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MS8177C Series, V1.1  
KT600/October 2003**

## Table of Contents

<b>Trademark .....</b>	<b>I</b>
Static Electricity Precautions .....	III
Pre-Installation Inspection.....	III
<b>Chapter 1: Introduction.....</b>	<b>1</b>
Key Features.....	2
Package Contents .....	5
<b>Chapter 2: Mainboard Installation.....</b>	<b>6</b>
Mainboard Components.....	7
I/O Ports.....	7
Installing the Processor.....	8
Installing Memory Modules .....	9
Jumper Settings .....	10
Install the Mainboard.....	11
Connecting Optional Devices.....	12
Install Other Devices.....	14
Expansion Slots .....	16
<b>Chapter 3: BIOS Setup Utility.....</b>	<b>17</b>
Introduction .....	17
Running the Setup Utility.....	18
Standard CMOS Setup Page.....	19
Advanced Setup Page .....	20
Power Management Setup Page .....	22
PCI/Plug and Play Setup Page.....	24
Load Optimal Settings .....	24
Load Best Performance Settings .....	25
Features Setup Page .....	25
CPU PnP Setup Page .....	26
Hardware Monitor Page.....	27
Change Password.....	28
Exit .....	28
<b>Chapter 4: Software &amp; Applications .....</b>	<b>29</b>
About the Software & CD-ROM.....	29
Utility Software Reference.....	30

## 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 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. Just click the "Continue Anyway" button and go ahead the installation.



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

## Chapter 1

### Introduction

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This mainboard has a **Socket-A** support for the **AMD K7** processors. The Socket-A processor's front-side bus speed is **400 MHz**.

This mainboard has the **VIA KT600** Northbridge and **VT8237** Southbridge chipsets that provide the support for **Serial ATA** devices, which is a new interface for high-performance and mainstream desktop PCs, at a bandwidth of **150MB/s** per port. It supports the **AC 97 audio codec**, the **Ultra DMA 133/100/66/33** function, and the built-in **USB 2.0** providing higher bandwidth. It implements **Universal Serial Bus Specification Revision 2.0** and is compliant with **UHCI 1.1** and **EHCI 0.95**.

This mainboard has five 32-bit **PCI** slots, one **8xAGP** slot, one **CNR** (Communications and Networking Riser) slot, and an onboard **10BaseT/100BaseTX Network** interface (optional). In addition, this mainboard has a full set of I/O ports including two **PS/2** ports for mouse and keyboard, one serial port, one parallel port and maximum eight **USB2.0** ports— four back-panel ports and onboard USB connectors **USB2/3** providing two extra ports by connecting the Extended USB Module to the mainboard.

This mainboard is an **ATX size** mainboard and has power connectors for an ATX power supply.

## Key Features

This mainboard has these key features:

### Socket-A Processor Support

- ◆ Supports AMD **Athlon XP/Athlon/Duron** processors
- ◆ Supports **400 MHz** Front-Side Bus

### Chipset

There are **VIA KT600 Northbridge** and **VT8237 Southbridge** in this chipset in accordance with an innovative and scalable architecture with proven reliability and performance. A few of the chipset's advanced features are:

- ◆ Supports full range of AMD Athlon™ XP processors, DDR400 SDRAM and AGP8x
- ◆ Support for 8X V-Link 533MB/s high bandwidth North/South Bridge interconnect
- ◆ Serial ATA support for up to 4 devices
- ◆ Integrated MC' 97 Modem and integrated 10/100 Fast Ethernet MAC
- ◆ Advanced power management capabilities including ACPI/OnNow

### Memory Support

- ◆ The mainboard accommodates 2 DDR 184 pin, 2.5V DIMM sockets with a total capacity of 2 GB system memory.
- ◆ Supports DDR **400MHz** memory bus

### AC' 97 Audio Codec

- ◆ Compliant with AC' 97 2.2 specification
- ◆ Three Audio Jacks– Line-Out, Line-In and Microphone-In
- ◆ Sound Blaster, Sound Blaster Pro Compatible
- ◆ Digital I/O compatible with consumer mode S/PDIF
- ◆ Advanced power management support

