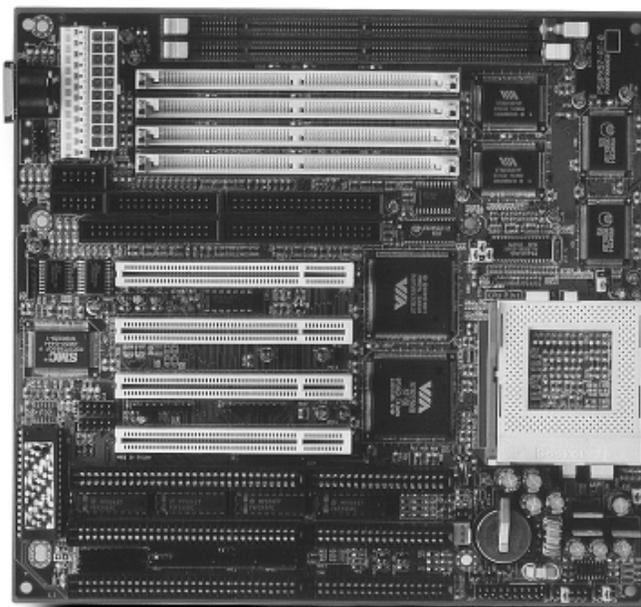




P5VPX97-AT Quick Installation Manual

Viking II

- Check List
- Table of Contents
- Features
- Specifications
- Jumper Settings
- Installation Guide
- BIOS Features and Setup



Version 1.0

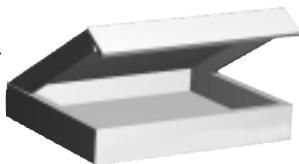


Hardware Check List P5VPX97-AT

Check List

Before You Begin...

Our ISO9001/ISO14000 facilities insure one of the most accurate packaging in the industry. For your protection, please check off the contents listed below. If you are missing any of the listed items, please contact your distributor immediately.



Packaging

A



Driver / Software Diskettes

B



Installation Manual

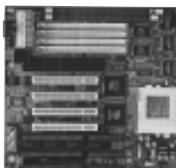
Contents:

A (1) Driver - Software - PDF Manual Diskette
(All necessary drivers and software, are included on the diskettes for your convenience.)

B (1) Installation Manual (This one)

C (1) Viking II (P5VPX97-AT) System Board

C



Viking II System Board

D



40-Pin IDE Ribbon Cable

D (1) - 40-Pin IDE Ribbon Cable (Internal connection to your IDE devices)

E (1) - 34-Pin Floppy Ribbon Cable (Internal connection to your floppy disk drives)



34-Pin Floppy Ribbon Cable

F (1) COM1-LPT1 Cable Assembly with Bracket (Provides COM1 and LPT1 connections to the back of your computer chassis)



COM1 - LPT1 Cable Assembly

G (1) PS/2 - COM2 Cable Assembly with Bracket (Provides PS/2 and COM2 connections to the back of your computer chassis)



PS/2 - COM2 Cable Assembly

H (1) USB Cable Assembly with Bracket (Provides 2 USB connections to the back of your computer chassis) **This item is optional and not included.**



USB Cable Assembly (Optional)



List

Table of Contents

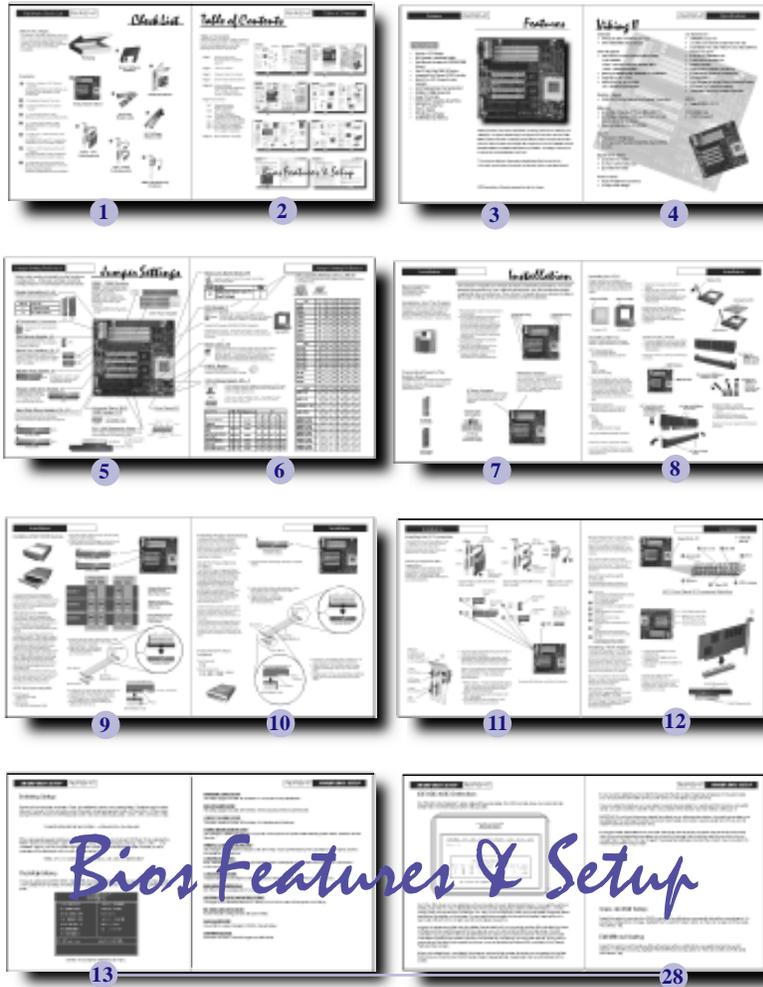
P5VPX97-AT

Table of Contents

Table of Contents

Advanced users may skip to pages 5 and 6 for jumper setting information. For beginners, we recommend reading each section and following each section step by step.

- Page 1** Packing Information
All components included in your kit.
- Page 2** Table of Contents
- Page 3** Features About Your Board
- Page 4** System Board Specifications
- Page 5-6** Jumper Settings
Connector Header Definitions
CPU, Voltage, Jumper Pinouts
Jumper Location Definition
- Page 7-12** Installation
 - Pg.7 Chassis Mounting
 - Power Connection
 - Pg.8 CPU Installation
 - Memory Installation
 - Pg.9 ATAPI Device Installation
(Hard Disk Drive & CD-ROM)
 - Pg.10 Floppy Disk Drive Installation
 - Pg.11 I/O Connector Installation
 - Pg.12 Front Panel I/O Connection
VGA Adapter Installation
- Page 13-** BIOS Features and Setup

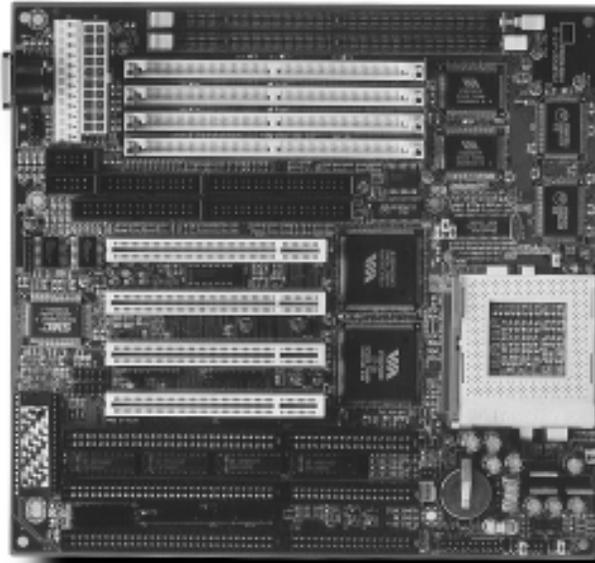


Bios Features & Setup

Features

FEATURES

- Socket-7 CPU Design
- BUS Speeds at 50/55/60/66/75MHz
- Fast Memory Access with SDRAM DIMM Support.
- Fast I/O with Ultra DMA 33 Protocol
- Integrated Dual Channel EIDE Controller
- Support for Both AT or ATX Power Supplies
- 512K Pipe lined Burst Cache Standard
- SIMMs or DIMMs Supported
- Super I/O controller
- 65535 UART Compatible Serial Ports
- EPP/ECP Parallel Port
- USB via Header
- PS/2 Mouse via Header.
- 256MB Maximum Memory



EFA Corporation of America is dedicated to offer performance, reliability, and flexibility in our system board designs. Designed and manufactured at our ISO 9001 compliant facilities, the Viking II system board offers a competitive socket-7 solution with the latest technologies. With support for the Ultra DMA 33 Protocol, SDRAM DIMMs, and flexible BUS speeds up to 75MHz, the Viking II offers all the amenities of a complete Socket-7 solution.

