

About This Manual

This **P6AN PPro EIDE Motherboard** is the newest Pentium Pro based EIDE motherboard solution in our products families. It incorporated with Intel new 440FX Chipset which is PCI Rev. 2.1 Compliant and support wide range of the DRAMs include Fast Page, EDO , Burst EDO DRAM type with SIMM socket. With 6 SIMM sockets available, it is very flexible for customer to configure the system memory from 8MB up to 768MB.

Run with the new Intel Pentium Pro based CPU is the most important feature that this motherboard provide. It support Intel Pentium Pro from 133Mhz up to 233Mhz.

Feature with Error Check Correction (ECC) system memory is another plus on this **P6AN PPro EIDE Motherboard** to outperform the whole system stability. It equip 6 of the 72 Pin SIMM that support Fast Page, EDO or BEDO DRAM with ECC.

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CHAPTER 1

Overview

This **P6AN PPro EIDE Motherboard** is a high performance on Intel Pentium Pro system hardware based motherboard. Both quality and innovative design to address the need of today's market. With various out-put voltage for Pentium Pro level CPU supported, 64 bit Burst Bus DRAM and Plug & Play Super I/O, this motherboard brings exceptional processing power that could only be achieved by Mini-computer. Incorporating the new emerging industrial standard Peripheral Component Interconnect (PCI) Local Bus together with the standard 16-bit Industrial Standard Architecture (ISA), this motherboard dramatically boots system I/O through for even the most demanding application in today's market. The hardware dimension is **Full ATX** form factor with four layer design technology.

1.1 Features

The Intel® Pentium® Pro Processor is the 6th generation in the Intel 386™, Intel 486, and Pentium family of processors. The Pentium Pro Processor has several key features such as 12-stage super pipeline architecture, Built-in 256KB/512KB cache, Out of order execution, dynamic branch prediction & speculative execution and a pipestage time 33 percent less than the Pentium Processor, which helps achieve a higher clock rate on any given Process. It will be super pipeline for high clock speed from 150MHz up to 233MHz. The Pentium Pro Processor was used to the Dynamic Execution that is the combination of improved branch prediction, speculative execution and data flow analysis that enables the Pentium Pro processor to deliver its superior performance from CPU architecture.

The Pentium Pro Processor is a 64 bit processor with RISC technology. It requires 32-bit applications (like Microsoft Windows NT and OS/2) to optimize its capabilities and performances. The Pentium Pro processor delivers best value for businesses moving to 32-bit computing when using the 32-bit Operating System and Applications.

Intel 82440FX PCI set chipset.

- Intel Pentium Pro Processor operating at 133 ~ 233 MHz with 387 ZIF socket 8 is scalable to accept faster Processors in the future. The Pentium Pro Processor is the next in the Intel386, Intel486, and Pentium family of processor. The second Level Cache (L2), controller are some of the components that existed in the Pentium Pro Processor.
- Onboard VRM supports full line Pentium Pro CPU.(need No VRM in Socket 8)
- Supports up to 768 MegaBytes DRAM(minimum of 8 MB) on board(72 Pin SIMM x 6, and BIOS auto FP DRAM, EDO and Burst EDO DRAM detection and configuration.(Refer to Chapter 2-3 System Memory Configuration)
- Supports four 16 bits ISA slots, four 32 bits PCI slots, and provides two independent high performance PCI IDE interfaces capable of supporting **PIO Mode 3 and Mode 4** devices. The **P6AN** supports four PCI Bus Masters and a jumperless PCI INT# control scheme which reduces configuration confusion when plugging in PCI I/O controller card(s).
- Supports **ATAPI** (e.g. **CD-ROM**) devices on both IDE interfaces.
- Supports 1 floppy port, 1 parallel port (EPP,ECP port), and 2 serial ports (16550 Fast UART compatible).
- Supports a **PS/2** style mouse and a **PS/2** style AT keyboard connectors.
- Supports Award Plug & Play BIOS . The BIOS is stored in Flash EPROM form. It provides better upgrade ability for the system.
- Supports CPU Hardware sleep and SMM (System Management Mode).
- Supports the USB connector for the future.
- Supports AT and ATX power Supply Connectors.
- Supports PWR/ON Switch when ATX power Supply is plugged
- Four Layer design technology and 245mm x 305mm full ATX form factor.

CHAPTER 2

Quick Installation

Step 1. Install CPU and Cooler

Make sure the Clock Frequency is set to the same as the CPU installed.

Step 2. Install the memory

Plug at least 2 PCS of 72 pins Micro Edge DRAM modules or at least 1 piece of 168 pins DIMM.

Step 3. Install display controller and connect I/O ports

This system board is designed using PCI (Peripheral Component Interconnect) and ISA (Industry Standard Architecture) interface controller. This support +5Volt interface slots. All PCI interface controllers must be PCI Rev 2.1 compliant.

Step 4. Connect the power supply

Connect AT P8 and P9 or the ATX (Recommended) from power supply output.

Step 5. Power on the system

Turn on the Computer power.(Make sure the volutage 110 or 220 in your area)

Step 6. Setting up the system

Enter the "Setup Menu" screen by press the " Del " key while power on or warm reset the system. Always "LOAD SETUP DEFAULT" at first and select others necessary that your system require.