## **Expansion Options**

The mainboard comes with the following expansion options:

- ◆ Five 32-bit PCI slots
- ◆ One 8xAGP slot
- ◆ One CNR (Communications and Networking Riser) 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 **133/100/66/33** 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 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
- ◆ Eight USB2.0 ports (four back-panel ports, onboard USB connectors providing four extra ports)
- ◆ Audio jacks for microphone, line-in and line-out

## **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.

### **Built-in Ethernet LAN (optional)**

- ◆ **100Base-TX/10Base-T Physical Layer Solution**
- ◆ Dual Speed – 100/10 Mbps
- ◆ MII Interface to Ethernet Controller/Configuration & Status
- ◆ Auto Negotiation: 10/100, Full/Half Duplex
- ◆ Meet All Applicable IEEE802.3, 10Base-T and 100Base-TX Standards

### **USB 2.0**

- ◆ Compliant with Universal Serial Bus Specification Revision 2.0
- ◆ Compliant with Intel' s Enhanced Host Controller Interface Specification Revision 0.95
- ◆ Compliant with Universal Host Controller Interface Specification Revision 1.1
- ◆ PCI multi-function device consists of two **UHCI Host Controller** cores for full-/low-speed signaling and one **EHCI Host Controller** core for high-speed signaling
- ◆ Root hub consists 4 downstream facing ports with integrated physical layer transceivers shared by **UHCI** and **EHCI** Host Controller
- ◆ Support PCI-Bus Power Management Interface Specification release 1.1
- ◆ Legacy support for all downstream facing ports

### **Bundled Software**

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

### **Dimensions**

- ◆ ATX form factor of 305 x 190 mm

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

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## 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.

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

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**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.**

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## Chapter 2

### Mainboard Installation

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

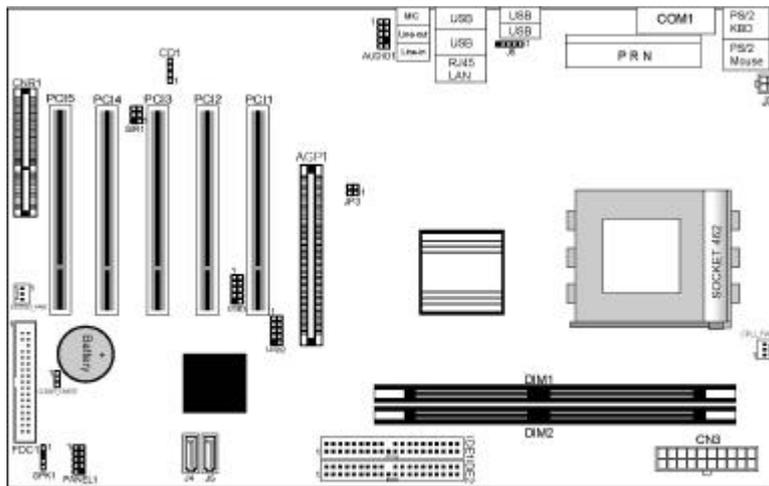
- Identify the mainboard components
- Install a CPU
- Install one or more system memory modules
- Make sure all jumpers and switches are set correctly
- Install this mainboard in a system chassis (case)
- Connect any extension brackets or cables to connectors on the mainboard
- Install peripheral devices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

**Note:**

1. Before installing this mainboard, make sure jumper CLEAR\_CMOS1 is under Normal setting. See this chapter for information about locating CLEAR\_CMOS1 and the setting options.
2. Never connect power to the system during installation; otherwise, it may damage the mainboard.

