This publication, photographs, illustrations and software are under the protection of international copyright laws and all rights reserved. It does not allow any reproduction of this manual, content and any materials contained herein without the written consent of the authentic manufacturer.

The information in this manual is subject to change without notice. The manufacturer does neither represent nor warrant the contents hereof; and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Furthermore, the manufacturer reserves the right to revise and change this publication from time to time, without the obligation of notifying any person of such revision or changes.

Trademarks

IBM, VGA, and PS/2 are registered trademarks of International Business Machines.
Intel, Pentium, Pentium-II, and MMX are registered trademarks of Intel Corporation.
Microsoft, MS-DOS and Windows 95/98/NT/2000/XP are registered trademarks of Microsoft Corporation.
PC-cillin is a trademark of Trend Micro Inc.
AMI is a trademark of American Megatrends, Inc.
MediaRing Talk is a registered trademark of MediaRing Inc.
3Deep is a registered trademark of E-Color Inc.
It has been acknowledged that all mentioned brands or product names are trademarks or registered trademarks of their respective holders.
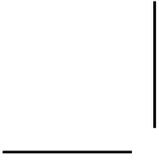
Notice:

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.

Table of Contents

Chapter 1

Introduction

Congratulations on purchasing the M900 mainboard. The M900 mainboard is an ATX mainboard that uses a 6-layer printed circuit board and measures 305 x 244mm. The mainboard features a **Socket 423** that accommodates **Intel Pentium 4 processors** supporting front side bus (FSB) speeds up to **400 MHz** and data bus bandwidths up to **3.2 GB/s**.

The M900 incorporates the Intel Tehama 850 Northbridge and Intel 82801BA (ICH2) Southbridge chipsets, combining support for two-channel **RAMBUS DRAM** (RDRAM), 2X/**4X AGP** (1.5V only), and the AC 97 codec.

The Intel 82801I/O controller hub includes an integrated audio-codec controller that lets the processor efficiently decode sound generated by the integrated audio system.

Key Features

This mainboard has these key features:

Socket 423 Processor

♦ The PGA Socket 423

♦ Accommodates Intel Pentium 4 CPUs

♦ Supports a front-side bus (FSB) of 400 MHz

♦ Supports 3.2 GB/s data bus bandwidth

Chipset

Intel's innovative Tehama 850 Northbridge and 82801 Southbridge chipsets are based on an innovative and scaleable architecture with proven reliability and performance. A few of the advanced features of the chipsets are:

♦ Host interface controller supports 400 MHz frontside (system) bus frequency

♦ Supports up to 2 GB of Rambus DRAM

♦ Supports a maximum memory bandwidth of 3.2 GB/s

♦ AGP controller is AGP 2.0 compliant and supports 2x/4x Fast Write Protocol (1.5V only)

♦ PCI IDE controller supports PCI bus mastering, PIO modes 0~4, and UDMA 33/66/100

♦ Two USB controllers double the bandwidth to 24 Mbps across four ports

♦ Integrated AC 97 audio that supports full surround sound with up to 2 channels

Additional key features include support for four USB ports, an AC 97 link for audio and modem, hardware monitoring, and ACPI/OnNow power management.

Memory Support

♦ The mainboard accommodates Rambus DRAM up to 2 GB using 2.5V unbuffered Rambus DRAM (RDRAM) memory modules.

VGA

♦ The M900 includes a 4xAGP slot that provides four times the bandwidth of the original AGP specification. AGP technology provides a direct connection between the graphics sub-system and the processor so that the graphics do not have to compete for processor time with other devices on the PCI bus.

AC 97 Audio Codec

♦ The AC 97 Audio codec is compliant with the AC 97 2.1 specification, and supports 18-bit ADC (Analog Digital Converter) and DAC (Digital Analog Converter) resolution as well as 18-bit stereo full-duplex codec with independent and variable sampling rates.

Expansion Options

The mainboard comes with the following expansion options:

♦ Five 32-bit PCI slots
♦ A 4xAGP slot (AGP Pro slot optional)
♦ A Communications Network Riser (CNR) slot
♦ Two IDE channels and a floppy disk drive interface

The M900 supports Ultra DMA bus mastering with transfer rates of 33/66/100 MB/sec.

Onboard I/O Ports

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

♦ Two PS/2 ports for mouse and keyboard
♦ Two serial ports
♦ One parallel port
♦ One MIDI/game port
♦ Two USB 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.

