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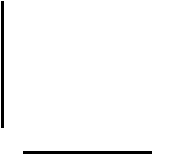
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

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Chapter 1

Introduction

Congratulations on purchasing the P4ITA2 mainboard. The P4ITA2 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 P4ITA2 incorporates the Intel Tehama 850 Northbridge and Intel 82801BA (ICH2) Southbridge chipsets, combining support for dual-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 P4ITA2 includes a 4xAGP slot that provides four times the bandwidth of the original AGP specification. AGP technology provides a direct connection between the graphics subsystem 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 P4ITA2 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
- ◆ **WinDVD2000** is a DVD playback application (optional)

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

Inspect the mainboard for damage to the components and connectors on the board.

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

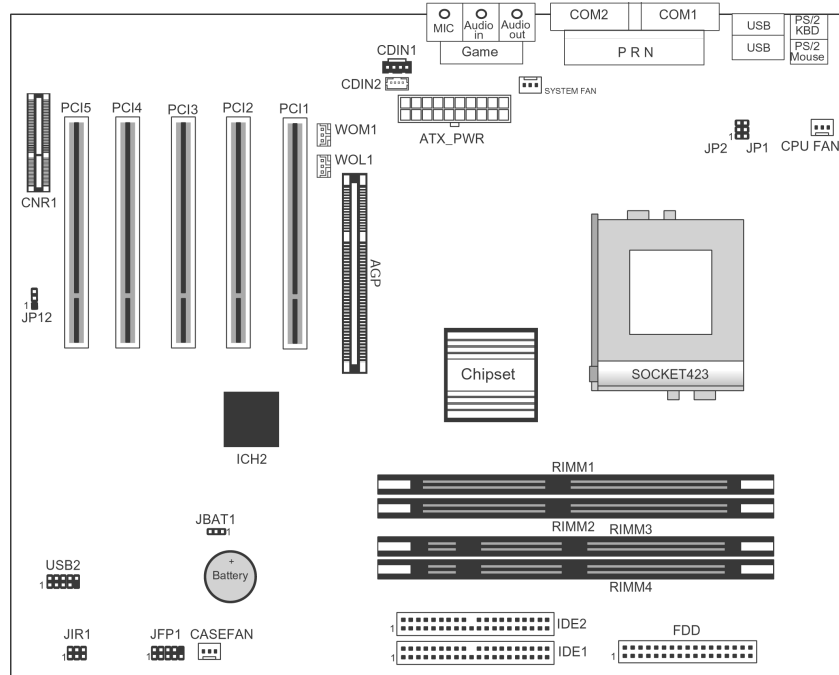
To install this mainboard in a system, follow the procedures in this chapter:

- ❑ 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.

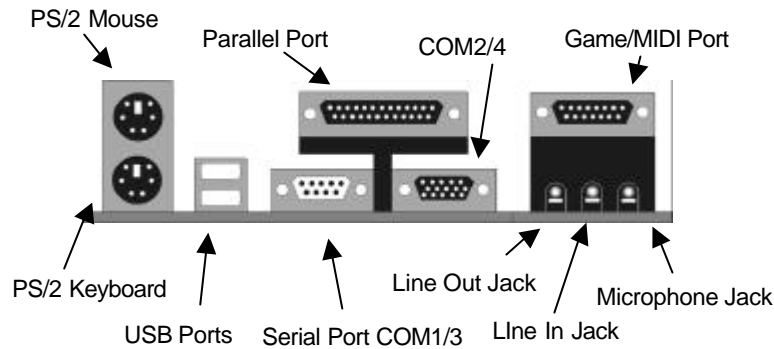
Mainboard Components



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:



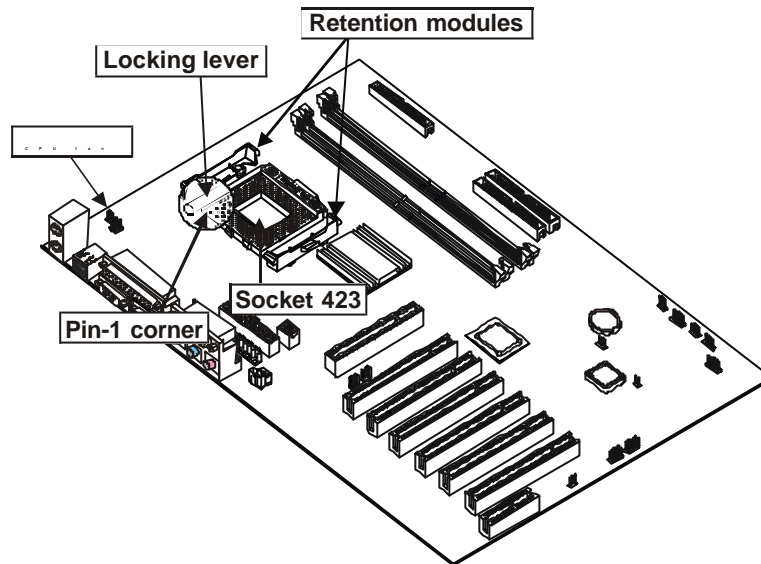
1. Use the upper PS/2 port to connect a PS/2 pointing device. Use the lower PS/2 port to connect a PS/2 keyboard.
2. Use the USB ports to connect USB devices.
3. Use LPT1 to connect printers or other parallel communications devices.
4. Use the COM ports to connect serial devices such as mice or fax/modems. 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.

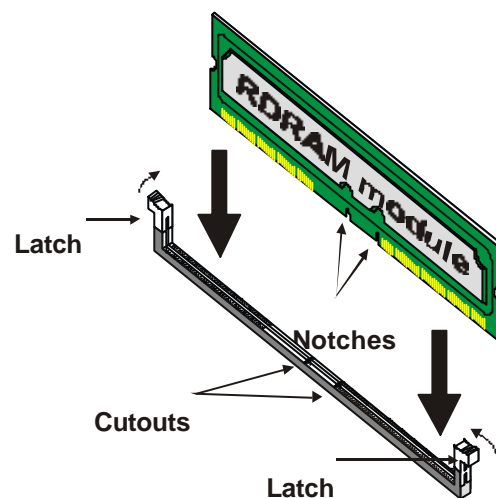
Installing Memory Modules

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

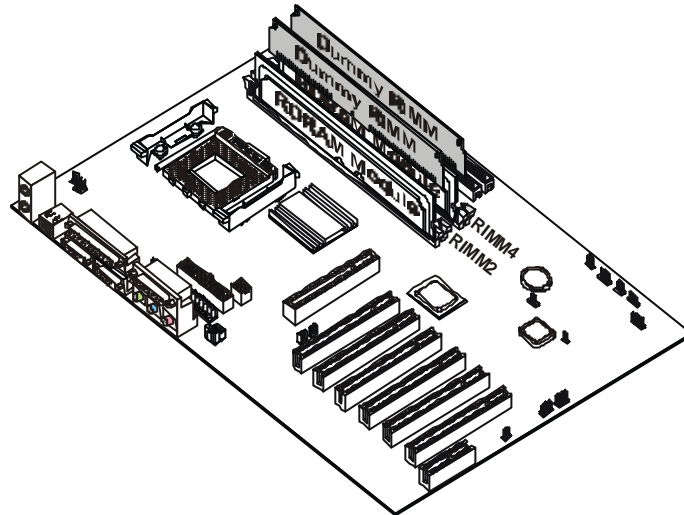
The mainboard has four RIMM (Rambus DIMM) slots that accommodate up to 2 GB of memory. You can only install the memory modules in pairs; therefore, you must install at least two RIMM modules. The dummy Rambus DRAM modules (C-RIMM) must be inserted in unpopulated slots.

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.


- After installing your RIMM modules, insert the C-RIMM modules in the unoccupied slots:



Jumper Settings

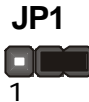
Jumper JBAT1 – enables you to clear the BIOS:

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

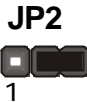
Jumper	Type	Description	Setting (default)
JBAT1	3 pin	Clear CMOS	<div> 1-2: Normal 2-3: Clear </div> <div> JBAT1 1  </div>

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 on-board audio codec	1-2: Enable 2-3: Disable

