

# Overview

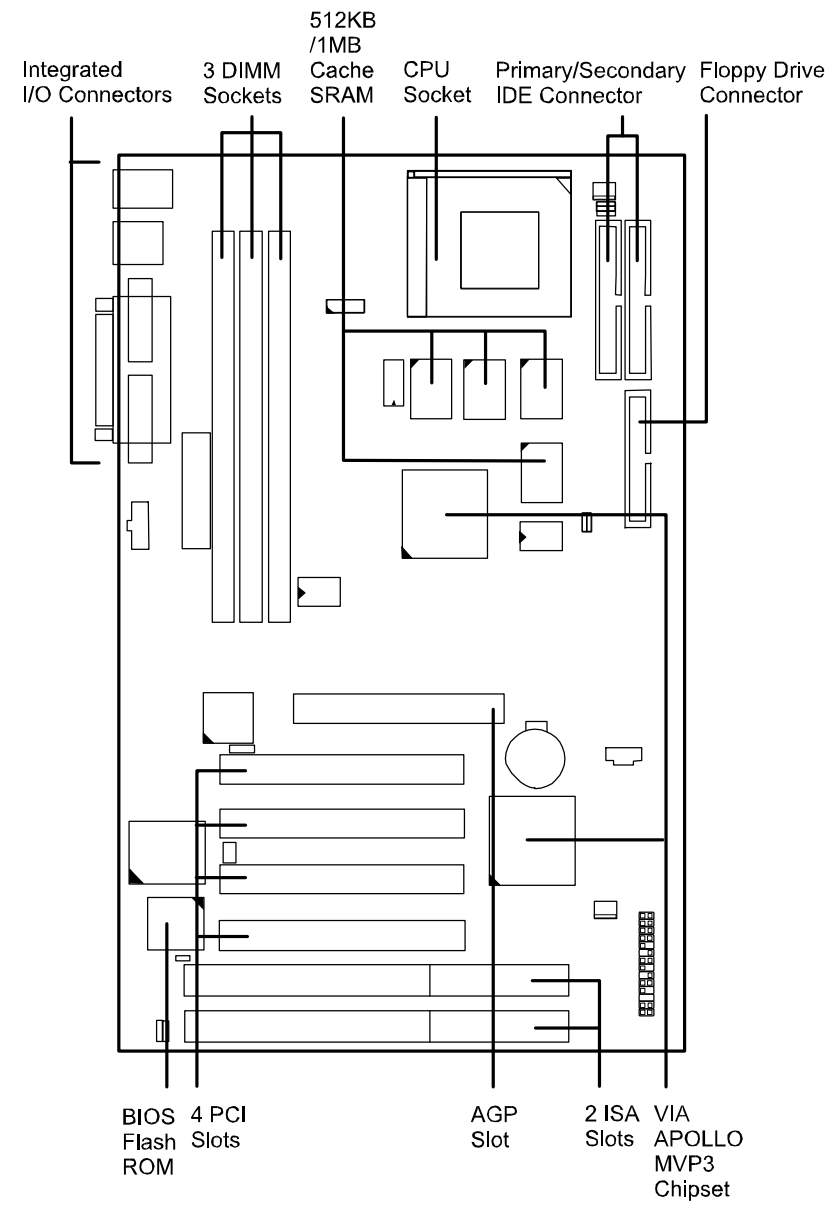
Based on the new highly-integrated VIA APOLLO MVP3 Chipset that offers 100MHz system bus operations and accepts 100MHz PC100 synchronous DRAMs, the PA-2013 combines blistering Pentium® processor performance with support for switching voltage regulator which allows the voltage from 2.0V to 3.5V intelligent diagnostic, and power management features. The new Accelerated Graphics Port (AGP) interface provides a dedicated path for memory-intensive graphics applications-delivering faster system performance and arcade-quality 2x mode 3D graphics. The PA-2013 has a versatile ATX-size platform for leading-edge PC '97 compliant systems. For the most up-to-date information and the latest FAQs and BIOS updates, visit FIC Online at [www.fic.com.tw](http://www.fic.com.tw).

## Package Checklist

Please check that your package contains all the items listed below. If you discover any item is damaged or missing, please contact your vendor.

- The PA-2013 motherboard
- This user manual
- One IDE device cable
- One floppy disk drive cable
- Software Utilities

**The PA-2013 Motherboard**



## Main Features

### ■ Easy Installation

BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, MS Windows 95/98/NT, and OS/2.

### ■ Leading Edge Chipset

VIA APOLLO MVP3 chipset with integrated DRAM and L2 cache controllers as well as support for Intel's new Dynamic Power Management Architecture (DPMA), Concurrent PCI (PCI 2.0 and 2.1), AGP 1.0 compliant, and USB.

### ■ Flexible Processor Support

Onboard 321-pin ZIF socket and switching voltage regulator support complete range of leading-edge processors:

Intel Pentium P54C 100/133/166/200MHz and MMX 166/200/233MHz;

AMD-K5-PR100 (100MHz)/PR133 (100MHz)/PR166 (116MHz)/PR200

(133MHz); AMD-K6-166/200/233/266/300, also AMD-K6-2- 300/333/350;

Cyrix 6x86-PR200+/PR166+ and 6x86L-PR200+/PR166+;

Cyrix 6x86MX-PR166/200/233/266; M II-300/333;

IBM 6x86-PR200+/PR166+ and 6x86L-PR200+/PR166+;

IBM 6x86MX-PR166/200/233/266/300/333;

IDT WinChip2-200 (200MHz); IDT WinChip-200 (200MHz) processors.