This quick installation guide provides detailed specifications and all the information pertaining to the use and configuration of your new system board.

EFA Corporation of America reserves the right to change the specifications and/or features of the Viking-II System Board. Please look for the updates at www.efacorp.com.



Viking II

Chipset

- VIA Apollo 580 VPX/97 Core Logic
- VIA VT82C586B South Bridge

CPU Support

- Intel Pentium P54C/P54CS/P55CS/P55C up to 233MHz
 - P54C: 100/120/133/150/166/200 MHz
 - P55C: 166/200/233 MHz
- IBM / Cyrix 6x86/6x86L/6x86MX up to PR233
- Cyrix MII up to PR300
- AMD K5/K6 up to 233 MHz
 - K6: 166/200/233/266/300 MHz

System Speed

- 50/55/60/66/75 MHz System Bus Speeds Supported

Memory

- (4) SIMMs 2 Banks of 72-pin (5V EDO/FP)
- (2) DIMMs 2 Banks of 168-pin for Sync or EDO DRAM (3.3V 64-Bit Wide)
- Maximum Memory Up To 256MB

Cache

- Internal (L1) Write Back
- External (L2) Pipe-line Burst Write Back SRAM (512K)

Expansion Slots

- (4) 32-Bit PCI Slots
- (3) 16-Bit ISA Slots
- (1) PCI / ISA Shared Slot

Form Factor

- Baby AT (220mm x 230mm)
- 4-Layer PCB Design

On Board I/O

- SMC669 Super I/O
- Local Bus Enhanced Dual-Channel IDE
- Bus Master PCI IDE / Mode 4 and Ultra DMA 33 Protocol Support
- 2 Serial I/O COMM Ports.
- 1 ECP/EPP Parallel Port
- FDD Controller
- SIR Function Header (Optional)
- 2 USB Ports (Optional USB Cable)
- AT Keyboard
- PS/2 Mouse (Optional Cable Included)

Power

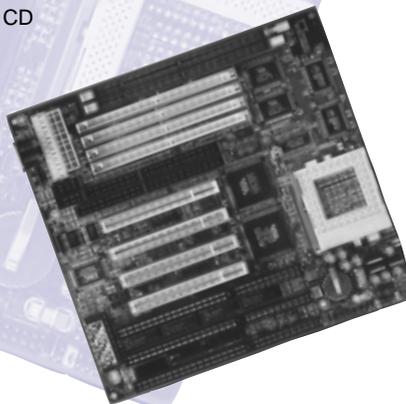
- AT and ATX Power Connectors
- Integrated Switching Voltage Regulator

BIOS

- Award BIOS 4.51PG

Compliances

- PC97 Compliant
- DOC Compliant
- CD



Jumper Setting Reference P5VPX97-AT

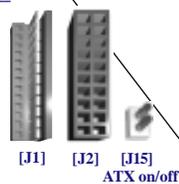
Jumper Settings

Refer to this section for details on the hardware configuration. All jumper settings should be configured prior to installing the system board.

Power Connector J1, J2, J15

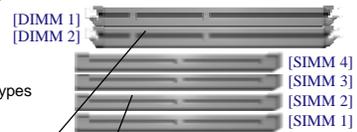
Both an AT and ATX type of power supply may be used with this system board. If using an ATX power supply, you must trigger the power on/off via shorting J15

JUMPER	FUNCTION
J1	AT Power Connector
J2	ATX Power Connector



SIMM - DIMM Sockets

SIMMS - must be installed in pairs. 72-pin, 70ns or faster, EDO or F.P. RAM types supported.
DIMMS - may be installed one piece at a time. 168-pin 3.3Volt, unbuffered SDRAM or EDO RAM types supported.
 * DIMMs and SIMMs may not be used simultaneously due to the difference in voltage.



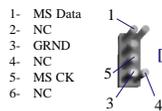
CPU Fan Header

AT Keyboard Connector

Connect an AT type keyboard here.

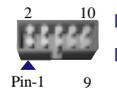
PS2 Mouse Header J5

PS2 or BUS mouse header. Connect the PS2 mouse bracket. The connector is keyed for alignment.



Serial Port Headers J6, J7

Communication ports 1 [J6] and 2 [J7] (COM1, COM2). Used for mice, external modems, and other input / output devices. 16550 UART compatible.



Parallel Port Header J8

Parallel port 1. (LPT1). Used to connect to printers and other parallel devices.



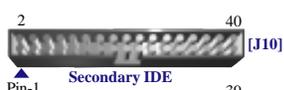
Floppy Disk Drive Header J9

Floppy disk drive controller. Used to connect 3-1/2" and 5-1/4" floppy drives and some backup tape devices.



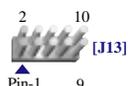
Hard Disk Drive Header J10, J11

Dual channel IDE controller. Support for Ultra DMA 33 Protocol. Primary has priority over the secondary. Up to 2 devices per channel may be connected.



Universal Serial BUS (USB) Header J13

USB header for the optional USB Cable.



PCI / ISA Expansion Slots

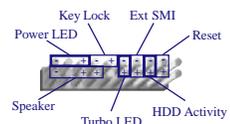
4PCI / 3ISA / 1 Shared PCI-ISA expansion slots are available for your expansion cards.

**For best performance, use PCI cards when possible.



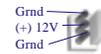
Front Panel I/O J17

Connection to your chassis' front panel display and controls.



CPU Fan Header J16

Connection for your 3-pin CPU cooling fan.



P5VPX97-AT Jumper Setting Reference

Pipe-line Burst Mode JP4

Use this mode for Cyrix CPUs only. For all other CPUs set to default

Jumper	Function	Setting
JP4	Pipelined Burst Mode on for Cyrix CPUs	1-2
	Other CPUs (Default)	2-3

CPU Socket 7

CPU types supported

Intel - Pentium /54C /54CS /P55C up to 233MHz
IBM / Cyrix - 6x86 /6x86L /6x86MX up to PR233 / MII 300MHz
AMD - K5 / K6 166MHz / 200MHz / 233MHz / 266MHz / 300MHz

Variable BUS speeds of 50/55/60/66/75MHz Supported

Installing the processor: Swing the locking arm on the socket up, look for the indentation on one of the corners of the CPU. Insert straight down then lock the arm back to its place.



CPU Socket 7

BIOS Clear J14

Set to pins 1-2 for normal operation. In the event that your computer does not boot after a BIOS adjustment, you may clear the BIOS settings back to factory defaults. To clear your CMOS, power down, short pins 2-3 for 2-5 seconds, then replace the jumper back to pins 1-2. Reboot and factory default BIOS settings will be invoked.

CMOS Battery

3 Volt Lithium Battery [CR2032]
 Replace if BIOS does not keep settings.

CPU Voltage Select JP5 - 7

CPUs require specific voltages according to the CPU type. When possible, please refer to the CPU manufacturer for correct voltage requirements

***There are 2 AMD K6 233MHz CPUs. One requires 2.2Volts, and the other 3.2Volts. Please verify your AMD K6 233MHz CPU's voltage requirements before configuring your voltage settings.

CPU TYPE	JP5	JP6	Voltage Core	JP7				
				A	B	C	D	E
AMD K6 (266,300MHz)	2-3	2-3	2.2Volt	OFF	ON	OFF	OFF	OFF
Reserved	*	*	2.5Volt	ON	OFF	ON	OFF	OFF
Cyrix MX (266MHz)	2-3	2-3	2.7Volt	ON	ON	ON	OFF	OFF
Pentium MMX/Cyrix 6x86	2-3	2-3	2.8Volt	OFF	OFF	OFF	ON	OFF
AMD K6 (166-200MHz) Cyrix 6x86, Cyrix MII (300MHz)	2-3	2-3	2.9volt	ON	OFF	OFF	ON	OFF
AMD K6 (233MHz)	2-3	2-3	3.2Volt	OFF	OFF	ON	ON	OFF
Intel Pentium	1-2	1-2	3.3Volt	ON	OFF	ON	ON	OFF
Cyrix 6x86 / AMD K5	1-2	1-2	3.5Volt	ON	ON	ON	ON	OFF

CPU Jumper Setting JP1-3, JP8-10

Find the CPU manufacturer then configure the jumpers according to the tables below.