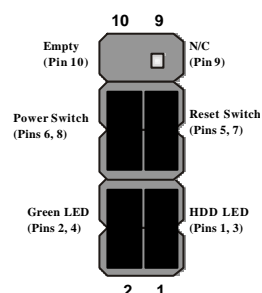


JP12

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

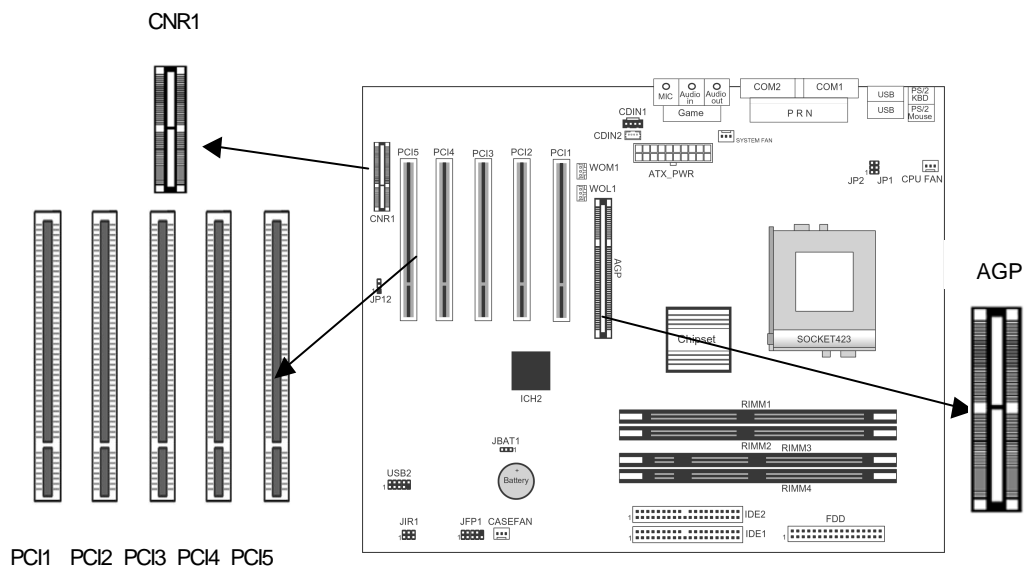
PCI slots are used to install expansion cards that have the 32-bit PCI interface.

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.



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

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.

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 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 CMOS 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) : Tue Oct 24, 2000									
Time (hh/mm/ss) : 14:26:53									
	Type	Size	Cyln	Head	WPcom	Sec	Mode	Mode	Mode
Pri Master	: Auto								off
Pri Slave	: Auto								off
Sec Master	: Auto								
Sec Slave	: Auto								
Floppy Drive A : 1.44 MB 3 1/2"									
Floppy Drive B : Not Installed									
Month : Jan – Dec								ESC : Exit	
Day : 01 – 31								↑↓ : Select Item	
Year : 1901 – 2099								PUPD/+/- : Modify	
								(Shift)F2 : Color	
								F3 : Detect All HDD	

Date & Time	Use these items to set up system date and time
Pri Master	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 (Size, Cyls, etc.) manually. If you have a CD-ROM drive, select the setting <i>CDROM</i> . If you have an ATAPI device with removable media (e.g. a ZIP drive or an LS-120), select <i>Floptical</i> .
Pri Slave	
Sec Master	
Sec Slave	
Floppy Drive A	Use these items to set up size and capacity of the floppy diskette drive(s) installed in the system.
Floppy Drive B	

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	
1 st Boot Device	IDE-0	
2 nd Boot Device	Floppy	
3 rd 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 F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
L1 Cache	Enabled	
L2 Cache	Enabled	
Cache Bus ECC	Disabled	
System BIOS Cacheable	Enabled	
Video BIOS Cacheable	Disabled	
Auto detect PCI Clock	Disabled	
CLK Spread Spectrum	Disabled	

