



845GV-M

# User Manual

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- (2) this device must accept any interference received, including interference that may cause undesired operation.

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# Chapter 1 Introduction

## 1.1 Package Contents

Motherboard (Micro ATX Form Factor: 9.6-in x 8.2-in, 24.4 cm x 20.8 cm)

1 Quick Installation Guide

1 Support CD

1 IDE Drive Ribbon Cable (1 x ATA 66/100)

1 Floppy Drive Ribbon Cable

1 I/O Shield

1 COM Port Bracket

1 MR Card (Optional)

## 1.2 Specifications

<b>Platform:</b>	Micro ATX Form Factor: 9.6-in x 8.2-in, 24.4 cm x 20.8 cm
<b>CPU:</b>	Socket 478, supports Intel® Pentium® 4 (Prescott, Northwood, Willamette) / Celeron® processor
<b>Chipsets:</b>	North Bridge: Intel® 845GV chipsets, FSB @ 533/400 MHz, supports Hyper-Threading Technology (see <b>CAUTION 1</b> ) South Bridge: Intel® ICH4
<b>VGA:</b>	Intel® Extreme Graphics, Max. 64MB VRAM
<b>Memory:</b>	2 DDR DIMM slots: DDR1 and DDR2 supports PC2700 (DDR333) / PC2100 (DDR266), Max. 2GB (see <b>CAUTION 2</b> )
<b>IDE:</b>	IDE1: ATA 100 / Ultra DMA Mode 5 IDE2: ATA 100 / Ultra DMA Mode 5 Supports up to 4 IDE devices
<b>Floppy Port:</b>	Supports up to 2 floppy disk drives
<b>Audio:</b>	5.1 channels AC'97 Audio
<b>PCI LAN:</b>	Speed: 802.3u (10/100 Ethernet), supports Wake-On-LAN
<b>Hardware Monitor:</b>	CPU temperature sensing, Chassis temperature sensing CPU overheat shutdown to protect CPU life (see <b>CAUTION 3</b> ) CPU fan tachometer, Chassis fan tachometer Voltage monitoring: +12V, +5V, +3V, Vcore
<b>PCI slots:</b>	3 slots with PCI Specification 2.2 (see <b>CAUTION 4</b> )
<b>AGI 8X slot:</b>	1 AGI 8X slot (see <b>CAUTION 5</b> )
<b>AMR slot:</b>	1 slot, supports MR card (Optional)

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<b>USB 2.0:</b>	6 USB 2.0 ports: includes 4 default USB 2.0 ports on the rear panel, plus one header to support 2 additional USB 2.0 ports (see <b>CAUTION 6</b> )
<b>I/O Panel</b>	PS/2: keyboard / mouse RJ 45 4 default USB 2.0 ports 1 VGA port 1 serial port: COM1; 1 parallel port: ECP/EPP support Audio Jack: Line Out / Line In / Microphone
<b>BIOS:</b>	AMI legal BIOS Supports "Plug and Play" ACPI 1.1 compliance wake up events Supports jumperfree SMBIOS 2.3.1 support CPU frequency stepless control (only for advanced users' reference, see <b>CAUTION 7</b> )
<b>OS:</b>	Microsoft® Windows® 98SE / ME / 2000 / XP compliant

## CAUTION!

1. About the setting of "Hyper Threading Technology", please check page 23.
2. Please check the table below for the memory support frequency and its corresponding CPU FSB frequency.

CPU FSB Frequency	Memory Support Frequency
533	DDR266, DDR333
400	DDR266

3. While CPU overheat is detected, the system will automatically shutdown. Please check if the CPU fan on the motherboard functions properly before you resume the system. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
4. Because the installed AMR card will occupy the same external connecting position with the PCI card installed in "PCI3" slot, you will not be able to install any PCI card in "PCI3" slot if an AMR card has already been installed in the AMR slot.
5. The AGI 8X slot is a special design that only supports compatible AGP VGA cards. For the information of the compatible AGP VGA cards, please refer to the "Supported AGP VGA Cards List" on page 7/8. For the proper installation of AGP VGA card, please refer to the installation guide on page 14.
6. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1/2000 SP4. It may not work properly under Microsoft® Windows® 98/ME. Please refer to Microsoft® official document at <http://www.microsoft.com/whdc/hwdev/bus/USB/USB2support.msp>
7. Although this motherboard offers stepless control, it is not recommended to perform over clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.