## Mainboard Components

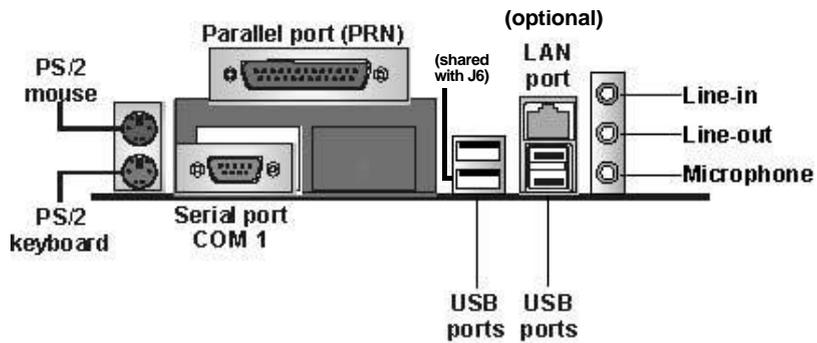
Identify major components on the mainboard via this diagram underneath.



**Note:** Those jumpers of mainboard not appearing in this illustration are for testing only.

## I/O Ports

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



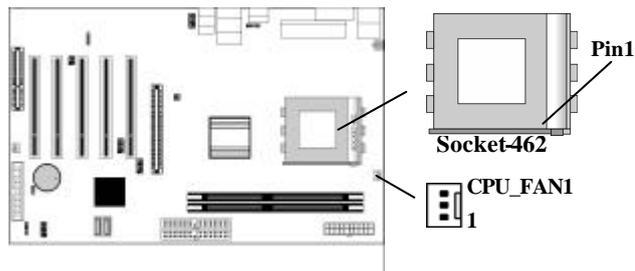
<b>PS/2 Mouse</b>	Use the upper PS/2 port to connect a PS/2 pointing device.
<b>PS/2 Keyboard</b>	Use the lower PS/2 port to connect a PS/2 keyboard.
<b>Parallel Port (PRN)</b>	Use the Parallel port to connect printers or other parallel communications devices.
<b>COM1</b>	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1.
<b>LAN Port (optional)</b>	Connect an RJ-45 jack to the LAN port to connect your computer to the Network.
<b>USB Ports</b>	Use the USB ports to connect USB devices. <i>Note: The lower USB port located near the Parallel port is shared with the J6 connector.</i>
<b>Audio Ports</b>	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 462 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

### CPU Installation Procedure

Follow these instructions to install the CPU:



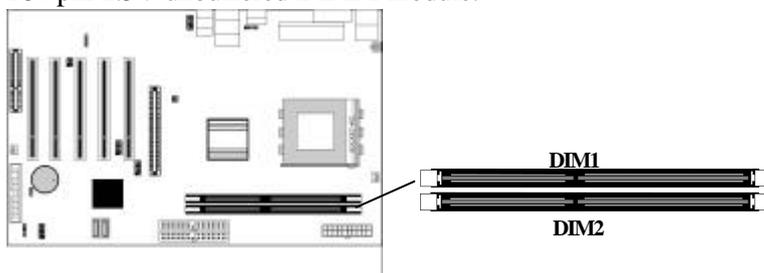
1. Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.
2. Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.
3. Push the locking lever down and hook it under the latch on the edge of socket.
4. Apply thermal grease to the top of the CPU.
5. Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6. Plug the CPU fan power cable into the CPU fan connector (CPU\_FAN1) on the mainboard.

## Installing Memory Modules

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

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

DDR SDRAM provides 1.6 GB/s or 2.1 GB/s data transfer rate when the bus is 100 MHz or 133 MHz, respectively. DDR SDRAM uses additional power and ground lines and requires 184-pin 2.5V unbuffered DIMM module.



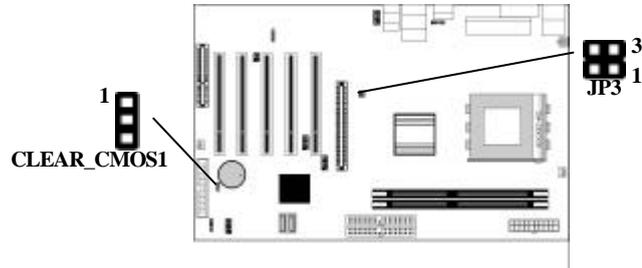
## Memory Module Installation Procedure

These modules can be installed with up to 2 GB system memory. Following these steps 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

Using a jumper cap to connect two pins is **SHORT**, removing it from these pins, **OPEN**.