Bundled Software

♦ **PC-Cillin 2000** provides automatic virus protection under Windows 95/98/NT/2000
♦ **MediaRing Talk** provides PC to PC or PC to Phone internet phone communication
♦ **3Deep** delivers the precise imagery and displays accurate color in your monitor
♦ **Recovery Genius 21st V5.0** provides the function to recover, reserve and transfer hard disk data.
♦ **CD Ghost** is the software stimulating a real CD-ROM to perform equivalent function.
♦ **Language Genius 21st** is the software to provides learning tools of language and singing.
♦ **PC DJ** is a dual-MP3 player that enables users to actually mix music right on their own personal computers.
♦ **Adobe Acrobat Reader V5.0** is the software to help users read .PDF files.

Dimensions

♦ ATX form factor of 305 x 244 mm

Package Contents

Your mainboard package contains the following items:

- ❑ The mainboard
- ❑ The User's Guide
- ❑ One diskette drive ribbon cable and bracket
- ❑ One IDE drive ribbon cable and bracket
- ❑ One auto-install software support CD
- ❑ Retention modules (already mounted on the board)
- ❑ Two CPU retention brackets
- ❑ Two dummy Rambus DRAM modules (already inserted in RIMM slots)

Optional Accessories

You can purchase the following optional accessories for this mainboard.

- ❑ Extended USB module
- ❑ CNR v.90 56K Fax/Modem card

Static Electricity Precautions

Components on this mainboard can be damaged by static electricity. Take the following precautions when unpacking the mainboard and installing it in a system.
1. Keep the mainboard and other components in their original static-proof packaging until you are ready to install them.
2. During installation, 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. Handle the mainboard carefully by the edges. Avoid touching the components unless it is absolutely necessary. During installation put the mainboard on top of the static-protection packaging it came in with the component side facing up.

Pre-Installation Inspection

1. Inspect the mainboard for damage to the components and connectors on the board.
2. If you suspect that the mainboard has been damaged, do not connect power to the system. Contact your mainboard vendor and report the damage.

Chapter 2

Mainboard Installation

To install this mainboard in a system, follow the procedures in this chapter:

❑ Identify the mainboard components
❑ Install a CPU
❑ Install two or more system memory modules
❑ Verify that all jumpers or switches are set correctly
❑ Install the mainboard in a system chassis (case)
❑ Connect any extension brackets or cables to connecting headers on the mainboard
❑ Install other devices and make the appropriate connections to the mainboard connecting headers

Note:
1. Before installing this mainboard, make sure jumper JBAT1 is set to

   Normal setting. See this chapter for information on locating JBAT1 and the setting options.
2. Never connect power to the system during installation. Doing so may damage the mainboard.

Mainboard Components

This diagram below identifies major components on the mainboard.
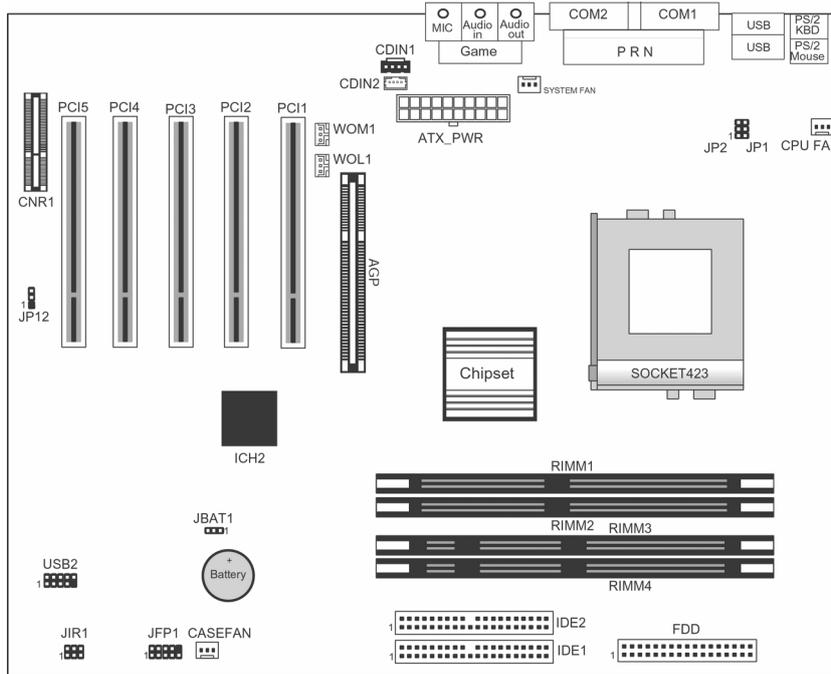
Note: Any jumpers on your mainboard that do not appear in this illustration are for testing only.