### 1.3 Supported AGP VGA Cards List

(for Windows 2000/Windows XP)

#### I. AGP 4X

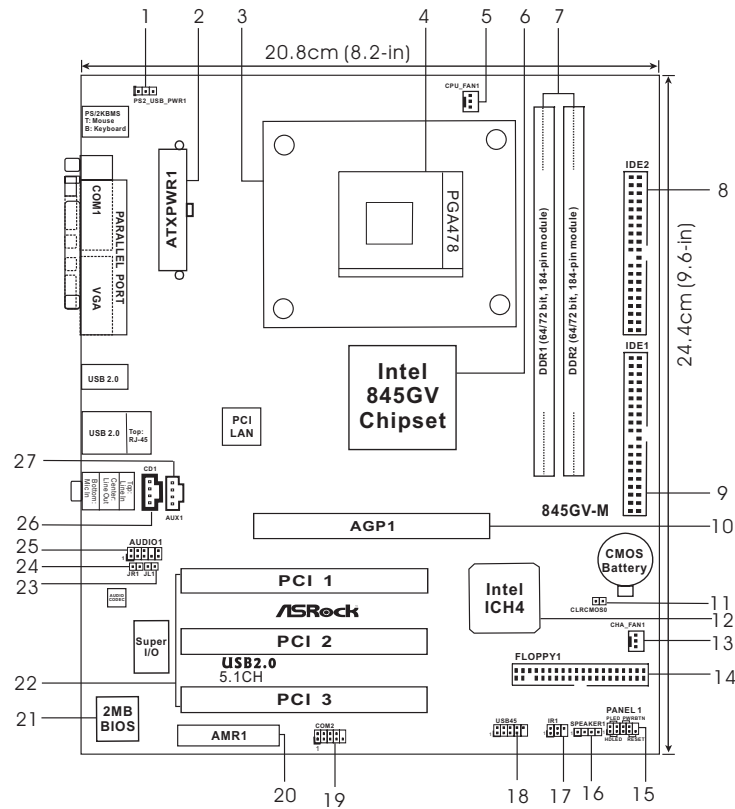
Graphics Chip Vendor	Model Name
n-VIDIA	ASUS AGP-V7100 ASUS AGP-V7100PRO ASUS AGP-V7100 MAGIC / 32M ASUS AGP-V7700Ti ASUS AGP-V8170DDR ASUS AGP-V8170SE / LP ASUS AGP-V8200 T2 ASUS AGP-V8200 T5 ASUS AGP-V8440 ASUS AGP-V8460 Ultra GAINWARD- GF3-Ti500/64M GAINWARD- GF3-Ti500/128M Inno3D GeForce2 MX400 Leadtek WinFast A170 TH Leadtek WinFast A170 DDR Leadtek WinFast A250LE TD Leadtek WinFast GeForce2 MX MX64 Leadtek WinFast GeForce2 H MX400 MSI- GF4-MX440SE PROLINK GF4-MX440 SPARKLE GF4-MX440
ATI	Gigabyte GV-AP64D Gigabyte GV-AP64D-H Gigabyte GV-AR64S-H POWERCOLOR RADEON 9000 POWERCOLOR RADEON 9100 TRANSCEND TS64MVDR7
SiS	SYNNEX GCM-SiS315EA32

## II. AGP 8X

Graphics Chip Vendor	Model Name
n-VIDIA	ALBATRON GF4-MX440 64M AOPEN Aeolus FX5600S-DV128 AOPEN Aeolus FX5200-V128 ASUS AGP-V9180 ASUS AGP-V9280 VIEDO SUITE ASUS AGP-V9520 MAGIC/T ASUS V9900 ASUS V9900 ULTRA ELSA-GLADIC 518 ELSA-GLADIC 518 P Inno3D GeForce FX5600 LEADTEK A280 LE LEADTEK A340TDH MSI Ti4800SE-VTD8X PALIT GF4 MX440 8X 64MB PROLINK GeForceFX5900 PROLINK GF4-Ti4200 SPARKLE GF4-MX440-8X
ATI	CLUB3D ATI R9800 Gigabyte GV R9000 PRO Gigabyte RADEON 9500 Gigabyte RADEON 9700 PRO POWER COLOR 9200 SAPHIRE RADEON 9200-128MB
SiS	POWER COLOR XABRE600