Intel	JP1	JP2	JP3	JP8	JP9	JP10
75MHz	2-3	2-3	2-3	OFF	OFF	OFF
90MHz	1-2	2-3	2-3	OFF	OFF	OFF
120MHz	1-2	2-3	2-3	ON	OFF	OFF
150MHz	1-2	2-3	2-3	ON	ON	OFF
100MHz	2-3	1-2	2-3	OFF	OFF	OFF
133MHz	2-3	1-2	2-3	ON	OFF	OFF
166MHz	2-3	1-2	2-3	ON	ON	OFF
200MHz	2-3	1-2	2-3	OFF	ON	OFF
233MHz	2-3	1-2	2-3	OFF	OFF	OFF

AMD	JP1	JP2	JP3	JP8	JP9	JP10
K5-PR90	1-2	2-3	2-3	OFF	OFF	OFF
K5-PR100	2-3	1-2	2-3	OFF	OFF	OFF
K5-PR120	1-2	2-3	2-3	OFF	OFF	OFF
K5-PR133	2-3	1-2	2-3	OFF	OFF	OFF
K5-PR150	1-2	2-3	2-3	ON	ON	OFF
K5-PR166	2-3	1-2	2-3	ON	ON	OFF
K6-166	2-3	1-2	2-3	ON	ON	OFF
K6-200	2-3	1-2	2-3	OFF	ON	OFF
K6-233	2-3	1-2	2-3	OFF	OFF	OFF
K6-266	2-3	1-2	2-3	ON	OFF	ON
K6-300	2-3	1-2	2-3	ON	ON	ON

CYRIX	JP1	JP2	JP3	JP8	JP9	JP10
6x86-P133+	2-3	2-3	1-2	ON	OFF	OFF
6x86-P150+	1-2	2-3	2-3	ON	OFF	OFF
6x86/6x86L-P166+	2-3	1-2	2-3	ON	OFF	OFF
6x86L-P200+	1-2	2-3	1-2	ON	OFF	OFF
6x86MX-PR166 60MHz BUS 2.5x	1-2	2-3	2-3	ON	ON	OFF
6x86MX-PR166 66MHz BUS 2.0x	2-3	1-2	2-3	ON	OFF	OFF
6x86MX-PR200 66MHz BUS 2.5x	2-3	1-2	2-3	ON	ON	OFF
6x86MX-PR200 75MHz BUS 2.0x	1-2	2-3	1-2	ON	OFF	OFF
6x86MX-PR233 75MHz BUS 2.5x	1-2	2-3	1-2	ON	ON	OFF
6x86MII PR300 75MHz BUS 3.0x	1-2	2-3	1-2	OFF	ON	OFF



Installation

P5VPX97-AT

Installation

Recommended Tools

Phillips Screw Driver
Grounding Wrist Strap
Needle Nose Pliers

Installation into The Chassis

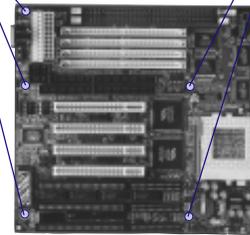
Every chassis will have its own instructions for installation. Whenever possible, refer to the manufacturer's instructions. Provided is a generic installation procedure for the Viking II installation. You will need an AT type of chassis.



1. Plug the power supply of your chassis to the wall outlet.
2. Anchor the grounding wrist strap to a non-painted metal surface of the chassis and wear the wrist strap at all times while handling the system board. If you don't have a grounding strap, touch a non-painted surface of the chassis each time before handling the system board.
3. Locate the mounting hole positions of the system board.
4. Align the mounting position of your chassis to the system board.
5. Mount the system board on to the chassis using the chassis manufacturer's supplied hardware.

Chassis Mounting Positions

Chassis Mounting Positions



Connecting Power to The System Board

Two different power connectors are supplied for flexibility. You may use either one but not both at the same time. An AT power supply is preferred if possible.



AT Power Connector



ATX Power Connector



AT Power Connector

AT Power Connector J1

An AT power connector comes in pairs. When connecting to the system board make sure the black wires are kept together.

Keep the black wires together



AT Power Connector from the power supply.

ATX Power Connector J2

An ATX power connector is keyed on the connector and its header so they mate only one possible way. When using an ATX power supply however, J15 must be connected to a momentary power switch to trigger the on/off function of an ATX power supply.

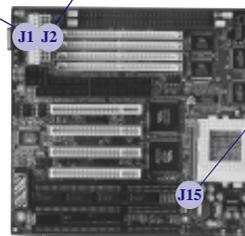


ATX Power Connector



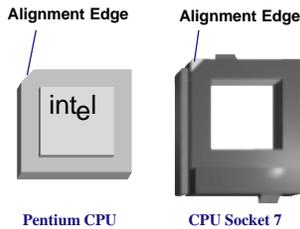
[J15]

ATX on/off
Connect to your power switch in the front of your ATX momentary power switch.



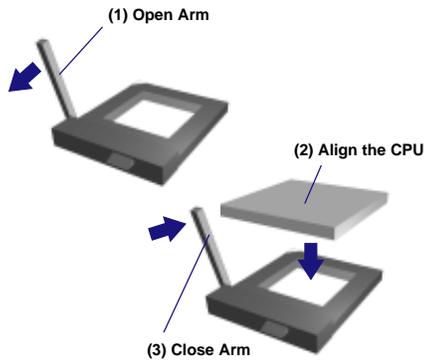
Installing the CPU

Please make sure to configure your system board for the correct BUS speed, CPU frequency, and CPU voltage settings. Refer to the "Jumper Setting" Section for details.



1. Open the locking arm of the CPU socket.
2. Align the CPU to the socket then insert pressing firmly into the socket.
3. Make sure the CPU is seated firmly into the socket then close the locking arm of the socket.

Most Pentium Class CPUs require a cooling fan and heat sink for appropriate operating temperature requirements. Please refer to the cooling fan manufacturer for details on installing the cooling fan.



Installing Memory

SIMMs: Single Inline Memory Modules
DIMMs: Dual Inline Memory Modules

SIMM types supported:

- F.P. (Fast Page) DRAM
- EDO (Extended Data Out) DRAM

Specs:

- 5 Volt
- 72-Pin
- 70ns or faster
- Parity or non parity

When installing SIMMs:

- ** Must be installed in pairs. Each pair must be of equal size, speed, and type.
- ** The identical SIMM types must occupy SIMM sockets 1&2 and/or 3&4 but not in any other combinations. SIMM 1&2 and 3&4 make up a memory bank. Each bank must have the same memory type.

DIMM types supported:

- EDO (Extended Data Out) DRAM
- SDRAM (Synchronous) DRAM

Specs:

- 3.3Volt
- 168-Pin
- Unbuffered
- ECC Supported Via Chipset

**May be installed one DIMM at a time.

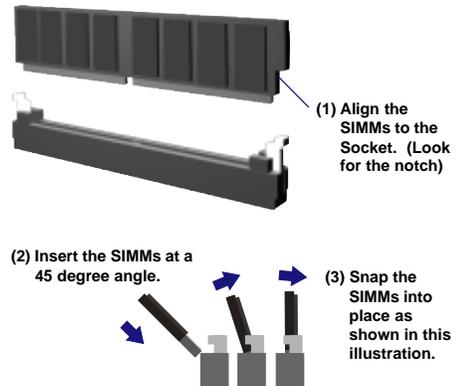
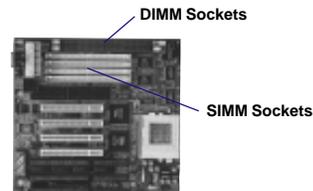
Maximum memory capacity is 256MB.

Due to the voltage difference, we strongly recommend not to use SIMMs and DIMMs at the same time.

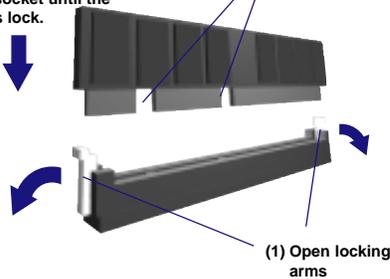
SIMM INSTALLATION

1. Locate the alignment notch of the SIMM
2. Insert the SIMMs at a 45 degree angle
3. Snap the SIMMs into place as shown in the illustration.