I/O Ports

The backplane of the mainboard has a full set of I/O ports:
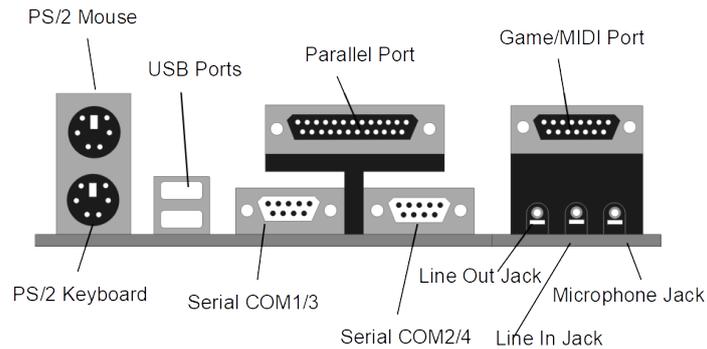
1. Use the upper PS/2 port to connect a PS/2 pointing device. Use the lower PS/2 port to connect a PS/2 keyboard.
2. Use the USB ports to connect USB devices.
3. Use LPT1 to connect printers or other parallel communications devices.
4. Use the COM ports to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3. COM2 is identified by the system as COM2/4.
5. Use the game port to connect a joystick or a MIDI device.
6. Use the three audio ports to connect audio devices. The left side jack is for a stereo line-out signal. The middle jack is for a stereo line-in signal. The right side jack is for a microphone.

Installing the Processor

This mainboard has a Socket 423 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

The following illustration shows CPU installation components:
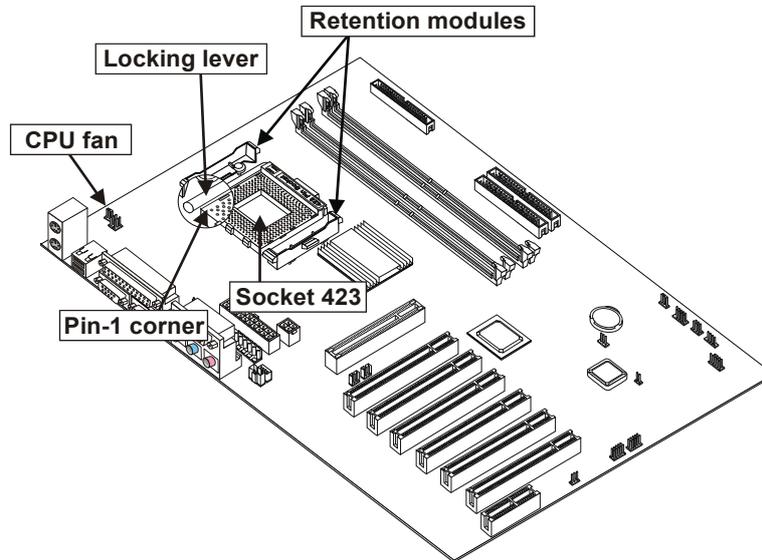
Follow these instructions to install the CPU:

1. Pull the CPU socket locking lever away from the socket to unhook it and raise the locking lever to the upright position.
2. Identify the pin-1 corner on the CPU socket and the pin-1 corner on the processor.
3. Match the pin-1 corners and insert the processor into the socket. Do not use force.
4. Swing the locking lever down and hook it under the latch on the edge of the socket.
5. Apply thermal grease to the top of the CPU.
6. Insert the CPU cooling fan/heatsink assembly.
7. Plug the CPU fan cable connector into the CPU cooling fan power supply on the mainboard (CFAN).
8. Insert the retention module clips over the edge of the CPU fan/heatsink assembly.

Installing Memory Modules

This mainboard accommodates 184-pin 2.5V unbuffered Rambus DRAM (RDRAM) memory modules. The memory chips must be standard or registered RDRAM. The memory bus runs at 400 MHz.

Installation Procedure

The mainboard has four RIMM (Rambus DIMM) slots that accommodate up to 2 GB of memory. You can only install the memory modules in pairs; therefore, you must install at least two RIMM modules. The dummy Rambus DRAM modules (C-RIMM) must be inserted in unpopulated slots.

