Switched |
| 1st Best Device | 100% | Auto Demand DDM/PCI CLK | Switched |
| 2nd Best Device | Fluency | | |
| 3rd Best Device | CE-100 | | |
| 1st Other Best Device | Yes | | |
| 1st A.T.T. Top Hard Disk | Disabled | | |
| 2nd Best Device | Disabled | | |
| 3rd Best Device | Disabled | | |
| 4th Best Device | Yes | | |
| 5th Best Device | Yes | | |
| 6th Best Device | Yes | | |
| 7th Best Device | Yes | | |
| 8th Best Device | Yes | | |
| 9th Best Device | Yes | | |
| 10th Best Device | Yes | | |
| 11th Best Device | Yes | | |
| 12th Best Device | Yes | | |
| 13th Best Device | Yes | | |
| 14th Best Device | Yes | | |
| 15th Best Device | Yes | | |
| 16th Best Device | Yes | | |
| 17th Best Device | Yes | | |
| 18th Best Device | Yes | | |
| 19th Best Device | Yes | | |
| 20th Best Device | Yes | | |
| 21st Best Device | Yes | | |
| 22nd Best Device | Yes | | |
| 23rd Best Device | Yes | | |
| 24th Best Device | Yes | | |
| 25th Best Device | Yes | | |
| 26th Best Device | Yes | | |
| 27th Best Device | Yes | | |
| 28th Best Device | Yes | | |
| 29th Best Device | Yes | | |
| 30th Best Device | Yes | | |
| 31st Best Device | Yes | | |
| 32nd Best Device | Yes | | |
| 33rd Best Device | Yes | | |
| 34th Best Device | Yes | | |
| 35th Best Device | Yes | | |
| 36th Best Device | Yes | | |
| 37th Best Device | Yes | | |
| 38th Best Device | Yes | | |
| 39th Best Device | Yes | | |
| 40th Best Device | Yes | | |
| 41st Best Device | Yes | | |
| 42nd Best Device | Yes | | |
| 43rd Best Device | Yes | | |
| 44th Best Device | Yes | | |
| 45th Best Device | Yes | | |
| 46th Best Device | Yes | | |
| 47th Best Device | Yes | | |
| 48th Best Device | Yes | | |
| 49th Best Device | Yes | | |
| 50th Best Device | Yes | | |
| 51st Best Device | Yes | | |
| 52nd Best Device | Yes | | |
| 53rd Best Device | Yes | | |
| 54th Best Device | Yes | | |
| 55th Best Device | Yes | | |
| 56th Best Device | Yes | | |
| 57th Best Device | Yes | | |
| 58th Best Device | Yes | | |
| 59th Best Device | Yes | | |
| 60th Best Device | Yes | | |
| 61st Best Device | Yes | | |
| 62nd Best Device | Yes | | |
| 63rd Best Device | Yes | | |
| 64th Best Device | Yes | | |
| 65th Best Device | Yes | | |
| 66th Best Device | Yes | | |
| 67th Best Device | Yes | | |
| 68th Best Device | Yes | | |
| 69th Best Device | Yes | | |
| 70th Best Device | Yes | | |
| 71st Best Device | Yes | | |
| 72nd Best Device | Yes | | |
| 73rd Best Device | Yes | | |
| 74th Best Device | Yes | | |
| 75th Best Device | Yes | | |
| 76th Best Device | Yes | | |
| 77th Best Device | Yes | | |
| 78th Best Device | Yes | | |
| 79th Best Device | Yes | | |
| 80th Best Device | Yes | | |
| 81st Best Device | Yes | | |
| 82nd Best Device | Yes | | |
| 83rd Best Device | Yes | | |
| 84th Best Device | Yes | | |
| 85th Best Device | Yes | | |
| 86th Best Device | Yes | | |
| 87th Best Device | Yes | | |
| 88th Best Device | Yes | | |
| 89th Best Device | Yes | | |
| 90th Best Device | Yes | | |
| 91st Best Device | Yes | | |
| 92nd Best Device | Yes | | |
| 93rd Best Device | Yes | | |
| 94th Best Device | Yes | | |
| 95th Best Device | Yes | | |
| 96th Best Device | Yes | | |
| 97th Best Device | Yes | | |
| 98th Best Device | Yes | | |
| 99th Best Device | Yes | | |
| 100th Best Device | Yes | | |

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- The screenshot shows a Windows XP desktop with two windows open. The 'Device Manager' window on the left has 'Ports (COM & LPT)' expanded, showing 'COM1' selected. The 'Windows Task Manager' window on the right shows the 'Performance' tab with 'CPU Usage' at 0% and 'Physical Memory (RAM)' at 265588 KB. The taskbar at the bottom shows the Start button and icons for 'Device Manager' and 'Windows Task Manager'.

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