### **CLEAR\_CMOS1: Clear CMOS Jumper**

This jumper is to clear the contents of CMOS memory. You may need to clear the CMOS memory if the settings in the Setup Utility are incorrect that prevents 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
Normal	Short Pins 1-2
Clear CMOS	Short Pins 2-3

### JP3: CPU Frequency Selector

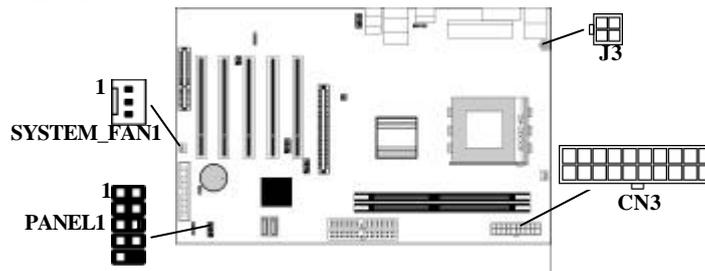
Use this jumper to select the CPU frequency.

Frequency	Pins 1-2	Pins 3-4
200 MHz	ON	ON
100 MHz	ON	OFF
166 MHz	OFF	ON
133 MHz	OFF	OFF

### Install the Mainboard

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



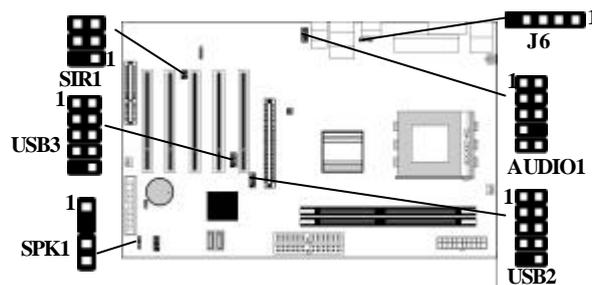
Connect the power connector from the power supply to the **CN3** connector on the mainboard. **J3** is the CPU Vcore power connector. If there is a cooling fan installed in the system chassis, connect the cable from the cooling fan to the **SYSTEM\_FAN1** fan power connector on the mainboard.

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

## Connecting Optional Devices

Refer to the following for information on connecting 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	+5V	2	NC
3	GND	4	SPKR

### AUDIO1: Front Panel Audio Connector

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

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

### USB2/3: 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/USB3 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 USB2/3 connector on the mainboard.
2. Plug the bracket cable onto the USB2/3 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.

#### **J6: 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	Pin	Signal
1	STANDBY 5V	2	USB-
3	USB+	4	GND
5	KEY		

---

**!** The J6 is shared with the lower USB port located near the Parallel port of the I/O back panel. Please see “I/O Ports” for more information.

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

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#### **SIR1: Infrared Port**

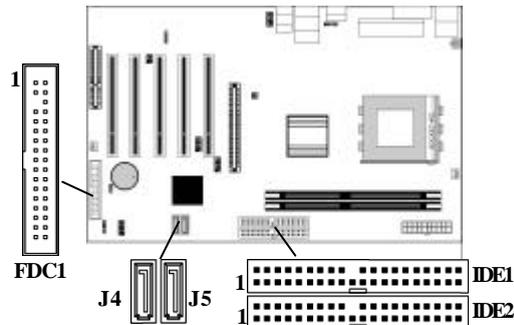
The infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

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

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

## Install Other Devices

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



### 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 **FDC1**.

### IDE Devices

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

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

Install the device(s) and connect power from the system power supply. Use the cable provided to connect the device(s) to the Primary IDE channel connector **IDE1** on the mainboard. If you want to install more IDE devices, you can purchase a second IDE cable and connect one or two devices to the Secondary IDE channel connector **IDE2** on the mainboard. If you have two devices on the cable, one must be Master and one must be Slave.