### ■ Various External Bus and CPU/Bus Frequency Ratio Support

The motherboard supports the Bus frequency of 66/68/75/83/95/100/112/124MHz

and the CPU/Bus frequency ratio of 1.5x/1.75x/2x/2.5x/3x/3.5x/4x/4.5 x/5x/5.5x by a switching voltage regulator which accepts from 1.8V to 3.5V(Please read

**Install the CPU** in Chapter 2 for more information).

### ■ Ultra-fast Level II Cache

Supports 512KB/1MB/2MB onboard Pipeline Burst Level II write-back cache.

### ■ Versatile Main Memory Support

Accepts up to 768MB DRAM in three banks by using of 8, 16, 32, 64,

128, 256MB with support for EDO and SDRAM (66/100MHz) DIMMs.

■ **ISA and PCI Expansion Slots**

Two 16-bit ISA Bus and four 32-bit PCI Bus expansion slots provide the room to install a full range of add-on cards.

■ **Onboard Accelerated Graphics Port (AGP)**

One 32-bit AGP slot supports 1x/2x AGP VGA cards for superior 3D video and graphics performance with transfer speeds up to 264MB/second under 1x transfer mode and up to 528MB/second under 2x transfer mode.

■ **Enhanced PCI Bus Master IDE Controller with Ultra DMA/33 Support**

Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that accept up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA/33 protocol which doubles data transfer rates to 33MB/sec. Standard PIO Mode 3, PIO Mode 4, and DMA Mode 2 devices are also supported.

■ **Super Multi I/O**

Integrated Winbond 83877TF Plug and Play multi-I/O chipset features two high-speed UART 16550 compatible serial ports, one EPP/ECP capable parallel port, and one FDD connector.

■ **USB Support**

Two USB ports integrated in the rear I/O panel allow convenient and high-speed Plug and Play connections to the growing number of USB compliant peripheral devices on the market. One manufacturing optional USB connector that shared with one USB port for the front panel.

■ **Onboard IrDA Connector**

An IrDA connector for wireless infrared connections is available.

■ **Remote Wake On LAN Support**

Onboard RWU connector allows remote management on your network even the system is power off. This feature provides a simpler and convenient control to LAN-based networks.

■ **Intel LANDesk Client Manager (LDCM) Software Support (optional)**

LDCM is a DMI-compliant application for local and network management of desktop client systems. The application reduces the number of help desk calls by supplying the user with self diagnostics such as a PC health meter and local alert of potential problems.

## Intelligent Properties

### ■ [Optimized MMX Performance](#)

The motherboard utilizes the advanced features of the VIA APOLLO MVP3 chipset to optimize the unrivaled performance of the Intel Pentium® processor with MMX technology. To provide you with additional flexibility, the motherboard also supports other leading-edge processors featuring MMX technology.

### ■ [Onboard Accelerated Graphics Port \(AGP\)](#)

The motherboard is installed one 32-bit AGP bus with a dedicated 66MHz/133MHz path from the graphics card to the system memory (in 2x mode) offering much greater bandwidth than the 32-bit PCI bus does which currently operates at a speed of 33MHz. The board is fully compliant with the AGP 1.0 specification. AGP enabled 3D graphics cards can directly access main memory across this fast path instead of using local memory. To make use of the improved AGP performance, the motherboard should be installed with SDRAM type memory and the VGA card and drivers should also be fully AGP compliant. Using Microsoft's Windows 98 and Windows NT 5.0 which implement DirectDraw will allow the system to take full use of AGP's benefits without the need to install additional drivers.

### ■ [CPU Thermal Monitoring Alert](#)

An onboard sensor LM75 monitors the CPU temperature to make sure that the system is operating at a safe heat level. If the temperature is too high, the sensor automatically generates an SMI (System Management Interrupt) to slow down the CPU clock frequency. At the same time, the system warns you that the CPU is overheating if the LDCM is on. CPU utilization is restored to normal levels when the temperature returns to a safe level. This feature requires a power supply with a soft-off power controller. Please also read the feature of **CPU Warning Temperature** of BIOS Setup for related information.

### ■ [Lightning-Fast SDRAM Performance](#)

The motherboard supports general 66MHz and the new generation of lightning-fast 100MHz SDRAM via its onboard 168-pin DIMM sockets. SDRAM delivers an added boost to overall system performance by increasing the CPU-to-memory data transfer rate. SDRAM performance on the PA-2013 is further boosted by the board's integrated I<sup>2</sup>C controller, which optimizes the memory timing settings.

## ACPI Ready

This motherboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0 Hardware and BIOS requirement. If you install ACPI aware operating system, such as Windows 98, you fully utilized the power saving under ACPI. It is compatible with all other none ACPI operating systems. If you want to setup ACPI feature under Windows 98, please follow the description below:

Run Windows 98 setup by using **setup/p j** on the command line for installing Windows 98 with the ACPI control feature.

If you type **setup** without the parameter **/p j**, Windows 98 will be installed as APM, PnP mode, no ACPI will be used.

For more detail information, please visit the web site of Microsoft. Its address is: [www.microsoft.com/hwtest/](http://www.microsoft.com/hwtest/).

The following lists a few examples about the advantages of ACPI-

- **Soft-Off Support**

The motherboard's Soft-Off feature allows you to turn off your computer using the operating system. This feature requires a power supply with a soft-off power controller.

- **Remote Ring-On**

The Remote Ring-On function allows your computer to be turned on remotely via a modem while it is in sleep mode. This feature is particularly usefully when you are expecting a fax late night and leave only your modem on to minimize power consumption. As soon as possible the phone rings, the modem automatically turn on the system, which answers the phone and downloads the fax. Then the computer shuts off again, thereby minimizing its consumption of power. The Remote Ring-On function requires a power supply with a soft-off power controller.

- **RTC Alarm**

The RTC alarm feature allows you to preset the computer to wake-up at a certain time allowing you to implement a number of useful functions, such as automatically sending out a fax late at night.