1. Align the memory module with the slot. The RIMM slots are keyed with notches and the RIMMs are keyed with cutouts so that they can only be installed correctly.
2. Push the latches on each side of the RIMM slot down.
3. Check that the cutouts on the RIMM module edge connector match the notches in the RIMM slot.
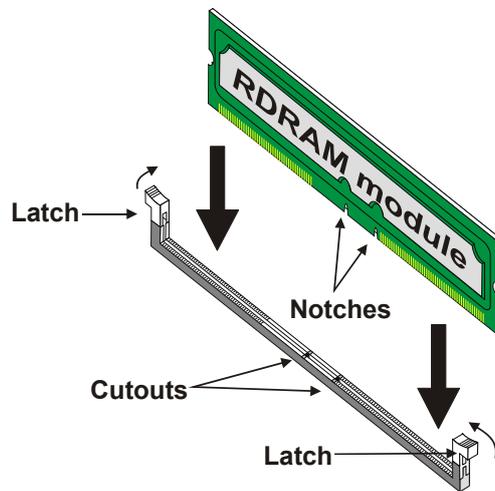
4. Install the RIMM module into the slot and press it firmly down so that it seats correctly. The slot latches are levered upwards and latch on to the edges of the RIMM when it is installed correctly.
5. Install any remaining RIMM modules.

11

6. After installing your RIMM modules, insert the C-RIMM modules in the unoccupied slots:
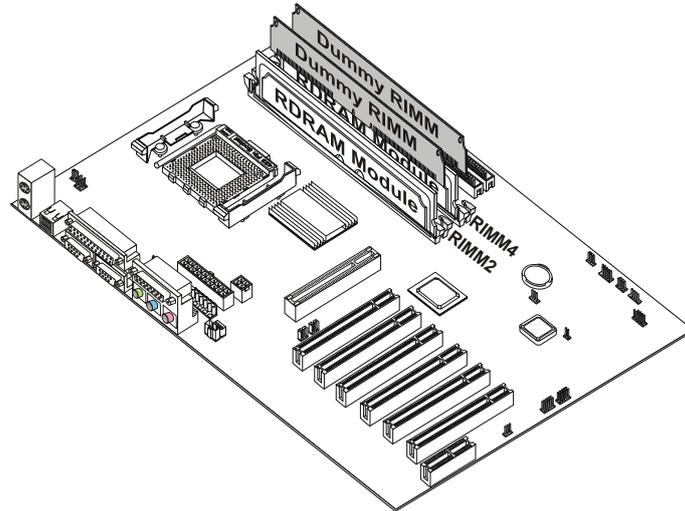
Jumper Settings

Jumper JBAT1 – enables you to clear the BIOS:

1. Turn the system off.
2. Remove all ATX power connectors.
3. Short pins 2 and 3 on JBAT1.
4. Return the jumper to the normal setting.
5. Plug in all ATX power connectors
6. Turn the system on. The BIOS is returned to the default settings.

Jumper	Type	Description	Setting (*default*)	
JBAT1	3 pin	Clear CMOS	*1-2: Normal* 2-3: Clear	JBAT1 **1**

Jumper 1 & Jumper 2 – enable this jumper if you want keyboard activity to turn on the computer.

Jumper	Type	Description	Setting (*default*)	
JP1 & JP2	3 pin / 3 pin	Keyboard power on	1-2: Enable / *2-3: Disable*	JP1 JP2
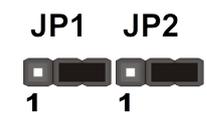
Jumper 12 – This jumper enables or disables the onboard audio codec.

Jumper	Type	Description	Setting (*default*)	
JP12	3 pin	Enable onboard audio codec	*1-2: Enable* / 2-3: Disable	JP12
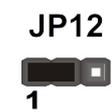
The Panel Connector

The panel connector provides a standard set of switch and LED connectors usually found on ATX or micro-ATX cases. Refer to the table below for information:

Device	Pins
Empty	10
N/C	9
Power ON/OFF	6, 8
Reset Switch	5, 7
Green LED Indicator	+2, -4
HDD LED	+1, -3
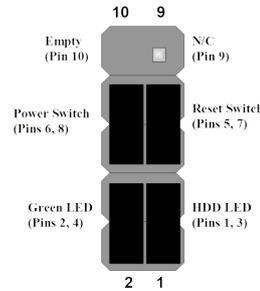
Other Devices Installation

Floppy Diskette Drive Installation

The mainboard has a floppy diskette drive (FDD) interface ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

IDE Devices

Your mainboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the mainboard. IDE devices have jumpers or switches that are used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual.

If you want to install more than two IDE devices, get a second IDE cable and you can add two more devices to the secondary IDE channel.

When installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE.

This mainboard supports UltraDMA 33/66/100. UDMA is a technology that accelerates the performance of devices in the IDE channel. Install IDE devices that support UDMA and use IDE cables that support UDMA for better performance.

Expansion Slots Installation

This mainboard has five 32-bit PCI (Peripheral Components Interconnect) expansion slots, one 4xAGP slot, and one Communications and Networking Riser (CNR) slot.

PCI Slots

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

4 x AGP Slot

The 4xAGP slot is used to install a graphics adapter that supports the 4xAGP specification and has a 4xAGP edge connector. The 4xAGP slot only supports 1.5V 4xAGP and 2xAGP cards.