### Serial ATA Devices

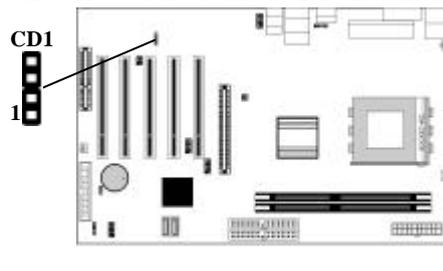
The **Serial ATA (Advanced Technology Attachment)** is the standard interface for the IDE hard drives, which is designed to overcome the design limitations while enabling the storage interface to scale with the growing media rate demands of PC platforms. It provides you a faster transfer rate of **150 Mbytes/second**. 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 mainboard.

On the mainboard, locate the Serial ATA connectors **J4/J5**, 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.

### 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.



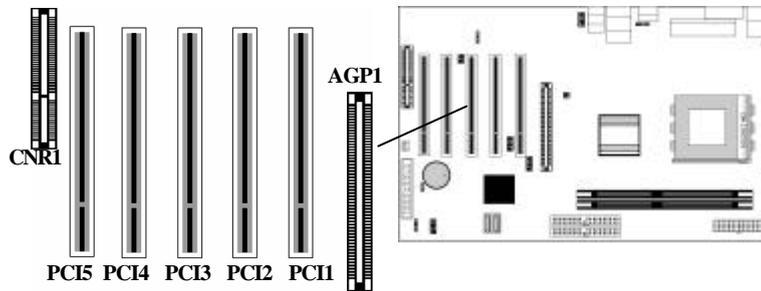
When you first start up your system, the BIOS should automatically detect your CD-ROM/DVD drive. If it doesn't, enter the Setup Utility and configure the CD-ROM/DVD drive that you have installed. On the mainboard, locate the 4-pin connector **CD1**.

### CD1

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

## Expansion Slots

This mainboard has one AGP, one CNR and five 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 an 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

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### 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 those 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.

AMIBIOS SIMPLE SETUP UTILITY – VERSION 1.21.13  
(C) 2000 American Megatrends, Inc. All Rights Reserved

Standard CMOS Setup	Features Setup
Advanced Setup	CPU PnP Setup
Power Management Setup	Hardware Monitor
PCI / Plug and Play Setup	Change Password
Load Optimal Settings	Exit
Load Best Performance Settings	
Esc : Quit    -    →    Ⓜ: Select Item    (Shift)F2 : Change Color    F5 : Old Values	
F6 : Optimal values                      F7 : Best performance values    F10 : Save&Exit	
Standards COMOS setup for changing time, date, hard disk type, etc.	

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 helps you set up basic information such as the date and time, the IDE devices, and the diskette drives.

AMBIOS SETUP – STANDARD CMOS SETUP										
(C) 2000 American Megatrends, Inc. All Rights Reserved										
Date (mm/dd/yy) : Wed Oct 08, 2003										
Time (hh/mm/ss) : 11:19:55										
	Type	Size	Cyln	Head	WPcom	Sec	LBA Mode	Bk Mode	PIO Mode	32Bit Mode
Pri Master	: Auto									On
Pri Slave	: Auto									On
Sec Master	: Auto									On
Sec Slave	: Auto									On
Floppy Drive A : 1.44 MB 31/2										
Floppy Drive B : Not Installed										
Month : Jan – Dec							ESC : Exit			
Day : 01 – 31							↑↓ : Select Item			
Year : 1901 – 2099							PU/PD/+/- : Modify			
							(Shift)F2 : Color			
							F3 : Detect All HDD			

<b>Date &amp; Time</b>	Use these items to set up system date and time
<b>IDE Pri Master</b>	Use these items to 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 ( <i>Size</i> , <i>Cyls</i> , 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> .
<b>Pri Slave</b>	
<b>Sec Master</b>	
<b>Sec Slave</b>	
<b>Floppy Drive A</b>	Use these items to set up size and capacity of the floppy diskette drive(s) installed in the system.
<b>Floppy Drive B</b>	

## Advanced Setup Page

This page sets up more advanced information about your system. Be more careful to this page. Any changes can affect the operation of your computer.