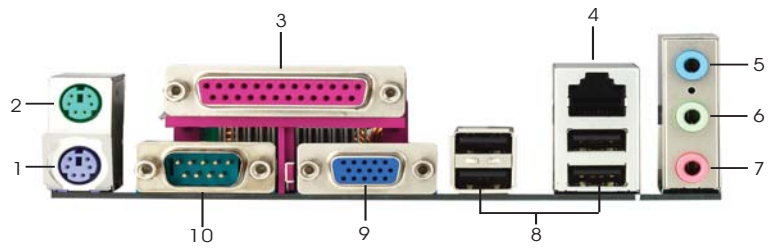


## 1.4 Motherboard Layout



- |    |                                       |    |  |
|----|---------------------------------------|----|--|
| 1  | PS2_USB_PWR1 Jumper                   | 15 | System Panel Header (PANEL1)           |
| 2  | ATX Power Header (ATXPWR1)            | 16 | Chassis Speaker Header (SPEAKER1)      |
| 3  | CPU Heatsink Retention Module         | 17 | Infrared Module Header (IR1)           |
| 4  | CPU Socket                            | 18 | USB 2.0 Header (USB45, Blue)           |
| 5  | CPU Fan Connector (CPU_FAN1)          | 19 | COM Port Header (COM2)                 |
| 6  | North Bridge Controller               | 20 | AMR Slot (AMR1)                        |
| 7  | 184-pin DDR DIMM Slots (DDR DIMM1- 2) | 21 | BIOS FWH Chip                          |
| 8  | Secondary IDE Connector (IDE2, Black) | 22 | PCI Slots (PCI 1- 3)                   |
| 9  | Primary IDE Connector (IDE1, Blue)    | 23 | JL1 Jumper                             |
| 10 | AGI8X Slot (AGP1)                     | 24 | JR1 Jumper                             |
| 11 | Clear CMOS (CLRCMOS0, 2-pin jumper)   | 25 | Front Panel Audio Header (AUDIO1)      |
| 12 | South Bridge Controller               | 26 | Internal Audio Connector: CD1 (Black)  |
| 13 | Chassis Fan Connector (CHA_FAN1)      | 27 | Internal Audio Connector: AUX1 (White) |
| 14 | Floppy Connector (FLOPPY1)            |    |  |

## 1.5 I/O Panel



- |                               |                       |
|-------------------------------|-----------------------|
| 1 PS/2 keyboard port (Purple) | 6 Line Out (Lime)     |
| 2 PS/2 mouse port (Green)     | 7 Microphone (Pink)   |
| 3 Parallel port               | 8 USB 2.0 ports       |
| 4 RJ-45 port                  | 9 VGA port            |
| 5 Line In (Light Blue)        | 10 Serial port (COM1) |

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## Chapter 2 Installation

This Motherboard is a Micro ATX form factor (9.6-in x 8.2-in, 24.4 cm x 20.8 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

### Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.



Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

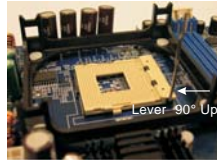
## 2.1 CPU Installation

- Step 1. Unlock the socket by lifting the lever up to a 90° angle.
- Step 2. Position the CPU directly above the socket such that its marked corner matches the base of the socket lever.
- Step 3. Carefully insert the CPU into the socket until it fits in place.

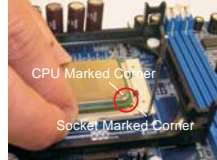


The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

- Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



STEP 1:  
Lift Up The Socket Lever



STEP 2/STEP 3:  
Match The CPU Marked Corner  
to The Socket Marked Corner



STEP 4:  
Push Down And Lock  
The Socket Lever

## 2.2 Installation of CPU Fan and Heatsink

Intel® Pentium®4 CPU requires larger heatsink and cooling fan. Thermal grease between the CPU and the heatsink is also needed to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU\_FAN connector (CPU\_FAN1, see page 9, No. 5). For proper installation, please kindly refer to the instruction manuals of the CPU fan and heatsink vendors.

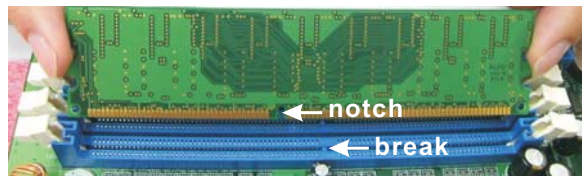
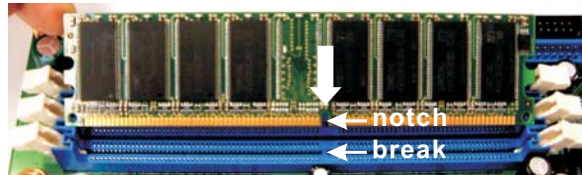
## 2.3 Installation of Memory Modules (DIMM)

This motherboard provides two 184-pin DDR (Double Data Rate) DIMM slots.



Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

- Step 1. Unlock a DIMM slot by pressing the retaining clips outward.
- Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

- Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

## 2.4 Expansion Slots (PCI, AMR, and AGI 8X Slots)

There are 3 PCI slots, 1 AMR slot, and 1 AGI 8X slot on this motherboard.

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



Because the installed AMR card will occupy the same external connecting position with the PCI card installed in "PCI3" slot, you will not be able to install any PCI card in "PCI3" slot if an AMR card has already been installed in the AMR slot.

**AMR slot:** AMR slot is used to insert a MR card (optional) with v.92 Modem functionality.

**AGI slot:** The AGI 8X slot is a special design that only supports compatible AGP VGA cards. For the information of the compatible AGP VGA cards, please refer to the "Supported AGP VGA Cards List" on page 7/8.