Maximum memory capacity of the Viking II is 256MB.



- (3) Press firmly down 90 degrees on to the socket until the arms lock.
- (2) Align the DIMM to the socket.



DIMM INSTALLATION

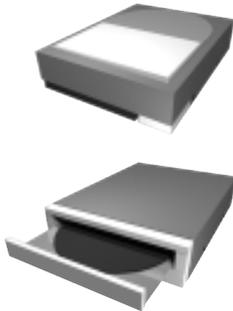
1. Open the locking levers on the DIMM socket.
2. Align the DIMM to the socket.
3. Press firmly down on the DIMM

Maximum memory capacity of the Viking II is 256MB.



Installation P5VPX97-AT

Installing ATAPI EIDE Devices.



The following instructions are generic installation procedures for installing an ATAPI EIDE device. If you have instructions that came with your ATAPI devices, please refer to it for more detailed instructions regarding your drive.

About Dual Channel EIDE

The P5VPX97 has an integrated dual channel EIDE controller; a primary and a secondary. Each channel may support up to 2 ATAPI EIDE devices, Hard Disk Drives, CD-ROMs or other standard ATAPI devices.

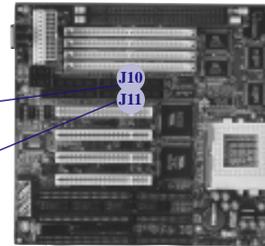
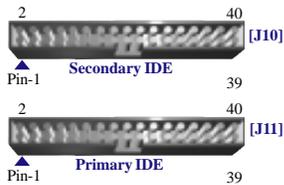
The primary channel has priority to the secondary channel. Within each channel, the two different devices are distinguished by a master and slave relationship. The master device has priority over the slave device. E.G. If you are installing two devices on a single channel, the master will be assigned a higher drive letter than the slave. (Refer to **Fig A.** on the right) When installing a CD-ROM(s) with hard disk drive(s), the hard disk drives will have priority drive letter assignments over the CD-ROM drives.

When installing more than one device per channel, you must set one as a master and the other as its slave device. These device settings are usually determined by a jumper that is on the ATAPI device.

ATAPI drive types supported:

- MODE Support:
 - Ultra DMA 33 Mode
 - Mode 4 - 0
- Maximum Size
 - 9.0 GB EIDE via System BIOS

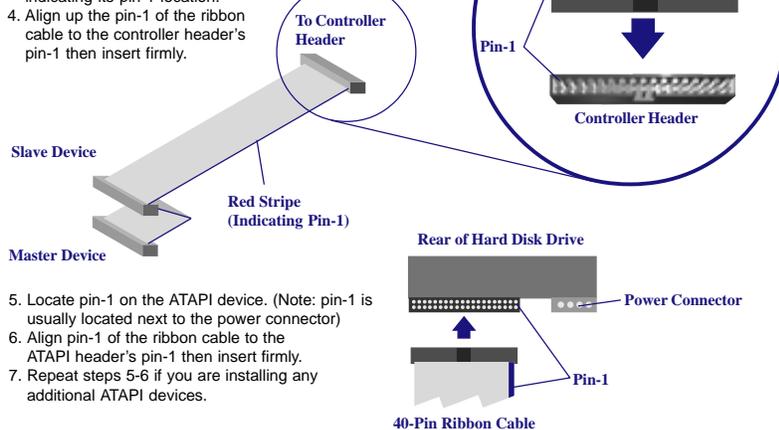
1. Note the location of the Primary and Secondary EIDE Controller Headers.
2. Study the device priority diagram below then set your devices as a slave or a master device.



	Primary EIDE		Secondary EIDE		
	Master	Slave	Master	Slave	
Scenario 1	HDD C:		HDD D:		Primary Channel has priority over the Secondary Channel
Scenario 2	HDD C:	HDD D:	HDD E:	HDD F:	Master has priority over the slave devices (HDD only)
Scenario 3	HDD C:	CD E:	CD F:	HDD D:	Hard disk Drives have priority over the CD-ROM devices

Fig A. Device Priority Diagram

3. Orient the 40-pin ribbon cable as shown. Note the location of the red stripe on the cable indicating its pin-1 location.
4. Align up the pin-1 of the ribbon cable to the controller header's pin-1 then insert firmly.



5. Locate pin-1 on the ATAPI device. (Note: pin-1 is usually located next to the power connector)
6. Align pin-1 of the ribbon cable to the ATAPI header's pin-1 then insert firmly.
7. Repeat steps 5-6 if you are installing any additional ATAPI devices.



Installing Floppy Disk Drive(s).

The following instructions are generic installation procedures for installing a floppy disk drive. If you are installing a tape backup drive that uses the floppy disk drive controller, please refer to the respective manufacturer's instructions regarding its installation.

About The Floppy Disk Drive Controller

The P5VPX97 has an integrated floppy disk drive controller. It may support up to two floppy disk drive devices of various sizes and densities. Similar to the EIDE controller the two floppy devices are distinguished by a master and slave relationship. The master device has priority over the slave device. E.G. If you are installing two devices on a single channel, the master will be assigned the reserved floppy disk drive letter "A:\\" and the slave device "B:\\".

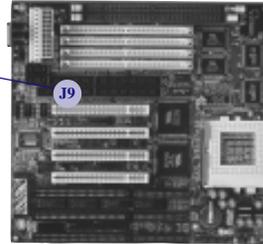
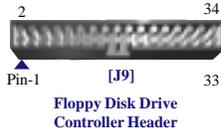
Unlike the EIDE controllers where master and slave relationship is determined via a jumper, floppy disk drive's priority is determined by the location of the drive on the cable.

When installing only one floppy disk drive, you must connect it to the master position on the ribbon cable. (Trying to set your single drive as a slave only will prevent the computer from booting from the floppy disk drive.)

Floppy Disk Drive Types Supported:

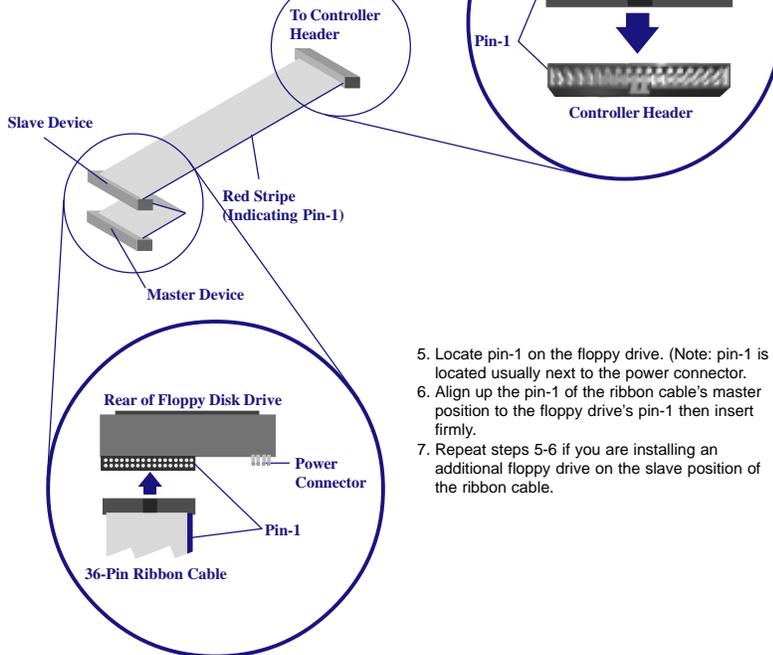
Sizes Supported:
3-1/2"
5-1/4"

Densities Supported:
3-1/2": 740K / 1.44MB / 2.88MB
5-1/4": 560K / 1.22MB



1. Note the location of the floppy disk drive controller header.

2. Orient the 36-pin ribbon cable as shown. Note the location of the red stripe on the cable indicating its pin-1 location.
4. Align pin-1 of the ribbon cable to the controller header's pin-1 then insert firmly.



5. Locate pin-1 on the floppy drive. (Note: pin-1 is located usually next to the power connector.
6. Align up the pin-1 of the ribbon cable's master position to the floppy drive's pin-1 then insert firmly.
7. Repeat steps 5-6 if you are installing an additional floppy drive on the slave position of the ribbon cable.