AMIBIOS SETUP – ADVANCED SETUP	
(C) 2000 American Megatrends, Inc. All Rights Reserved	
Quick Boot	Enabled
1 <sup>st</sup> Boot Device	IDE-0
2 <sup>nd</sup> Boot Device	Floppy
3 <sup>rd</sup> Boot Device	CD/DVD-0
Try Other Boot Devices	Yes
S.M.A.R.T. for Hard Disks	Disabled
BootUp Num-Lock	On
Floppy Drive Swap	Disabled
Floppy Drive Seek	Disabled
Password Check	Setup
Boot To OS/2	No
L2 Cache	Enabled
System BIOS Cacheable	Enabled
Graphic Win Size	64MB
SDRAM Timing by SPD	Enables
SDRAM CAS# Latency	2.5
SDRAM Bank Interleave	2-Way
Auto detect DIMM/PCI Clk	Enabled
Spread Spectrum	Disabled
ESC : Quit      - - -> ® : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

<b>Quick Boot</b>	If you enable this item, the system starts up more quickly by elimination of some of the power on test routines.
<b>1<sup>st</sup> Boot Device</b>	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
<b>2<sup>nd</sup> Boot Device</b>	
<b>3<sup>rd</sup> Boot Device</b>	
<b>Try Other Boot Device</b>	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.
<b>S.M.A.R.T. for Hard Disks</b>	Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.

<b>BootUp Num-Lock</b>	This item determines if the Num Lock key is active or inactive at system start-up time.
<b>Floppy Drive Swap</b>	If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.
<b>Floppy Drive Seek</b>	If you enable this item, your system will check all floppy disk drives at start up. Disable this item unless you are using an old 360KB drive.
<b>Password Check</b>	If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility ( <i>Setup</i> ) or required both at start-up and to enter the Setup Utility ( <i>Always</i> ).
<b>Boot to OS/2 &gt; 64MB</b>	Enable this item if you are booting the OS/2 operating system and you have more than 64MB of system memory installed.
<b>L2 Cache</b>	Leave these items enabled since all the processors that can be installed on this board have internal L2 cache memory.
<b>System BIOS Cacheable</b>	If you enable this item, a segment of the system BIOS will be copied to main memory for faster execution.
<b>Graphic Win Size</b>	This item defines the size of aperture if you use a graphic adapter.
<b>SDRAM Timing By SPD</b>	This item allows you to enable or disable the SDRAM timing defined by the Serial Presence Detect electrical.
<b>SDRAM CAS# Latency</b>	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.

<b>SDRAM Bank Interleave</b>	Enable this item to increase SDRAM memory speed. When enabled, separate memory banks are set for odd and even addresses and the next byte of memory can be accessed while the current byte is being refreshed.
<b>Auto detect DIMM/PCI Clock</b>	When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.
<b>Spread Spectrum</b>	If you enable spread spectrum, it can significantly reduce the EMI(Electro-Magnetic Interference) generated by the system.

## Power Management Setup Page

This page sets up some parameters of system power management operation.

AMIBIOS SETUP – POWER MANAGEMENT SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved		
ACPI Aware O/S	Yes	
Power Management	Enabled	
Suspend Time Out <Min.>	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	
LAN/Ring Power On	Disabled	ESC : Quit      - → ® : Select Item
Keyboard Power On	Disabled	F1 : Help      PU/PD/+/- : Modify
Wake-Up Key	Any key	F5 : Old Values (Shift)F2 : Color
Wake-Up Password	N/A	F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

<b>ACPI Aware O/S</b>	This item supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.
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<b>Power Management</b>	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.
<b>Suspend Time Out</b>	This sets the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.
<b>Resume On RTC Alarm / Date / Hour / Minute / Second</b>	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.
<b>LAN/Ring Power On</b>	The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.
<b>Keyboard Power On Wake-Up Key Wake-Up Password</b>	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 those utilizing the system plug and play capability.