CNR Slot

This slot is used to insert CNR cards including LAN, Modem, and Audio functions.

CNR1

AGP

SOCKET423

PCI5 PCI4 PCI3 PCI2 PCI1
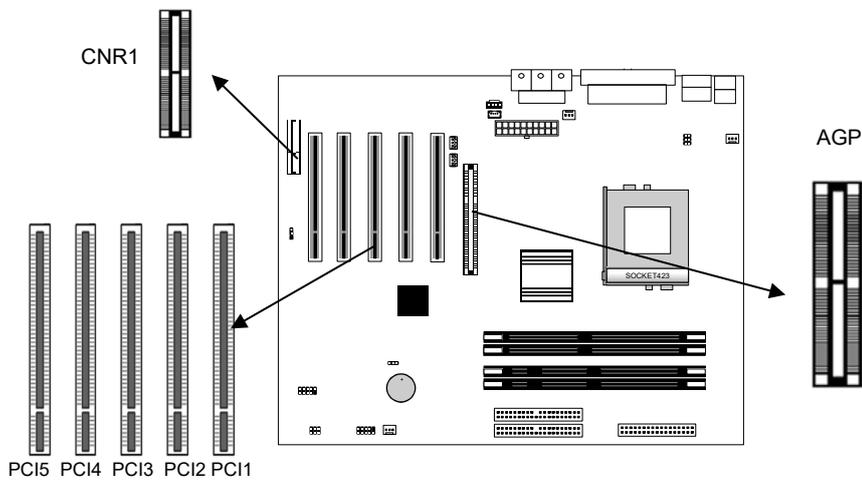
1. Remove a blanking plate from the system case corresponding to the slot you are going to use.
2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3. Secure the metal bracket of the card to the system case with a screw.

Connecting Optional Devices

Refer to the following information to connect the mainboard's optional devices.
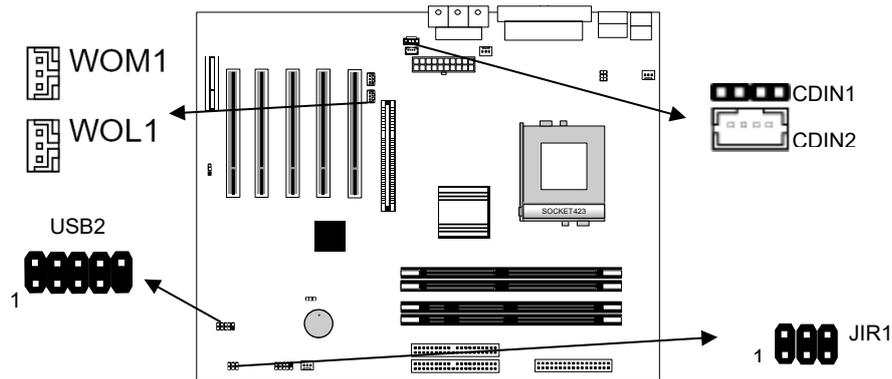
WOL1/WOM1: Wake On LAN/Wake On Modem

If you have installed a LAN card, use the cable provided with the card to plug into the mainboard WOL1 connector. This enables the Wake On LAN (WOL) feature. When your system is in a power-saving mode, any LAN signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility.

Pin	Signal Name
1	5VSB
2	Ground
3	SENSE

If you have installed a modem, use the cable provided with the modem to plug into the mainboard WOM1 connector. This enables the Wake On Modem (WOM) feature.
When your system is in a power-saving mode, any modem signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility. See Chapter 3 for more information.

16

CD1/2:CD-ROM/DVD Audio Input Connector

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system.
On the mainboard, locate the two 4-pin connectors **CDIN1** and **CDIN2**.
There are two kinds of connector because different brands of CD-ROM drive have different kinds of audio cable connectors. Connect the cable to the appropriate connector.

CDIN1

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

CDIN2

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

USB2: USB port 3, 4

The mainboard has two USB ports installed on the rear edge I/O port array. However, some computer cases have a special module that mounts USB ports at the front of the case. If you have this kind of case, use auxiliary USB connectors USB2 and USB3 to connect the front-mounted ports to the mainboard.