To install the system with an add-on AGP VGA card, you must make sure to install the driver of add-on AGP VGA card before you install the onboard VGA driver. If the onboard VGA driver has already been installed before you install the add-on AGP VGA card, the system will automatically set the onboard VGA as the primary graphics adapter. In that case, if you want to install the add-on AGP VGA card, you need to remove the onboard VGA driver first, and then install the add-on AGP VGA card and its driver. For the detailed instruction, please refer to the documents in the Support CD, "AGI Slot Installation Guide (for Windows 2000)" and "AGI Slot Installation Guide (for Windows XP)", which are located in the folder at the following path:

..\ Easy Dual Monitor

### Installing an expansion card

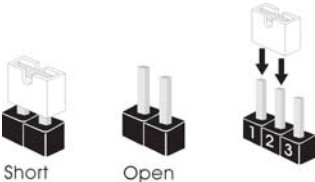
- Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.
- Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).
- Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.
- Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
- Step 5. Fasten the card to the chassis with screws.
- Step 6. Replace the system cover.


## 2.5 Easy Dual Monitor Feature

Thanks for choosing AGI 8X Technology, this motherboard supports Easy Dual Monitor upgrade. With the internal onboard VGA and the external add-on AGP VGA card, you can easily enjoy the benefits of Dual Monitor feature. For the detailed instruction, please refer to the document at the following path in the Support CD: ..\ **Easy Dual Monitor**

## 2.6 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “SHORT”. If no jumper cap is placed on pins, the jumper is “OPEN”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “SHORT” when jumper cap is placed on these 2 pins.




Jumper	Setting	Description
PS2_USB_PWR1 (see p.9, No. 1)		Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

JR1(see p.9, No. 24)	
JL1(see p.9, No. 23)	JR1 JL1

Note: If the jumpers JL1 and JR1 are short (see the figure above), both the front panel and the rear panel audio connectors can work.

Clear CMOS (CLRCMOS0, 2-pin Jumper) (see p.9, No. 11)	
	2-pin Jumper

Note: CLRCMOS0 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then use a jumper cap to short the pins on CLRCMOS0 for 3 seconds. Please remember to remove the jumper cap after clearing the CMOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.

## 2.7 Onboard Headers and Connectors



Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

Connector	Figure	Description
FDD Connector (33-pin FLOPPY1) (see p.9, No. 14)		

Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector.

Primary IDE Connector (Blue) (39-pin IDE1, see p.9, No. 9)	Secondary IDE Connector (Black) (39-pin IDE2, see p.9, No. 8)
connect the blue end to the motherboard	connect the black end to the IDE devices
80-conductor ATA 66/100 cable	

Note: If you use only one IDE device on this motherboard, please set the IDE device as “Master”. Please refer to the instruction of your IDE device vendor for the details. Besides, to optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black).

USB 2.0 Header (9-pin USB45) (see p.9, No. 18)		This I/O panel accommodates 4 default USB 2.0 ports. If those USB 2.0 ports on the I/O panel are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.
Infrared Module Header (5-pin IR1) (see p.9, No. 17)		This header supports an optional wireless transmitting and receiving infrared module.

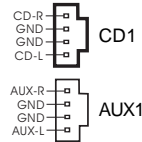


### Internal Audio Connectors

(4-pin CD1, 4-pin AUX1)

(CD1: see p.9, No. 26)

(AUX1: see p.9, No. 27)

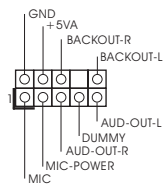


These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

### Front Panel Audio Header

(9-pin AUDIO1)

(see p.9, No. 25)

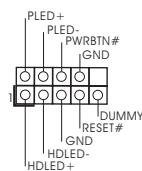


This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

### System Panel Header

(9-pin PANEL1)

(see p.9, No. 15)

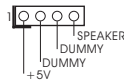


This header accommodates several system front panel functions.

### Chassis Speaker Header

(4-pin SPEAKER 1)

(see p.9, No. 16)

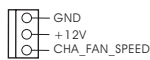


Please connect the chassis speaker to this header.

### Chassis Fan Connector

(3-pin CHA\_FAN1)

(see p.9, No. 13)

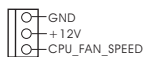


Please connect the chassis fan cable to this connector and match the black wire to the ground pin.

### CPU Fan Connector

(3-pin CPU\_FAN1)

(see p.9, No. 5)



Please connect the CPU fan cable to this connector and match the black wire to the ground pin.

### ATX Power Header

(20-pin ATXPWR1)

(see p.9, No. 2)

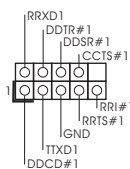


Please connect the ATX power supply to this header.

### COM Port Header

(9-pin COM2)

(see p.9, No. 19)



This COM port header is used to support a COM port module.

## Chapter 3 BIOS Setup

### 3.1 BIOS Setup Utility

This section explains how to configure your system using the BIOS Setup Utility. The BIOS FWH chip on the motherboard stores the BIOS Setup Utility. When you start up the computer, there is a chance for you to run the BIOS Setup. Press <F2> during the Power-On-Self-Test (POST) to enter the BIOS Setup Utility, otherwise, POST continues with its test routines.

If you wish to enter the BIOS Setup after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on.