Installation

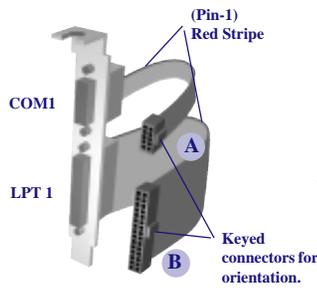
P5VPX97-AT

Installing the I/O Connectors

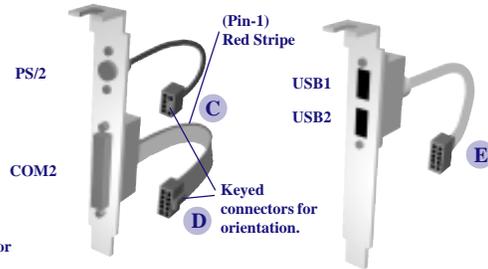
The P5VPX97 is an AT form factor. In an AT design, you must connect the serial, parallel, PS/2, and/or USB cable assemblies then attach them to the rear panel of your AT style chassis.

About The Supplied Cable Assemblies

The P5VPX97 comes with two cable assemblies. (1) Serial-Parallel and (1) Serial-PS/2. The third, USB cable assembly, is an optional item and may be purchased separately.



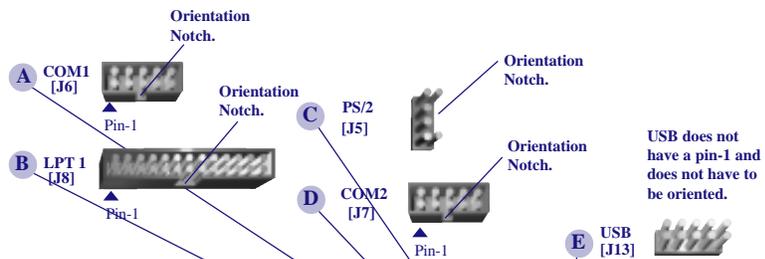
Serial (COM1) and Parallel (LPT1) cable assembly.



Serial (COM2) and PS/2 (BUS Mouse) cable assembly.



USB port cable assembly (Optional Accessory)



1. Mount the cable assemblies using a screw driver to the rear of the chassis.
2. Using the above descriptions about the cable assemblies, plug the appropriate connectors to their respective headers on the system board.

(NOTE: The connectors are keyed to prevent you from connecting them wrong. Always note the orientation of pin-1. It can be located as described below :

- ** Ribbon cables - The serial and parallel cables have a red stripe on the cable to mark Pin-1. Their connectors are also keyed to fit the header in only one direction.
- ** PS/2 Cable are keyed on the connector for Pin-1 orientation.
- ** The USB need not be keyed since it will function either way you connect it.

Refer to the Jumper Setting Section for detailed pinouts.

Location of The Headers and Their Orientation

USB A,B

(USB devices e.g. Keyboard, mouse, scanner, camera, etc. Hot pluggable)

COM1

(Serial Mouse)

PS/2 Mouse

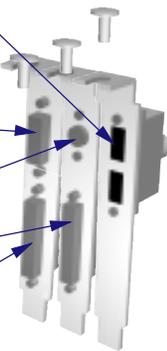
(BUS Mouse)

COM2

(Ext. modem etc.)

LPT1

(Printer)





P5VPX97-AT

Installation

Front Panel I/O Connectors

The P5VPX97 connectors to the front panel I/O are located on jumper block J17. Follow the instructions carefully for proper connections to your front panel display and controls.

Note: Some chassis may not supply connections to the Turbo LED, Ext. SMI, or the Key Lock functions. These are not essential to the normal operation and may be left out.

About The Front Panel I/O Connectors.

The P5VPX97 provides front panel I/O connections for the following functions:

- A** Key Lock
(Connection to the keyboard lock switch)
ON - Keyboard is locked out
OFF - Normal operation
- B** Power LED indicator
(On when the board is supplied power)
- C** Speaker
(Internal speaker connection)
- D** Turbo LED
(On when in turbo mode)
- E** HDD Activity
(On when there is Hard Disk Drive Activity)
- F** Reset
(Connection to the reset switch)
Shorted to invoke a hardware reset
- G** Ext. SMI
(Connection to the suspend switch)
Shorted to place the system into a suspend mode or "Green" mode.

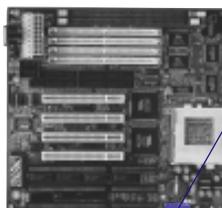
Installing a VGA Adapter

The P5VPX97 provides 3 PCI, 2 ISA, and 1 PCI/ISA expansion slots. Although other peripherals may be installed at this time, we recommend that you first start with the Video Graphics Adapter. Since other peripherals are not necessarily needed for initial setup purposes, we will only give examples of installing a VGA adapter.

Note: For installation of SCSI, Internal Modem, Audio, or any other peripherals, please refer to the respective manufacturer's instructions.

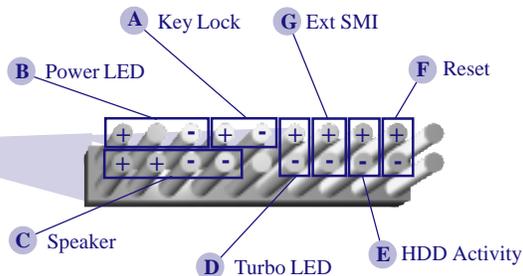
About The VGA Adapter

The P5VPX97 supports either PCI or ISA types of VGA adapters. For best performance, we recommend you to use a PCI VGA Adapter. Using an ISA adapter will reduce overall performance in a Windows environment.

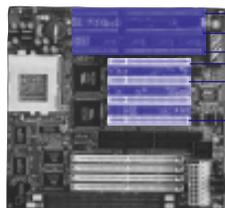


Jumper Block J17

+ Cathode
- Anode



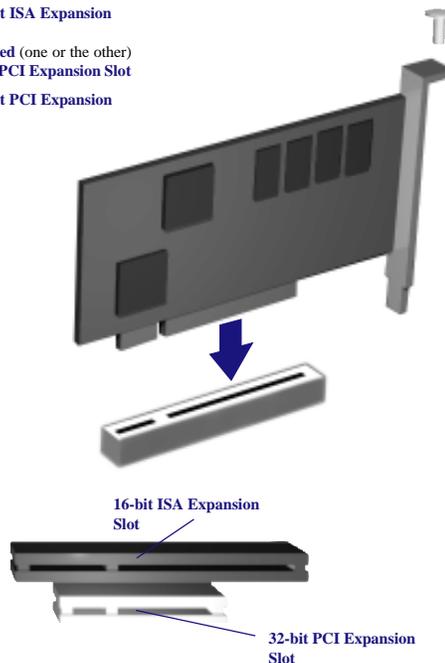
[J17] Front Panel I/O Connector Definition



- 16-bit ISA Expansion Slots
- Shared (one or the other) ISA/PCI Expansion Slot
- 32-bit PCI Expansion Slots

1. Locate an available PCI or ISA expansion slot.
2. Mount the VGA adapter on to an expansion slot.
3. Use a screw to anchor the adapter to the chassis.

You are now ready to boot the computer for the first time. Please continue to the next section to configure your BIOS (Basic Input Output System) Settings. It must be configured for booting.



AWARD BIOS SETUP

P5VPX97-AT

Entering Setup

Power on the computer and press immediately to allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS : <CTRL-ALT-ESC> OR KEY

If the message disappears before you respond, restart the system by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to,

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR TO ENTER SETUP

The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Menu will appear on the screen. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press



<Enter> to accept or enter the sub-menu.

[STANDARD CMOS SETUP](#)

This setup page includes all the items in a standard compatible BIOS.

[BIOS FEATURES SETUP](#)

This setup page includes all the items of Award special enhanced features.

[CHIPSET FEATURES SETUP](#)

This setup page includes all the items of chipset special features.

[POWER MANAGEMENT SETUP](#)

This category determines how much power consumption for system after selecting below items. Default value is Disable.

[PNP/PCI CONFIGURATION SETUP](#)

This category specifies the value (in units of PCI bus clocks) of the latency time for this PCI bus master and the IRQ level for a PCI device.

[LOAD BIOS DEFAULTS](#)

BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance.

[LOAD SETUP DEFAULTS](#)

Chipset defaults indicates the values required by the system for the maximum performance

[INTEGRATED PERIPHERALS](#)

IDE, FDD, Serial, parallel port I/O configuration.

[SUPERVISOR & USER PASSWORD SETTING](#)

Change, set, or disable password. It allows you to limit access to the system and Setup.

[IDE HDD AUTO DETECTION](#)

Automatically configure hard disk parameters.