Pin	Signal Name	Pin	Signal Name
1	Port 3 power	2	Port 4 power
3	Port 3 USB-	4	Port 4 USB-
5	Port 3 USB+	6	Port 4 USB+
7	Port 3 ground	8	Port 4 ground
9	Protection key	10	Over current sensor

JIR1: Consumer infrared port

The mainboard supports a Consumer Infrared (CIR) data port. Infrared ports allow 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 Name	Pin	Signal Name
1	CIR receive	2	KEY
3	+5V	4	Ground
5	IR transmit	6	IR receiver

Chapter 3

BIOS Setup Utility

Introduction

The BIOS Setup Utility records settings and information about your computer such as the date and time, the kind of hardware installed, and various configuration settings. Your computer uses this information to initialize all the components when booting up and functions as the basis for coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop your computer from booting properly. If this happens, you can use the clear CMOS jumper to clear the CMOS memory used to store the configuration information.

You can run the setup utility and manually make changes to the configuration. You might need to do this to configure some of the hardware that you install on or connect to the mainboard, such as the CPU, system memory, disk drives, etc.

Running the Setup Utility

Each time your computer starts, before the operating system loads, a message appears on the screen that prompts you to "*Hit <DEL> if you want to run SETUP*". When 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  1.21.05
                  (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 the cursor arrow keys to highlight any of the options on the main menu page. Press **Enter** to select the highlighted option. To leave the setup utility, press the **Escape** key. To cycle through the Setup Utility's optional color schemes hold down the **Shift** key and press **F2**.

Some of the options on the main menu page lead to tables of items with installed values. In these pages, use the cursor arrow keys to highlight the items, and then use the **PgUp** and **PgDn** keys to cycle through the alternate values for each of the items. Other options on the main menu page lead to dialog boxes which require you to answer Yes or No by hitting the **Y** or **N** keys.

If you have already made changes to 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 option displays a table of items defining basic information about your system.

```
╔══════════════════════════════════════════════════════════════════════════╗
║                    AMIBIOS SETUP – STANDARD CMOS SETUP                     ║
║              (C) 2000  American Megatrends, Inc. All Rights Reserved        ║
╠══════════════════════════════════════════════════════════════════════════╣
║ Date (mm/dd/yy) : Wed Nov 28, 2001                                         ║
║ Time (hh/mm/ss) : 12:12:34                                                 ║
║                                                     LBA   Blk   PIO   32Bit ║
║              Type      Size Cyln Head WPcom Sec Mode  Mode  Mode  Mode      ║
║ Pri Master  : Not Installed                                                ║
║ Pri Slave   : Not Installed                                                ║
║ Sec Master  : Not Installed                                                ║
║                                                                            ║
║ Sec Slave   : Not Installed                                                ║
║ Floppy Drive A :  Not Installed                                            ║
║                                                                            ║
║ 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        ║
╚══════════════════════════════════════════════════════════════════════════╝
```

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

21

Advanced Setup Page

This option displays a table of items that define advanced information about your system.

```
                 AMIBIOS SETUP – ADVANCED SETUP
           (C) 2000  American Megatrends, Inc. All Rights Reserved

Quick Boot                   Enabled
1st Boot Device              IDE-0
2nd Boot Device              Floppy
3rd Boot Device              CDROM
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 > 64MB          No        ESC  : Quit         ↑↓←→ : Select Item
L1 Cache                     Enabled
L2 Cache                     Enabled   F1   : Help       PU/PD/+/-  : Modify
Cache Bus ECC                Disabled
System BIOS Cacheable        Enabled   F5   : Old Values  (Shift)F2  : Color
Video BIOS Cacheable         Disabled
Auto detect PCI Clock        Disabled  F6   : Load BIOS Defaults
CLK Spread Spectrum          Disabled
                                       F7   : Load Setup Defaults
```

Quick Boot	If you enable this item, the system starts up more quickly be elimination some of the power on test routines.
1ˢᵗ Boot Device **2ⁿᵈ Boot Device** **3ʳᵈ Boot Device**	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
S.M.A.R.T. for Hard Disks	Enable this item if any IDE hard disks support the S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) feature.
BootUp Num-Lock	This item determines if the Num Lock key is active or inactive at system start-up time.
Floppy Drive Swap	If you have two diskette drives installed and you enable this item, drive A becomes drive B and drive B becomes drive A.
Floppy Drive Seek	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.
Password Check	If you have entered a password for the system, use this item to determine, if the password is required to enter the Setup Utility (*Setup*) or required both at start-up and to enter the Setup Utility (*Always*).
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.
L1/L2 Cache	Leave these items enabled since all the processors that can be installed on this board have internal L1/L2 cache memory.

Cache Bus ECC	This item can perform the error check correction function.
System BIOS Cacheable	If you enable this item, a segment of the system BIOS will be copied to main memory for faster execution.
Video BIOS Cacheable	If you enable this item, a segment of the Video BIOS will be copied to main memory for faster execution.
Auto detect PCI Clock	When this item is enabled, BIOS will disable the clock signal of free PCI slots.
CLK Spread Spectrum	Use this item to set the system bus spread spectrum for the installed processor.