The BIOS Setup Utility is designed to be user-friendly. It is a menu-driven program, which allows you to scroll through its various sub-menus and select among the predetermined choices.



Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and may not exactly match what you see on your screen.

#### 3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

<b>MAIN</b>	Sets up the basic system configuration
<b>ADVANCED</b>	Sets up the advanced features
<b>SECURITY</b>	Sets up the security features
<b>POWER</b>	Configures Power Management features
<b>BOOT</b>	Configures the default system device that is used to locate and load the Operating System
<b>EXIT</b>	Exits the current menu or the BIOS Setup

To access the menu bar items, press the right or left arrow key on the keyboard until the desired item is highlighted.

#### 3.1.2 Legend Bar

At the bottom of the Setup Screen is a legend bar. The following table lists the keys in the legend bar with their corresponding functions.

Navigation Key(s)	Function Description
<F1>	Displays the General Help Screen
<ESC>	Jumps to the Exit menu or returns to the upper menu from the current menu
↑ / ↓	Moves cursor up or down between fields
← / →	Selects menu to the left or right
+ / -	Increases or decreases values
<Enter>	Brings up a selected menu for a highlighted field
<F9>	Loads all the setup items to default value
<F10>	Saves changes and exits Setup

### 3.2 Main Menu

When you enter the BIOS Setup Utility, the following screen appears.

AMIBIOS SETUP UTILITY - VERSION 3.31a			
Main	Advanced	Security	Power Boot Exit
System Date Jan 22 2004 Thu System Time 20:07:40 ▶ Floppy Drives ▶ IDE Devices BIOS Version BIOS P1.00 Processor Type Pentium (R) 4 CPU Processor Speed 2400 MHz Cache Size 512 KB Microcode Update F24 / 18 Total Memory 127 MB + 1 MB Share Memory DDR1 128 MB / 133 MHz (DDR 266) DDR2 None		[ Setup Help ] Month: Jan - Dec Day: 01 - 31 Year: 1980 - 2099	
F1:Help      ↑↓:Select Item      +/-:Change Values      F9:Setup Defaults Esc:Exit      ←→:Select Menu      Enter:Select      ▶Sub-Menu      F10:Save & Exit			

#### System Date [Month/Day/Year]

Set the system date that you specify. Valid values for month, day, and year are  
 Month: (Jan to Dec), Day: (1 to 31), Year: (up to 2099). Use ↑ ↓ keys to move between the Month, Day and Year fields.

#### System Time [Hour:Minute:Second]

Set the system to the time that you specify. Use ↑ ↓ keys to move between the Hour, Minute and Second fields.

#### Floppy Drives

Use this to set the type of floppy drives installed.

#### IDE Devices

Use this to configure IDE devices.

## TYPE

To set the type of the IDE device, first, please select "IDE Devices" on Main menu and press <Enter> to get into the sub-menu. Then, select among "Primary IDE Master", "Primary IDE Slave", "Secondary IDE Master", and "Secondary IDE Slave" to make configuration of its type. Below are the configuration options.

AMIBIOS SETUP UTILITY - VERSION 3.31a	
Main	
Primary IDE Master: [ Setup Help ]	
Type	Auto
Cylinders	
Heads	
Write Precompensation	
Sectors	
Maximum Capacity	
LBA Mode	On
Block Mode	On
Fast Programmed I/O Modes	Auto
32 Bit Transfer Mode	On
Ultra DMA Mode	Auto

F1:Help    ↑↓:Select Item    +/-:Change Values    F9:Setup Defaults  
Esc:Previous Menu    Enter:Select    ►Sub-Menu    F10:Save & Exit

**[USER]:** It allows user to manually enter the number of cylinders, heads, and sectors per track for the drive.



Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

**[Auto]:** Select [Auto] to automatically detect hard disk drive. If auto-detection is successful, the BIOS Setup automatically fills in the correct values for the remaining fields on this sub-menu. If the auto-detection fails, it may be due to the fact that the hard disk is too old or too new. If the hard disk was already formatted on an older system, the BIOS Setup may detect incorrect parameters. In these cases, select [User] to manually enter the IDE hard disk drive parameters.



After entering the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives.

[ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

#### **Cylinders**

This is used to configure the number of cylinders. Refer to the drive documentation to determine the correct value.

#### **Heads**

This is used to configure the number of read/write heads. Refer to the drive documentation to determine the correct values.

#### **Write Pre-compensation**

Enter Write Pre-compensation sector. Refer to the drive documentation to determine the correct value.

#### **Sectors**

This is used to configure the number of sectors per track. Refer to the drive documentation to determine the correct value.

#### **Maximum Capacity**

This field shows the drive's maximum capacity as calculated by the BIOS based on the drive information you entered.

#### **LBA Mode**

This allows user to select the LBA mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Off] to disable the LBA mode.

#### **Block Mode**

Set the block mode to [On] will enhance hard disk performance by reading or writing more data during each transfer.