[SAVE & EXIT SETUP](#)

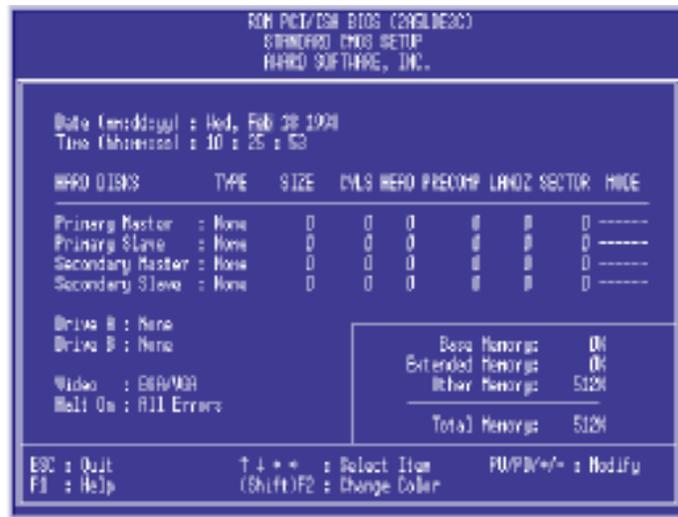
Save CMOS value changes to CMOS and exit setup.

[EXIT WITHOUT SAVE](#)

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup Menu

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



The above screen provides you with a list of options. At the bottom of this screen are the control keys for use on this screen. Take note of these keys and their respective uses.

User-configurable fields appear in a different color. If you need information on the selected field, press the <F1> key. The help menu will then appear to provide you with the information you need. The memory display at the lower right-hand side of the screen is read-only and automatically adjusts accordingly.

Date

To set the date, highlight the "Date" field and then press the page up/page down or +/- keys to set the current date. Follow the month, day and year format. Valid values for month, day and year are:

- Month: 1 to 12
- Day: 1 to 31
- Year: up to 2099

Time

To set the time, highlight the "Time" field and then press the page up/page down or +/- keys to set the current time. Follow the hour, minute and second format. Valid values for hour, minute and second are:

Hour: 00 to 23
Minute: 00 to 59
Second: 00 to 59

You can bypass the date and time prompts by creating an AUTOEXEC.BAT file. For information on how to create this file, please refer to an MS-DOS manual.

Hard Disk Drives

This field records the specifications for all non-SCSI hard disk drives installed in your system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first of which is the "master" and the second is the "slave".

Specifications for SCSI hard disks need not to be entered here since they operate using device drivers and are not supported by any the BIOS. If you install other vendor's SCSI controller card, please refer to their respective documentation's on how to install the required SCSI drivers.

To enter specifications for a hard disk drive, you must select first a "type". You can select "User" and specify the specifications yourself manually, or you can select from the provided predefined drive specifications. To select, simply press the <Page Up> or <Page Down> key to change the option listed after the drive letter.

For IDE hard disk drive setup, you can:

Use the Auto setting for detection during bootup.

Use the IDE HDD AUTO DETECTION in the main menu to automatically enter the drive specifications.

Enter the specifications yourself manually by using the "User" option.

The entries for specifying the hard disk type include CYLS (number of cylinders), HEAD (number of read/write heads), PRECOMP (write precompensation), LANDZ (landing zone), SECTOR (number of sectors) and MODE. The SIZE field automatically adjusts according to the configuration you specify, The documentation that comes with your hard disk should provide you with the information regarding the drive specifications.

The MODE entry is for IDE hard disks only, and can be ignored for MFM and ESDI drives. This entry provides three options: *Normal*, *Large*, *LBA*, or *Auto* (see below). Set MODE to the *Normal* for IDE hard disk drives smaller than 528MB; set it to *LBA* for drives over 528MB that support Logical Block Addressing (LBA) to allow larger IDE hard disks; set it to *Large* for drives over 528MB that do not support LBA. *Large* type of drive can only be used with MS-DOS and is very uncommon. Most IDE drives over 528MB support the *LBA* mode.



AWARD BIOS SETUP

P5VPX97-AT

Auto detection of hard disks on bootup

For each field: Primary Master, Primary Slave, Secondary Master, and Secondary Slave, you can select Auto under the TYPE and MODE fields. This will enable auto detection of your IDE drives during bootup. This will allow you to change your hard drives (with the power off) and then power on without having to reconfigure your hard drive type. If you use older hard drives which do not support this feature, then you must configure the hard drive in the standard method as described above by the "User" option.

NOTE: After the IDE hard disk drive information has been entered into BIOS, new IDE hard disk drives must be partitioned (such as with FDISK) and then formatted before data can be read from and write on. Primary IDE hard disk drives must have its partition set to active (also possible with FDISK).

NOTE: SETUP Defaults are noted in parenthesis next to each function heading.

Drive A/Drive B (None)

These fields record the types of floppy disk installed in your system. The available options for drives A and B are: 360KB, 5.25in.; 1.2MB, 5.25in.; 720KB, 3.5in.; 1.44MB, 3.5in.; None.

To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left-or right-arrow key.

Floppy 3 Mode Support (Disabled)

This is the Japanese standard floppy drive. The standard stores 1.2MB in a 3.5" diskette. This is normally disabled but you may choose from either: Drive A, Drive B, Both, and Disabled.

Video (EGAVGA)

Set this field to the type of video display card installed in your system. The options are: EGAVGA, Mono (for Hercules or MDA), CGA 40, and CGA 80.

If you are using a VGA or any higher resolution card, choose the "EGAVGA" option.

Halt On (All Errors)

This field determines which types of errors will cause the system to halt. Choose from: "All Errors", "No Errors", "All, But Keyboard", "All, But Diskette", and "All, But Disk/Key".

BIOS Features Setup

This "BIOS Features Setup" option consists of configuration entries that allow you to improve your system performance, or let you set up some system features according to your preference. Some entries here are required by the motherboard's design to remain in their default settings.



A section at the lower right of the screen displays the control keys you can use. Take note of these keys and their respective uses. If you need information on a particular entry, highlight it and then press the <F1> key. A pop-up help menu will appear to provide you with the information you need. To load the last set values, press the <F5> key. <F6> and <F7> load the BIOS default values and Setup default values, respectively.

NOTE: SETUP Defaults are noted in parenthesis next to each function heading.

Virus Warning (Disabled)

This field protects the boot sector and partition table of your hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate your system. This setting is recommended because conflicts with new operating systems. Installation of new operating systems require that you disable this to prevent write errors.

AWARD BIOS SETUP

P5VPX97-AT

CPU Internal Cache (Enabled)

This option allows you to enable/disable CPU internal cache.

External Cache (Enabled)

This option allows you to enable/disable CPU external cache.

Boot Sequence (A,C,SCSI)

This field determines where the system looks first for an operating system. Options are A, C, SCSI ; C, A, SCSI ; C, CDROM, A ; CDROM, C, A ; D, A, SCSI ; E, A, SCSI ; F, A, SCSI ; SCSI, A, C ; SCSI, C, A ; C only; LS/ZIP/C The setup default setting is to check first the hard disk and then the floppy drive; that is A,C,SCSI.

Swap Floppy Drive (Disabled)

When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A under DOS.

Boot Up Floppy Seek (Enabled)

When enabled, the BIOS will seek the floppy "A" drive one time.

Boot Up NumLock Status (On)

This field enables users to activate the NumberLock function upon system boot.

Typematic Rate Setting (Disabled)

When enabled, you can set the two typematic controls listed next. Setup default setting is Disabled.

Typematic Rate [Chars/Sec] (6)

This field controls the speed at which the system registers repeated keystrokes. Options range from 6 to 30 characters per second. Setup default setting is 6; other settings are 6, 8, 10, 12, 15, 20, 24 and 30.

Typematic Delay (Msec) (250ms)

This field sets the time interval for displaying the first and second characters. Four delay rate options are available: 250ms, 500ms, 750ms and 1000ms.

Security Option (Setup)

This field determines when the system prompts for the password. The default setting is System, where the system prompts for the User Password every time you boot up. The other option is Setup, where the system always boots up, and prompts for the Supervisor Password only when the Setup utility is called up. You can specify a password by using the Supervisor Password or User Password option from the main screen as explained later in this section.