Power Management Setup Page

This page sets some of the parameters for system power management operation.

```
┌──────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – POWER MANAGEMENT SETUP                │
│        (C) 2000 American Megatrends, Inc. All Rights Reserved      │
├─────────────────────────────────┬────────────────────────────────┤
│ Power Management/APM   Enabled   │                                │
│ ACPI Aware O/S         Yes       │                                │
│ Suspend Time Out       Disabled  │                                │
│ Wake Up on Ring        Disabled  │                                │
│ Wake Up on LAN         Disabled  │                                │
│                                  │                                │
│ Wake Up on PME         Disabled  │                                │
│                                  ├────────────────────────────────┤
│ K/B Power-on function  Disabled  │ ESC : Quit      ↑↓←→ : Select Item │
│   Stroke keys selected N/A       │ F1  : Help      PU/PD/+/- : Modify │
│ Resume by Alarm        Disabled  │ F5  : Old Values (Shift)F2 : Color │
│ RTC Alarm Date         15        │                                │
│ RTC Alarm Hour         12        │ F6  : Load BIOS Defaults        │
│ RTC Alarm Minute       30        │ F7  : Load Setup Defaults       │
│ RTC Alarm Second       30        │                                │
│                                  │                                │
└─────────────────────────────────┴────────────────────────────────┘
```

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.
ACPI Aware O/S	This item supports ACPI (Advanced Configuration and Power management Interface). Use this item to enable or disable the ACPI feature.
Suspend Time Out	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.

Wake Up on Ring	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.
Wake Up on LAN	The system can be turned off with a software command. If you enable this item, the system can automatically wake up on LAN. You must use an ATX power supply in order to use this feature.
Wake Up on PME#	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. Use this item to do wake-up action if inserting the PCI card.
Keyboard Power On Function	If you enable this item, you can turn the system on and off by pressing hot keys on the keyboard. You must enable the Keyboard Power On jumper and use an ATX power supply in order to use this feature.
Resume By 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 system's RTC. You must use an ATX power supply in order to use this feature.
RTC Alarm / Date / Hour / Minute / Second	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.

PCI / Plug and Play Setup Page

This page sets some of the parameters for devices installed on the PCI bus and devices that use the system plug and play capability.

```
┌──────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SETUP – PCI / PLUG AND PLAY SETUP                  │
│          (C) 2000 American Megatrends, Inc. All Rights Reserved         │
├────────────────────────────────────┬─────────────────────────────────┤
│ Plug and Play Aware O/S      Yes    │                                 │
│ Primary Graphics Adapter     PCI    │                                 │
│ Allocate IRQ for PCI VGA     Yes    │                                 │
│ VGA Frame Buffer USWC        Disabled                                 │
│ PCI  Frame Buffer USWC       Disabled                                 │
│ Graphics Aperture Size       64 MB  ├─────────────────────────────────┤
│                                     │ ESC : Quit      ↑↓←→ : Select Item │
│                                     │ F1  : Help     PU/PD/+/- : Modify │
│                                     │ F5  : Old Values (Shift)F2 : Color │
│                                     │ F6  : Load BIOS Defaults          │
│                                     │ F7  : Load Setup Defaults         │
└────────────────────────────────────┴─────────────────────────────────┘
```

Plug and Play Aware O/S	Enable this item if you are using an O/S that supports Plug and Play such as Windows 95 or 98.
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 a PCI slot.
Allocate IRQ for 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.

VGA Frame Buffer USWC	These item sets the VGA frame buffer for USWC. USWC (Uncacheable, Speculative Write Combining) is a cache memory technology. Leave these items at the default value.
PCI Frame Buffer USWC	These item sets the PCI frame buffer for USWC. USWC (Uncacheable, Speculative Write Combining) is a cache memory technology. Leave these items at the default value.
Graphics Aperture Size	This item defines an AGP for the graphics. Leave this item at the default value 64MB.

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.

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 some of the parameters for peripheral devices connected to the system.

```
                 AMIBIOS SETUP – FEATURES SETUP
         (C) 2000 American Megatrends, Inc. All Rights Reserved

OnBoard FDC                 Enabled

OnBoard Serial Port1        3F8/COM1

OnBoard Serial Port2        2F8/COM2

   Serial Port2 Mode        Normal

OnBoard Parallel Port       378        ESC  : Quit        ↑↓←→ : Select Item
                                       F1   : Help        PU/PD/+/- : Modify
Parallel Port Mode          Normal
                                       F5   : Old Values  (Shift)F2  : Color
Parallel Port IRQ           7
                                       F6   : Load BIOS Defaults
Parallel Port DMA Channel   N/A        F7   : Load Setup Defaults
AC97 Audio Controller       Auto

AC97 Modem  Controller      Auto

OnBoard MIDI Port           330

   MIDI Port IRQ            10

OnBoard Game Port           200

USB Function                Enabled

USB Function for DOS        Disabled
```

OnBoard FDC	Use this item to enable or disable the onboard floppy disk drive interface.
OnBoard Serial Port1/2	Use these items to enable or disable the onboard COM1/2 serial port, and to assign a port address.