#### **Fast Programmed I/O Modes**

This allows user to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

#### **32 Bit Transfer Mode**

It allows user to enable 32-bit access to maximize the IDE hard disk data transfer rate.

#### **Ultra DMA Mode**

Ultra DMA capability allows improved transfer speeds and data integrity for compatible IDE devices. Set to [Disabled] to suppress Ultra DMA capability.

### **3.3 Advanced, Security, Power, Boot, and Exit Menus**

Detailed descriptions of these menus are listed in the Appendix. See page 23.

## ***Chapter 4 Software Support***

### **4.1 Install Operating System**

This motherboard supports various Microsoft® Windows® operating systems: 98 SE / ME / 2000 / XP. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

### **4.2 Support CD Information**

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

#### **4.2.1 Running The Support CD**

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file ASSETUP.EXE from the BIN folder in the Support CD to display the menus.

#### **4.2.2 Drivers Menu**

The Drivers Menu shows the available devices drivers if the system detects installed devices. Please install the necessary drivers to activate the devices.

#### **4.2.3 Utilities Menu**

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

## Appendix: Advanced BIOS Setup

This section will introduce you the following BIOS Setup menus: “Advanced,” “Security,” “Power,” “Boot,” and “Exit.”

### 1. Advanced BIOS Setup Menu

AMIBIOS SETUP UTILITY - VERSION 3.31a		
Main	Advanced	Security Power Boot Exit
<div>Spread Spectrum Disabled</div> <div>CPU Host Frequency Disabled</div> <div>Actual Frequency 133MHz</div> <div>CPU Ratio Selection Locked</div> <div>SDRAM Frequency Auto</div> <div>Hyper Threading Technology Auto</div> <div>Flexibility Option Disabled</div> <div>▶ Chipset Configuration</div> <div>▶ Resource Configuration</div> <div>▶ Peripheral Configuration</div> <div>▶ System Hardware Monitor</div>		<div>[ Setup Help ]</div> <div>&lt;Enter&gt; to enable or disable the feature of spread spectrum.</div>
F1:Help Esc:Exit	↑↓:Select Item ←→:Select Menu	+/-:Change Values Enter:Select   ▶Sub-Menu F9:Setup Defaults F10:Save & Exit

#### Spread Spectrum:

This field should always be [Disabled] for better system stability.

#### CPU Host Frequency:

This shows current CPU host frequency of the installed motherboard.

#### CPU Ratio Selection:

CPU Ratio is the multiple that times the frontside bus frequency will equal the core speed of the installed processor. Whether the option is open or locked is determined by the installed processor.

#### SDRAM Frequency:

If [Auto] is selected, the motherboard will detect the memory module(s) inserted and assigns appropriate frequency automatically.

#### Hyper-Threading Technology:

To enable this feature, it requires a computer system with an Intel Pentium®4 processor that supports Hyper-Threading technology and an operating system that includes optimization for this technology, such as Microsoft® Windows® XP. Set to [Auto] if using Microsoft® Windows® XP, or Linux kernel version 2.4.18 or higher. This option will be hidden if the current CPU does not support Hyper-Threading technology.

#### Flexibility Option:

Default is [Disabled]. When it's Enabled, it will allow better tolerance for memory compatibility. There is a Hot-Key also, it will automatic to [Enabled] when you press [Home] during the POST.

## Chipset Configuration:

AMIBIOS SETUP UTILITY - VERSION 3.31a	
Advanced	
Chipset Configuration	[ Setup Help ]
AGP Aperture Size	64MB
ICH Delayed Transaction	Disabled
USB Controller	Enabled
USB Device Legacy Support	Disabled
CPU Thermal Throttling	Enabled
DRAM Write Throttling	Enabled
***** DRAM Timing *****	
SDRAM CAS Latency	Auto
Configure SDRAM Timing by SPD	Disabled
SDRAM RAS# Precharge	3 Clocks
SDRAM RAS# to CAS# Delay	3 Clocks
SDRAM Precharge Delay	7 Clocks

F1:Help	↑↓:Select Item	+/-:Change Values	F9:Setup Defaults
Esc:Previous Menu		Enter:Select   ▶Sub-Menu	F10:Save & Exit

**AGP Aperture Size:** It refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this field at the default value unless your AGP card requires other sizes.

**ICH Delayed Transaction:** Select [Enabled] will enable delayed transactions for internal register, FWH, and LPC interface accesses.

**USB Controller:** Use this to enable or disable the use of USB controller.

**USB Device Legacy Support:** Use this to enable or disable support to emulate legacy I/O devices such as mouse, keyboard,... etc.

**CPU Thermal Throttling:** Select [Enabled] will enable P4 thermal control circuit to keep CPU from overheated.

**DRAM Write Throttling:** Select [Enabled] will enable north bridge thermal management to keep it from overheated.

**SDRAM CAS Latency:** This parameter controls the latency between the read command and the time the data available.

**Configure SDRAM Timing by SPD:** Select [Enabled] will configure the following 3 items by the contents in the SPD (Serial Presence Detect) device.