OS/2 Select For DRAM > 64M (Non-OS2)

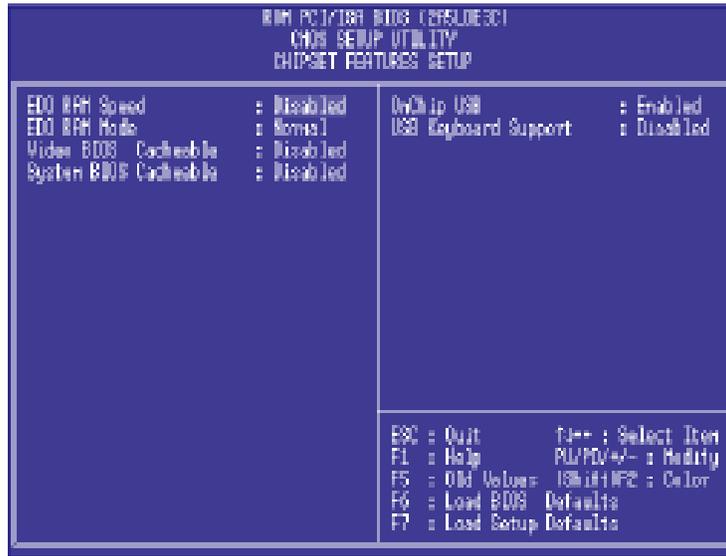
When using OS/2 operating systems with installed DRAM of greater than 64MB, you need to Enable this option otherwise leave this on the setup default of Non-OS2.

Video BIOS Shadow

It determines whether video BIOS will be copied to system RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

Chipset Features Setup

This "Chipset Features Setup" option controls the configuration of the board's chipset. Control keys for this screen are the same as for the previous screen.



DRAM Auto Configuration (70ns EDO RAM)

The default setting of *70ns EDORAM* sets the optimal timings for 70ns DRAM modules. If you are using 60ns DRAM modules, you must change this item to 60ns EDORAM.

EDO RAM Mode (Turbo)

This option allows you to choose EDO RAM Mode on Turbo/Medium/Normal/Fast Mode.

System BIOS Cacheable (Enabled)

Enabling this item allows you to cache the system BIOS to further enhance system performance.

Video BIOS Cacheable (Enabled)

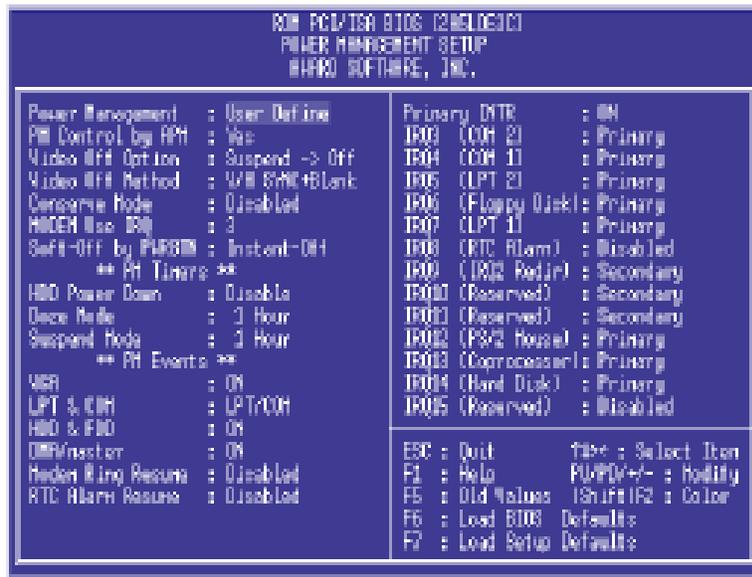
Allows the Video BIOS to be cached to allow faster execution. Leave on default setting of *Enabled* for better performance, otherwise *Disabled*.

On Chip USB (Disable)

This option allows you to enable/disable USB device.

Power Management Setup

The Power Management Setup screen enables you to control the mainboard green features. See the following screen.



Power Management (User Define)

This function allows you to set the default parameters of power-saving modes. Set to Disable to turn off power management function. Set to Use Defined to choose your own parameters.

PM Controlled by APM (Yes)

If "Max Saving" is selected, you can turn on this item, transfer power management control to APM (Advanced Power Management) and enhance power saving function. For example, stop CPU internal clock.

Video Off Option (Suspend @Off)

To turn off video monitor at which power down made.

Video Off Method (V/H SYNC + Blank)

This determines the way that monitor is off. Blank Screen writes blanks to video buffer. V/H SYNC + Blank allows BIOS to control VSYNC and HSYNC signals. This function applies only for DPMS (Display Power Management Standard) monitor. The DPMS mode uses DPMS function provided by VGA card.

MODEM Use IRQ (3)

You can set IRQs 3, 4, 5, 7 individually through modem. Activity detected from any IRQ channel will wake up the system.

Soft-Off by PWR-BTN (Instant-Off) (Only when used in conjunction with an ATX power supply)

The system can be in one of two states, one is suspend mode and the other is the Soft-Off mode. Pushing the power button for less than 4 seconds places the system into suspend mode. When the power button is pressed for more than 4 seconds, it enters the Soft-Off mode.

HDD Power Down (Disabled)

This option lets you specify the IDE HDD idle time before the device enters the power down state. This item is independent from the power states previously described in this section (Standby and Suspend).

This item lets you set the period of time after which the system enters into Doze mode. In this mode, the CPU clock slows down. The ratio is specified in the "Throttle Duty Cycle". Any activity detected returns the system to full power. The system activity (or event) is detected by monitoring the IRQ signals.

Doze Mode (1 hr)

This item lets you set the period of time after which the system enters into Doze mode. In this mode, the CPU clock slows down. The ratio is specified in the "Throttle Duty Cycle". Any activity detected returns the system to full power. The system activity (or event) is detected by monitoring the IRQ signals.

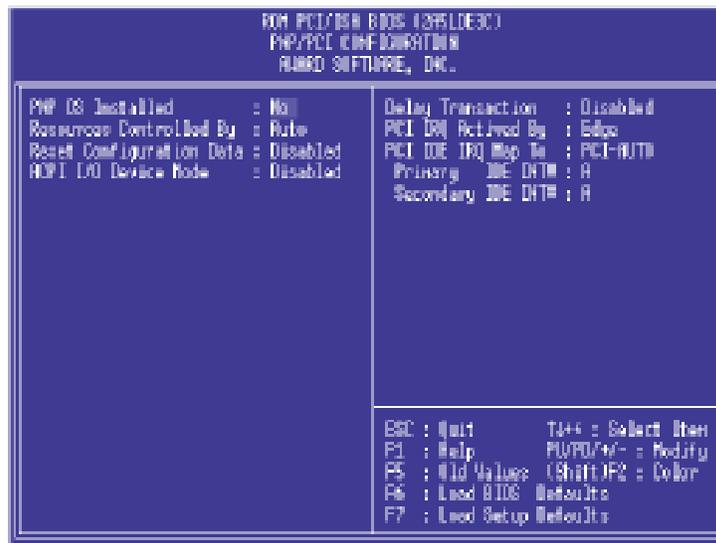
This item lets you set the period of time after which the system enters into Standby mode. In this mode, CPU clock slows down, hard disk will be shut off and the monitor power-saving feature activates. Any activity detected returns the system to full power. The system activity (or event) is detected by monitoring the IRQ signals.

Suspend Mode (1 hr)

This item lets you set the period of time after which the system enters into Suspend mode. The Suspend mode can be Power On Suspend or Suspend to Hard Drive, selected by "Suspend Mode Option".

PNP/PCI Configuration Setup

The PNP/PCI Configuration Setup allows you to configure the ISA and PCI devices installed in your system. The following screen appears if you select the option "PNP/PCI Configuration Setup" from the main menu.



PnP OS Installed (Yes)

Normally, the PnP resources are allocated by BIOS during POST (Power-On Self Test). If you are using a PnP operating system (such as Windows 95), set this item to Yes to inform BIOS to configure only the resources needed for booting (VGA/IDE or SCSI). The rest of system resources will be allocated by PnP operating system.

Resources Controlled By (Auto)

Setting this option to Manual allows you to individually assign the IRQs and DMAs to the ISA and PCI devices. Set this to Auto to enable the auto-configuration function.

Reset Configuration Data (Disabled)

In case conflict occurs after you assign the IRQs or after you configure your system, you can enable this function, allow your system to automatically reset your configuration and reassign the IRQs.

ACPI I/O Device Mode (Enabled)

This option allows you to enable/disable ACPI I/O device.