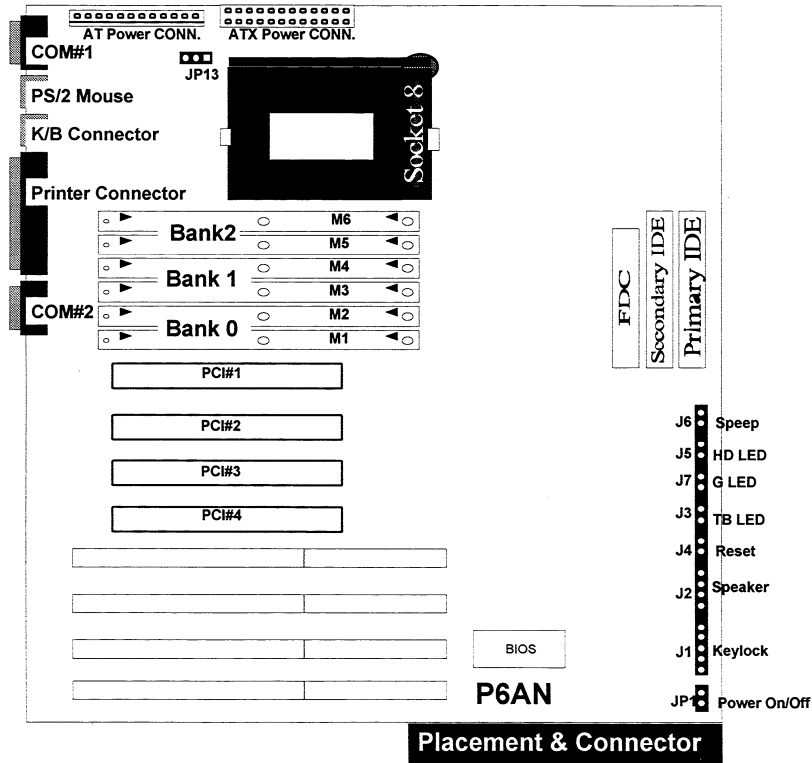
Step 7. Save the setup data to the CMOS

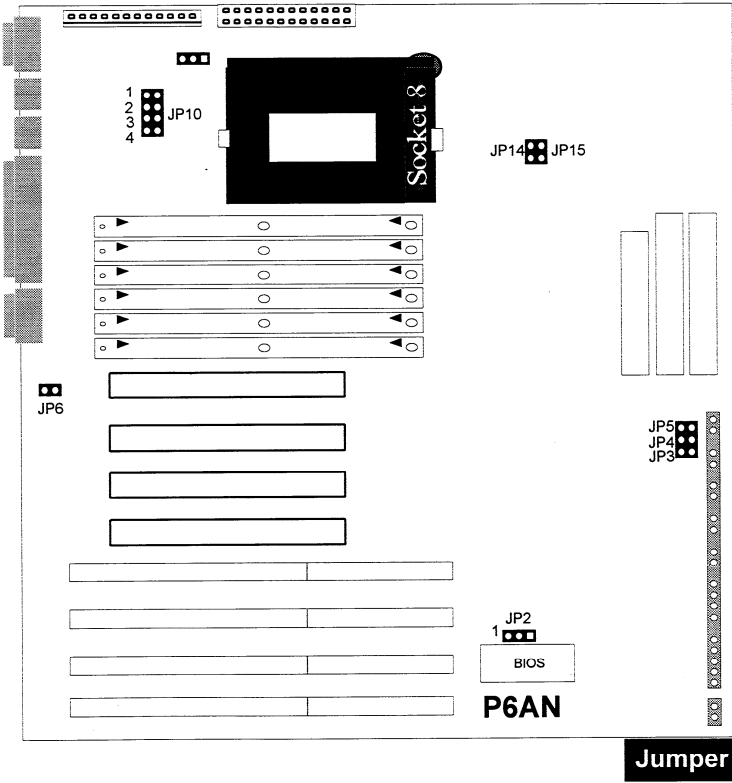
Exit the "Setup Menu " screen and then write to CMOS RAM. And enjoy the high performance system board.