**SDRAM RAS# Precharge:** This controls the idle clocks after a precharge command is issued.

**SDRAM RAS# to CAS# Delay:** This controls the latency between the SDRAM active command and the read / write command.

**SDRAM Precharge Delay:** This controls the number of DRAM clocks for RAS minimum.



## Resource Configuration:

AMIBIOS SETUP UTILITY - VERSION 3.31a	
Advanced	
Resource Configuration	[ Setup Help ]
PCI Latency Timer (PCI Clocks) <b>32</b> Primary Graphics Adapter PCI	<Enter> to select PCI clocks. Leave on default setting for the best PCI performance.
F1:Help      ↑:Select Item      +/-:Change Values      F9:Setup Defaults Esc:Previous Menu      Enter:Select      ▶Sub-Menu      F10:Save & Exit	

**PCI Latency Timer (PCI Clocks):** The default is 32. We recommend you to keep the default value unless your PCI expansion cards' specifications require other settings.

**Primary Graphics Adapter:** This allows you to select [PCI], [Internal VGA], or [AGI] as the primary graphics adapter.

## Peripheral Configuration:

AMIBIOS SETUP UTILITY - VERSION 3.31a	
Advanced	
Peripheral Configuration	[ Setup Help ]
OnBoard FDC <b>Auto</b> OnBoard Serial Port A Auto OnBoard Serial Port B Auto Serial/Infrared Switch Serial Port B OnBoard Parallel Port Auto Parallel Port Mode ECP+EPP EPP Version EPP 1.9 Parallel Port IRQ Auto Parallel Port DMA Channel N/A OnBoard IDE Disabled OnBoard LAN Enabled OnBoard AC'97 Audio Auto OnBoard MC'97 Modem Auto	<Enter> to enable or disable the floppy drive controller.
F1:Help      ↑:Select Item      +/-:Change Values      F9:Setup Defaults Esc:Previous Menu      Enter:Select      ▶Sub-Menu      F10:Save & Exit	

**OnBoard FDC:** Use this to enable or disable floppy drive controller.

**OnBoard Serial Port A:** Use this to set addresses for the onboard serial port A or disable serial port A. Configuration options: [Auto], [Disabled], [3F8 / IRQ4 / COM1], [2F8 / IRQ3 / COM2], [3E8 / IRQ4 / COM3], [2E8 / IRQ3 / COM4].

**OnBoard Serial Port B:** Use this to set addresses for the onboard serial port B or disable serial port B. Configuration options: [Auto], [Disabled], [3F8 / IRQ4/COM1], [2F8 / IRQ3 / COM2], [3E8 / IRQ4 / COM3], [2E8 / IRQ3 / COM4].

**Serial/Infrared Switch:** You have to select either [Serial Port B] or [Infrared Port]. Default Value is [Serial Port B]

**OnBoard Parallel Port:** Select Parallel Port address or disable Parallel Port. Configuration options: [Auto], [Disabled], [378], [278].

**Parallel Port Mode:** Set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version".

**OnBoard IDE:** You may enable either the primary IDE channel or the secondary IDE channel. Or you may enable both the primary and the secondary IDE channels by selecting [Both]. Set to [Disabled] will disable the both. Configuration options: [Disabled], [Primary], [Secondary], [Both].

**OnBoard LAN:** This allows you to enable or disable the "OnBoard LAN" feature.

**OnBoard AC'97 Audio:** Select [Disabled], [Auto] or [Enabled] for the onboard AC'97 Audio feature.

**OnBoard MC'97 Modem:** Select [Auto] or [Disabled] for the onboard MC'97 Modem feature.

**System Hardware Monitor:** You can check the status of the hardware on your system. It allows you to monitor the parameters for CPU temperature, Mother-board temperature, CPU fan speed, and critical voltage.

AMIBIOS SETUP UTILITY - VERSION 3.31a			
Advanced			
System Hardware Monitor		[ Setup Help ]	
CPU Temperature	35°C / 95°F		
M / B Temperature	27°C / 82°F		
CPU FAN Speed	3110 RPM		
Chassis FAN Speed	N/A		
Vcore	1.72 V		
+ 3.30V	3.31 V		
+ 5.00V	4.97 V		
+ 12.00V	12.16 V		
F1:Help	↑↓:Select Item	+/-:Change Values	F9:Setup Defaults
Esc:Previous Menu		Enter:Select ▶Sub-Menu	F10:Save & Exit

## 2. Security Setup Menu

AMIBIOS SETUP UTILITY - VERSION 3.31a			
Main	Advanced	Security	Power Boot Exit
Supervisor Password		Clear	[ Setup Help ]  <Enter> to set the supervisor password.
User Password		Clear	
Set Supervisor Password		<b>Enter</b>	
Set User Password		[ Enter ]	
Password Check		Setup	
F1:Help      ↑:Select Item      +/-:Change Values      F9:Setup Defaults Esc:Exit      ←:Select Menu      Enter:Select      ►Sub-Menu      F10:Save & Exit			

**Supervisor Password:** This field shows the status of the Supervisor Password.

**[Clear]:** No password has been set.

**[Set]:** Supervisor password has been set.

**User Password:** This field shows the status of the User Password.

**[Clear]:** No password has been set.

**[Set]:** User password has been set.

**Set Supervisor Password:** Press <Enter> to set Supervisor Password. Valid password can be a 1 to 8 alphanumeric characters combination. If you already have a password, you must enter your current password first in order to create a new password.