AMBIOS SETUP – PCI / PLUG AND PLAY SETUP (C) 2000 American Megatrends, Inc. All Rights Reserved	
Primary Graphics Adapter	AGP
Allocate IRQ to PCI VGA	Yes
PCI IDE BusMaster	Disabled
ESC : Quit      ← → : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

<b>Primary Graphics Adapter</b>	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.
<b>Allocate IRQ to PCI VGA</b>	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.
<b>PCI IDE BusMaster</b>	This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

## Load Optimal Settings

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

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

## Load Best Performance Settings

If you select this item and press **Enter** a dialog box appears. If you press **Y**, and then **Enter**, the Setup Utility loads a set of best-performance default values. These default values are quite demanding and your system might not function properly if you are using slower memory chips or other low-performance components.

## Features Setup Page

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

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

<b>OnBoard FDC</b>	Use this item to enable or disable the onboard floppy disk drive interface.
<b>OnBoard Serial PortA</b>	Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.
<b>OnBoard IR Port</b>	Use this item to enable or disable the onboard infrared port, and to assign a port address.
<b>Parallel Port Mode</b>	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.

<b>Parallel Port IRQ</b>	Use this item to assign IRQ to the parallel port.
<b>Parallel Port DMA</b>	Use this item to assign a DMA channel to the parallel port.
<b>OnBoard SATA IDE</b>	Use this item to enable or disable the onboard SATA IDE channel.
<b>Audio Device</b>	This item enables or disables the AC' 97 audio chip.
<b>Modem Device</b>	This item enables or disables the MC' 97 modem chip.
<b>Ethernet Device</b>	This item enables or disables the onboard Ethernet LAN.
<b>USB Controller</b>	Use this item to select the USB ports or disabled.
<b>USB Function for DOS</b>	Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.
<b>ThumbDrive for DOS</b>	Enable this item to make a small portion of memory storage device for the USB ports.

## CPU PnP Setup Page

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

AMIBIOS SETUP – CPU PnP SETUP	
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CPU Over-clocking Func.	Disabled
CPU Frequency	166 MHz
CPU Over-Clocking Freq.	N/A
DRAM Frequency	Auto
ESC : Quit      ← → : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load Optimal values F7 : Load Best performance values	

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

## Hardware Monitor Page

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

AMIBIOS SETUP – HARDWARE MONITOR (C) 2000 American Megatrends, Inc. All Rights Reserved		
*** System Hardware ***		
Vcore	4.080V	ESC : Quit      ← → : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
Vdimm	4.080V	
Vivdd	4.080V	
Vcc 5V	6.854V	
SB3V	4.080V	
SYSTEM Fan Speed	0 RPM	
CPU Fan Speed	0 RPM	
Power Temperature	33°C/91°F	
SYSTEM Temperature	39°C/102°F	
CPU Temperature	62°C/143°F	

<b>CPU / System Temperature</b>	These items display CPU and system temperature measurement.
<b>FANs &amp; Voltage Measurements</b>	These items indicate cooling fan speeds in RPM and the various system voltage measurements.

## Change Password

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

## Exit

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

## Chapter 4

### About the Software & CD-ROM

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

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

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

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## Utility Software Reference

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All the utility software available on the CD-ROM is Windows compliant. It is provided only for the convenience of customers. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

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**Note:** The software in these folders is subject to change at anytime without prior notice. Please refer to the support CD for available software.

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### **AMI Flash Memory Utility**

This utility enables you to erase the system BIOS stored on a Flash Memory chip on the main board, and lets you copy an updated version of the BIOS to the chip. Proceed with caution when using this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction. Refer to Chapter 3, Using BIOS for more information.

### **PC-CILLIN 2002**

The PC-CILLIN software program provides anti-virus protection for your system. This program is available for Windows XP/2000/ME/98SE and Windows NT. Be sure to check the readme.txt and install the appropriate anti-virus software for your operating system.

We strongly recommend users to install this free anti-virus software to help protect your system against viruses.

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**Note:** Update your virus software regularly to protect against new viruses.

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