Quick Boot	If you enable this item, the system starts up more quickly by elimination some of the power on test routines.
1st Boot Device	Use these items to determine the device order the computer uses to look for an operating system to load at start-up time.
2nd Boot Device	
3rd Boot Device	
Try Other Boot Device	If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first two locations.
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 (<i>Setup</i>) or required both at start-up and to enter the Setup Utility (<i>Always</i>).
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 cached to main memory for faster execution.
Video BIOS Cacheable	If you enable this item, a segment of the system BIOS will be cached 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	<div>ESC : Quit - - - ® : Select Item</div> <div>F1 : Help PU/PD/+/- : Modify</div> <div>F5 : Old Values (Shift)F2 : Color</div> <div>F6 : Load BIOS Defaults</div> <div>F7 : Load Setup Defaults</div>
ACPI Aware O/S	Yes	
Standby Time Out	Disabled	
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	
Stroke keys selected	N/A	
Resume by Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
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.
Standby Time Out	This sets the timeout for Standby mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Standby mode.
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 Fax/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 resume if there is an incoming call on the Fax/Modem. 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 Fax/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 if there is an incoming call on the Fax/Modem. 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	ESC : Quit - - - ® : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
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	

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	
Parallel Port Mode	Normal	ESC : Quit - - ® : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
Parallel Port IRQ	7	
Parallel Port DMA Channel	N/A	
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 DMA	Use this item to assign a DMA channel to the parallel port.
Onboard IDE	Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.
Parallel Port IRQ	Use this item to assign IRQ 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		
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CPU BRAND	INTEL	
CPU Type	Pentium 4	
CPU Speed	1.7 GHz	
CPU Ratio	17.0x	
CPU Frequency	100 MHz	
CPU VCORE	+1.680V	
		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 Volt- age/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	
CPU Fan Speed	4655 RPM	
VBAT	+ 3,392V	ESC : Quit - - - ® : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults
+ 3,300V	+ 3,328V	
+ 5.000V VCC	+ 4,976V	
-- 5,000V	- 5,292V	
--12,000V	-11,890V	
+ 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.

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

Using the Mainboard Software

About the Software CD-ROM

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.

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

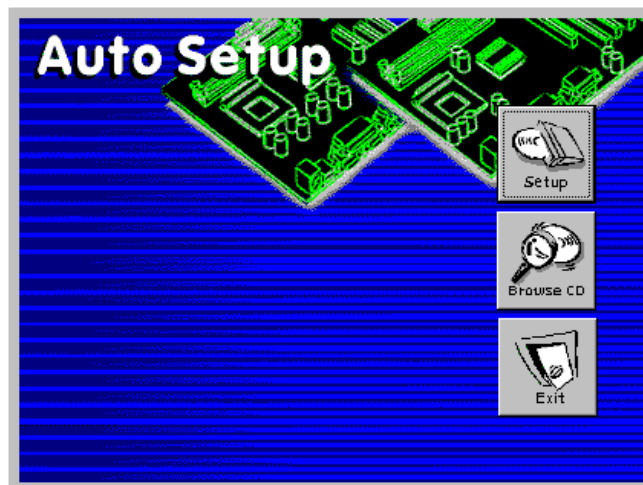
Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

Auto-installing under Windows 98

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your mainboard.

Note: If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to Utility Folder Installation Notes later in this chapter.

The support software CD-ROM disc loads automatically under Windows 98. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



Note: If the opening screen doesn't appear, double-click the file "setup.exe" in the root directory.

Setup

Click the Setup button to run the software installation program. Select from the menu which software you want to install.

Browse CD

The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.

Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly.

Some software is installed in separate folders for different operating systems, such as DOS, WIN NT, or WIN98/95. Always go to the correct folder for the kind of OS you are using.

To install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.

Exit

The Exit button closes the Auto Setup window.

Running Setup

Follow these instructions to install device drivers and software for the mainboard:

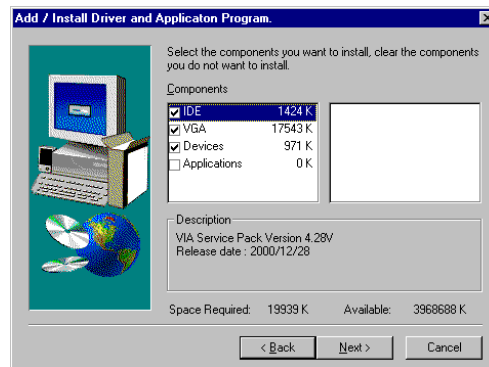
1. Click **Setup**. The installation program begins:



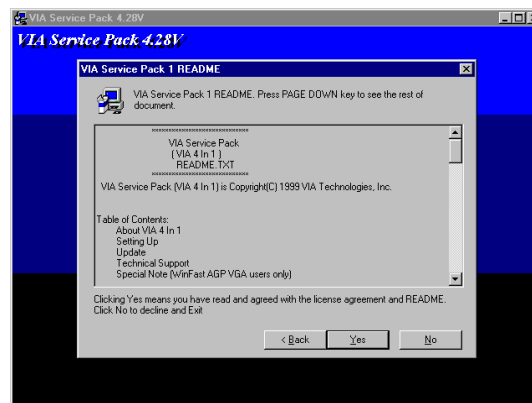
Note: The following screens are examples only. The screens and driver lists will be different according to the mainboard you are installing.

The mainboard identification is located in the upper left-hand corner.

2. Click **Next**. The following screen appears:



3. Check the box next to the items you want to install. The default options are recommended.
4. Click **Next** run the Installation Wizard. An item installation screen appears:



5. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Drivers Installation

Follow these instructions to install device drivers and software for the mainboard:

Audio Drivers and Software

Most of the sub-folders in this folder are empty, with a short README file giving directions to alternate folders for the appropriate software.

Installation for Windows 2000/98/98SE/ME/95

To install the audio drivers, go the directory \INTEL\REALTEK-CODEC\; then run SETUP.EXE.

Installation for Windows NT4.0

1. Click Start.
2. Click Settings and then click Control Panel.
3. Double-click the Multimedia icon.
4. Select the Devices tab.
5. Click Add.
6. Select the item "Unlisted or Updated Driver" in the List of Drivers in the list box and then specify the path to the PCI audio NT drivers (\INTEL\REALTEK-CODEC\NT4).
7. Select "Avance Logic, Inc. AC'97" and click OK.
8. Choose the proper I/O or click OK for the default setting. Setup installs the drivers and software.
9. Restart the Windows NT system when prompted.

INF Files

This folder has software and drivers for the IDE that is integrated on this mainboard. Drivers are provided for Windows 2000/98/98SE/ME/95 and Windows NT.

Installation for Windows 2000/98/98SE/ME/95

To install the IDE drivers, go to the directory \INTEL\INST\; then run SETUP.EXE to install the IDE driver for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the users. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

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

Award Flash Memory Utility

This utility lets you erase the system BIOS stored on a Flash Memory chip on the mainboard, 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

The PC-CILLIN software program provides anti-virus protection for your system. This program is available for Windows 2000/ME/98SE and Windows NT. Be sure to check the e-adme.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.

MediaRing Talk – Telephony Software

To install the MediaRing Talk voice modem software for the built-in modem, go to the directory \UTILITY\MEDIARING TALK, then run MRTALK-SETUP72.EXE to install the application software.

Super Voice – Fax/Modem Software

To install the Super Voice voice, fax, data communication application for use with the built-in fax/modem, go the directory \UTILITY\SUPER_VOICE, then run PICSHELL.EXE to in-

stall the application software.

CD Ghost

The CD Ghost software enables you to create a virtual cabinet of CD-ROM drives on your system to help you categorize and organize your CD collection. A user-friendly interface assists you in quickly creating images of both CDs and DVDs onto your system. To install the software, run SETUP.EXE from the following directory:

\UTILITY\CDGHOST\ENG\CDGHOST

Recovery Genius

The Recovery Genius software program is an innovative windows application system that protects your Hard Disk Drive from virus intrusion, accidental deletions and from system corruption. To install the Recovery Genius software program run SETUP.EXE from the following directory:

\UTILITY\
RECOVERY GENIUS\ENG\RECOVERYGENIUS

Language Genius

The Language Genius is a software –based product that helps you to learn new languages. To install the Language Genius software program run SETUP.EXE from the following directory:

\UTILITY\
LANGUAGE GENIUS\ENG\LANGUAGEGENIUS

PageABC

The PageABC application software enables you to create your very own home page. To install the PageABC, go to the directory \UTILITYPageABC, and then run SETUP.EXE to install the application software.

WinDVD (optional)

Go to the directory \UTILITY\WINDVD; then run SETUP.EXE to install the application software. The WinDVD software is not free. Before you install, you need to register and get the serial number first.