**Set User Password:** Press <Enter> to set User Password. Valid password can be a 1 to 8 alphanumeric characters combination. If you already have a password, you must enter your current password first in order to create a new password.

**Password Check:** Select the check point for "Password Check". Configuration options: [Setup], [Always]. If [Setup] option is selected, the "Password Check" is performed before BIOS setup. If [Always] option is selected, the "Password Check" is performed before both boot-up and BIOS setup.

### 3. Power Setup Menu

AMIBIOS SETUP UTILITY - VERSION 3.31a					
Main	Advanced	Security	Power	Boot	Exit
			[ Setup Help ]		
Suspend To RAM			Disabled		
Repost Video on STR Resume			Disabled		
Restore on AC / Power Loss			Power Off		
Ring-In Power On			Disabled		
PCI Devices Power On			Disabled		
PS / 2 keyboard Power On			Disabled		
RTC Alarm Power On			Disabled		
RTC Alarm Date			15		
RTC Alarm Hour			12		
RTC Alarm Minute			30		
RTC Alarm Second			30		
			<Enter> to select auto-detect or disable the ACPI STR feature.		
F1:Help Esc:Exit			↑↓:Select Item ←→:Select Menu +/-:Change Values Enter:Select   ►Sub-Menu F9:Setup Defaults F10:Save & Exit		

**Repost Video on STR Resume:** This feature allows you to repost video on STR resume. It is recommended to enable this feature under Microsoft® Windows® 98 / ME.

**Restore on AC/Power Loss:** This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

**Ring-In Power On:** Use this to enable or disable Ring-in signals to turn on the system from the power-soft-off mode.

**PCI Devices Power On:** Use this to enable or disable PCI devices to turn on the system from the power-soft-off mode.

**PS/2 Keyboard Power On:** Use this to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

**RTC Alarm Power On:** Use this to enable or disable RTC (Real Time Clock) to power on the system. If [Enable] is selected, you must fill the RTC Alarm Date / Hour / Minute / Second sub-fields with the actual wake up time you desire.

## 4. Boot Setup Menu

AMIBIOS SETUP UTILITY - VERSION 3.31a					
Main	Advanced	Security	Power	Boot	Exit
Quick Boot Mode				Enabled	[ Setup Help ]
Boot Up Num-Lock				On	<Enter> to enable or disable the quick boot mode.
Boot To OS/2				No	
Boot From Network				Disabled	
▶ Boot Device Priority					
F1:Help      ↑↓:Select Item      +/-:Change Values      F9:Setup Defaults					
Esc:Exit      ←→:Select Menu      Enter:Select      ▶Sub-Menu      F10:Save & Exit					

**Quick Boot Mode:** Enable this mode will speed up the boot-up routine by skipping memory retestings.

**Boot Up Num-Lock:** If this is enabled, it will automatically activate the Numeric Lock function after boot-up.

**Boot To OS/2:** Select [Yes] will enable boot-up to OS/2 operating system.

**Boot From Network:** Use this to enable or disable “boot from network” feature.

**Boot Device Priority:** This allows you to set the boot device priority.

## 5. Exit Menu

AMIBIOS SETUP UTILITY - VERSION 3.31a					
Main	Advanced	Security	Power	Boot	Exit
<div>Exit Saving Changes [ Enter ] Exit Discarding Changes [ Enter ] Load Default Settings [ Enter ] Discard Changes [ Enter ]</div>					<div>[ Setup Help ] Exits and saves the changes in CMOS RAM.</div>
<div>F1:Help      ↑↓:Select Item      +/-:Change Values      F9:Setup Defaults Esc:Exit      ←→:Select Menu      Enter:Select      ►Sub-Menu      F10:Save &amp; Exit</div>					

**Exit Saving Changes:** After you enter the sub-menu, the message “Save current settings and exit” will appear. If you press <ENTER>, it will save the current settings and exit the BIOS SETUP Utility.

**Exit Discarding Changes:** After you enter the submenu, the message “Quit without saving changes” will appear. If you press <ENTER>, you will exit the BIOS Setup Utility without making any changes to the settings.

**Load Default Settings:** After you enter the submenu, the message “Load default settings” will appear. If you press <Enter>, it will load the default values for all the setup configuration.

**Discard Changes:** After you enter the sub-menu, the message “Load setup original values” will appear. If you press <ENTER>, original values will be restored and all changes are discarded.