Onboard Parallel Port	Use this item to enable or disable the onboard LPT1 parallel port, and to assign a port address. The Auto setting will detect and available 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.
Parallel Port IRQ	Use this item to assign IRQ to the parallel port.
Parallel Port DMA Channel	Use this item to assign a DMA channel to the parallel port.
AC'97 Audio Controller	This item enables or disables the AC'97 audio chip.
AC'97 Modem Controller	This item enables or disables the AC'97 modem chip.
OnBoard MIDI Port	Use this item to enable or disable the onboard MIDI port, and to assign a port address.
MIDI Port IRQ	Use this item to assign IRQ 7 to the parallel port.
OnBoard Game Port	This item enables or disables the I/O address for the game port.
USB Function	Use this item to select the USB ports or disabled.
USB Function for DOS	Enable this item if you plan to use the USB ports on this mainboard in a DOS environment.

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                            │
│        ©2000 American Megatrends, Inc. All Rights Reserved            │
├──────────────────────────────┬──────────────────────────────────────┤
│  CPU BRAND         INTEL      │                                      │
│  CPU Type          Pentium 4  │                                      │
│  CPU Speed         800 MHz    │                                      │
│  CPU Ratio         8.0x       │                                      │
│  CPU Frequency     100 MHz    │                                      │
│  CPU VCORE         +1.632V    │                                      │
│                              ├──────────────────────────────────────┤
│                              │  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 BRAND/ Type/ Core Voltage/Ratio / Frequency	These items show the type, core voltage, ratio and frequency of CPU installed in your system.
CPU Speed	This item decides CPU speed installed in your system.

Hardware Monitor Page

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

```
                  AMIBIOS SETUP – HARDWARE MONITOR
          (C) 2000 American Megatrends, Inc. All Rights Reserved

*** Hardware Monitor ***
System Temperature          38°C/100°F

CPU Temperature             58°C/138°F

System Fan Speed            0 RPM
Power Fan Speed             0 RPM        ESC : Quit        ↑↓←→ : Select Item
CPU Fan Speed               4655 RPM
VBAT                        + 3,392V     F1  : Help        PU/PD/+/- : Modify
 + 3,300V                   + 3,328V
 + 5.000V VCC               + 4,976V     F5  : Old Values  (Shift)F2 : Color
 -- 5,000V                  -- 5,292V
                                         F6  : Load BIOS Defaults
 --12,000V                  --11,890V    F7  : Load Setup Defaults
 + 12,000V                  +11,856V
```

| CPU / System Temperature	These items display CPU and system temperature measurement.
FANs & Voltage Measurements	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.
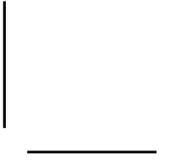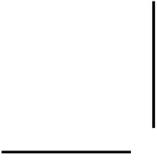
Chapter 4

Software & Applications

Introduction

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

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

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

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

Installing Support Software

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

   at the bottom. Please see the following illustration.

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

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

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

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

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

Auto-Installing under Windows 98/ME/2000/XP

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

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

2. Select the items that you want to setup by clicking on it (the default options are recommended). Click the **Next** button to proceed.
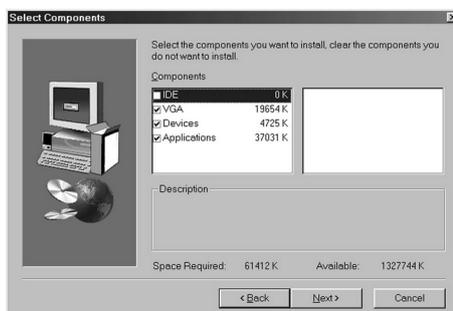
3. The support software will automatically install.

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

Installing under Windows NT or Manual Installation

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

1. Click the **Browse CD** button to bring up a file browser window. You can find out the **PATH.HTML**; or click the **ReadMe** to bring up a screen, and then click the Install Path at the bottom of the screen to find out the **PATH.HTML**, too.
2. Find out your mainboard model name from the **PATH.HTML**. Click the model name and 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.