PCI IDE IRQ Map To (PCI-AUTO)

Some old PCI IDE add-on cards are not fully PnP compatible. These cards require you to specify the slot in use to enable BIOS to properly configure the PnP resources. This function allows you to select the PCI slot for any PCI IDE add-on card present in your system. Set this item to Auto to allow BIOS to automatically configure the installed PCI IDE card(s).

Primary IDE INT# (A)

Secondary IDE INT# (B)

These two items, in conjunction with item "PCI IDE IRQ Map To", specify the IRQ routing of the primary or secondary channel of the PCI IDE add-on card(not the onboard IDE). You must specify the slot in the "PCI IDE IRQ Map To", and set the PCI interrupt (INTx) here according to the interrupt connection on the card.

Delay Transaction

Leave on default setting of Disabled.

Load BIOS Defaults

This "Load BIOS Defaults" option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high performance features. To load these default settings, highlight "Load BIOS Defaults" on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

Load Setup Defaults

This "Load Setup Defaults" option allows you to load the default values to the system configuration fields. These default values are the optimized configuration settings for the system. To load these default values, highlight "Load Setup Defaults" on the main screen and then press the <Enter> key. The system displays a confirmation message on the screen. Press the <Y> key and then the <Enter> key to confirm. Press the <N> key and then the <Enter> key to abort. This feature does not affect the fields on the Standard CMOS Setup screen.

Integrated Peripherals

The following screen appears if you select the option "Integrated Peripherals" from the main menu. This option allows you to configure the I/O features.



[On-Chip Primary PCI IDE \(Enabled\)](#)

[On-Chip Secondary PCI IDE \(Enabled\)](#)

This parameter lets you enable or disable the IDE device connected to the primary/secondary IDE connector.

[IDE Primary Master PIO \(Auto\)](#)

[IDE Primary Slave PIO \(Auto\)](#)

[IDE Secondary Master PIO \(Auto\)](#)

[IDE Secondary Slave PIO \(Auto\)](#)

Setting this item to Auto activates the HDD speed auto-detect function. The PIO mode specifies the data transfer rate of HDD. For example: mode 0 data transfer rate is 3.3MB/s, mode 1 is 5.2MB/s, mode 2 is 8.3MB/s, mode 3 is 11.1MB/s and mode 4 is 16.6MB/s. If your hard disk performance becomes unstable, you may manually try the slower mode.

[IDE Primary Master UDMA \(Auto\)](#)[IDE Primary Slave UDMA \(Auto\)](#)[IDE Secondary Master UDMA \(Auto\)](#)[IDE Secondary Slave UDMA \(Auto\)](#)

This item allows you to set the Ultra DMA/33 mode supported by the hard disk drive connected to your primary/secondary IDE connector.

[Onboard FDC Controller \(Enabled\)](#)

Setting this parameter to Enabled allows you to connect your floppy disk drives to the onboard floppy disk connector instead of a separate controller card. Change the setting to Disabled if you want to use a separate controller card.

[Onboard COM Port 1 \(3F8/IRQ4\)](#)

This option specifies the first serial port address and IRQ on the motherboard.

[Onboard COM Port 2 \(2F8/IRQ3\)](#)

This option specifies the secondary serial port address and IRQ on the motherboard.

[Onboard COM Port 2 Mode \(Standard\)](#)

This option specifies the COM port operation mode as Standard, HPSIR or ASKIR.

[Onboard Print Port \(378/IRQ7\)](#)

This item controls the onboard printer port address and interrupt.

[Onboard Print Port Mode \(Normal\)](#)

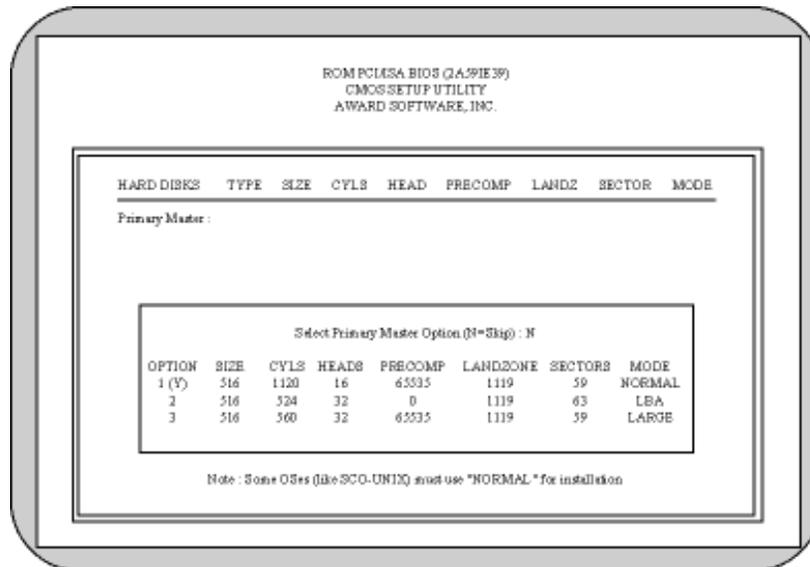
This item lets you set the parallel port mode. The mode options are Normal (Standard and Bidirectional Printer Port), EPP (Enhanced Printer Port) and ECP(Extended Printer Port). Normal is the IBM AT and PS/2 compatible mode. EPP enhances the printer port throughput by directly writing/reading data to/from printer port without latch. ECP supports DMA and RLE (Run Length Encoded) compression and decompression.

Supervisor Password and User Password

These two options set the system passwords. "Supervisor Password" sets a password that will be used to protect the system and the Setup utility; "User Password" sets a password that will be used exclusively on the system. By default, the system comes without any passwords. To specify a password, highlight the type you want and then press the <Enter> key. A password prompt appears on the screen. Taking note that the password is case sensitive, and can be up to 8 alphanumeric characters long, type in your password and then press the <Enter> key. The system confirms your password by asking you to type it again. After setting a password, the screen automatically reverts to the main screen. To implement the password protection, specify in the "Security Option" field of the BIOS Features Setup screen when the system will prompt for the password. If you want to disable either password, press the <Enter> key instead of entering a new password when the "Enter Password" prompt appears. A message confirms the password has been disabled.

IDE HDD AUTO Detection

This "IDE HDD Auto Detection" option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.



Up to four IDE drives can be detected, with parameters for each listed inside the box. To accept the optimal entries, press the <Y> key or else select from the numbers displayed under the OPTIONS field (2,1,3 in this case); to skip to the next drive, press the <N> key. If you accept the values, the parameters will appear listed beside the drive letter on the screen. The process then proceeds to the next drive letter. Pressing the <N> key to skip rather than to accept a set of parameters causes the program to enter zeros after that drive letter. Remember that if you are using another IDE controller that does not feature Enhanced IDE support for four devices, you can only install two IDE hard disk drives. Your IDE controller must support the Enhanced IDE features in order to use Drive E and Drive F. The onboard PCI IDE controller supports Enhanced IDE, with two connectors for connecting up to four IDE devices. If you want to use another controller that supports four drives, you must disable the onboard IDE controller in the Chipset Features Setup screen.

When auto-detection is completed, the program automatically enters all entries you accepted on the field for that drive in the Standard CMOS Setup screen. Skipped entries are ignored and are not entered in the screen.

If you are auto-detecting a hard disk that supports the LBA mode, three lines will appear in the parameter box. Choose the line that lists LBA for an LBA drive. Do not select Large or Normal.

The auto-detection feature can only detect one set of parameters for a particular IDE hard drive. Some IDE drives can use more than one set. This is not a problem if the drive is new and there is nothing on it.

IMPORTANT: If your hard drive was already formatted on an older previous system, incorrect parameters may be detected. You will need to enter the correct parameters manually or use low-level format if you do not need the data stored on the hard drive.

If the parameters listed differ from the ones used when the drive was formatted, the drive will not be readable. If the auto-detected parameters do not match the ones that should be used for your drive, do not accept them. Press the <N> key to reject the presented settings and enter the correct ones manually from the Standard CMOS Setup screen.

Save and Exit Setup

Select this option to save into the CMOS memory all modifications you specify during the current session. To save the configuration changes, highlight the "Save & Exit Setup" option on the main screen and then press the <Enter> key.

Exit Without Saving

Select this option to exit the Setup utility without saving the modifications you specify during the current session. To exit without saving, highlight the "Exit Without Saving" option on the main screen and then press the <Enter> key.



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