P6AN™

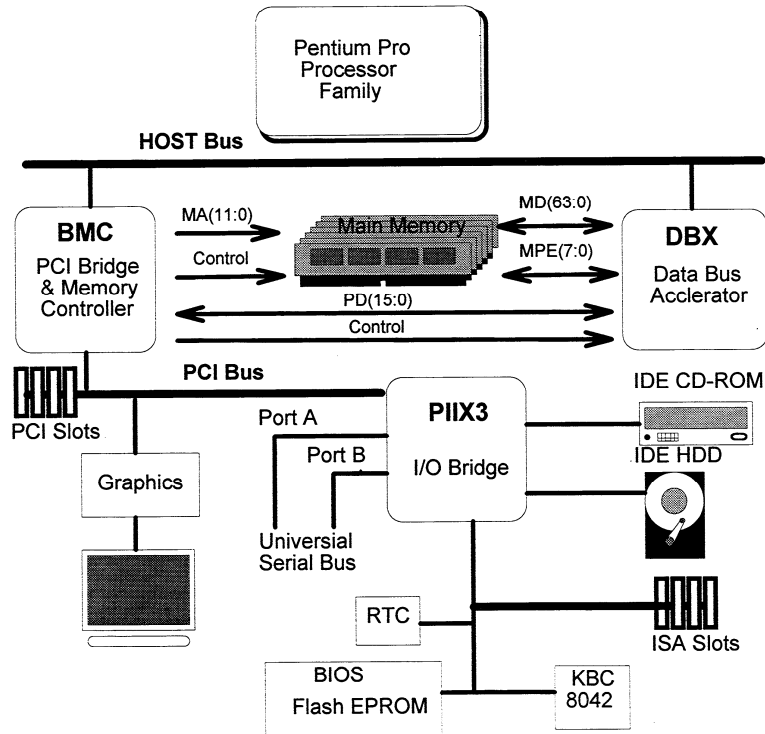
The P6AN supports **Onboard two PCI IDE** connectors, and detects IDE harddisk type by BIOS utility automatically.

The P6AN supports Award Plug & Play BIOS for the ISA and PCI cards. The BIOS can be located in Flash EPROM. The advantage of having Flash EPROM is much easier to replace BIOS code if necessary.





3.3 Block Diagram

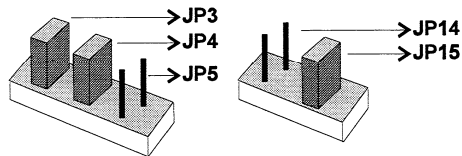


3.4 CPU group

3.4.1 Intel Pentium Pro Processor Installation

CPU/Rate	JP3	JP4	JP5	JP14	JP15	CPU Clock	Remark
133 MHz	On	On	On	Off	On	66MHz 2X	
150 MHz	On	On	Off	On	On	50MHz 3X	
166 MHz	Off	On	On	Off	On	66MHz 2.5X	
180 MHz	On	On	Off	On	Off	60MHz 3X	default
200 MHz	On	On	Off	Off	On	66MHz 3X	
233 MHz	Off	On	Off	Off	On	66MHz 3.5X	

<Default>

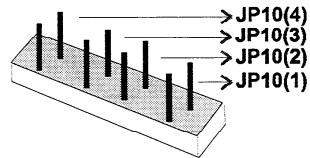


3.4.2 The Output voltage for Pentium Pro Processor

This motherboard will detect the Intel Pentium Pro Processor and output voltage to the processor automatically.

Check your CPU dealer if the processor provides this function. If not, following table is for your reference.

<Default>



- ★ The " ON " means installing a mini jumper cap so it covers both pins of the jumper.
- ★ The " OFF " means removing the mini jumper cap or cover only one pin of the jumper.

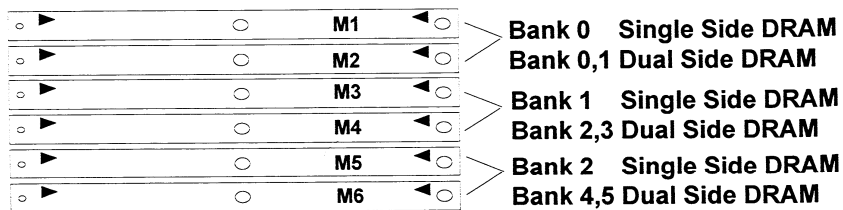
Voltage Out	JP10 (1)	JP10 (2)	JP10 (3)	JP10 (4)	Remark
Auto	Off	Off	Off	Off	Default
2.1 V	On	Off	Off	Off	
2.2 V	Off	On	Off	Off	
2.3 V	On	On	Off	Off	
2.4 V	Off	Off	On	Off	
2.5 V	On	Off	On	Off	
2.6 V	Off	On	On	Off	
2.7 V	On	On	On	Off	
2.8 V	Off	Off	Off	On	
2.9 V	On	Off	Off	On	
3.0 V	Off	On	Off	On	
3.1 V	On	On	Off	On	
3.2 V	Off	Off	On	On	
3.3 V	On	Off	On	On	
3.4 V	Off	On	On	On	
3.5 V	On	On	On	On	

Note:

The above table indicates The Various Voltages for Pentium Pro Processor on **P6AN PPro EIDE Motherboard** by automatically. But some of the previous Pentium Pro Processors do not support the VID in that case it will require manual Voltage ID setting from JP10. But with current Pentium Pro Processors that support VID will automatically setting the voltage regulator and no jumper settings are required (**JP10 is setting all open at Auto**).

3.4.3 System Memory Configuration

The **P6AN** supports different type of settings for the system memory. There is no jumper nor connector needed for memory configuration.



BANK 0 Socket 1 & 2	BANK 1 Socket 3 & 4	BANK 2 Socket 5 & 6	Total Size
4MB x 2	Empty	Empty	8MB
4MB x 2	4MB x 2	Empty	16MB
4MB x 2	4MB x 2	4MB x 2	24MB
4MB x 2	8MB x 2	Empty	24MB
4MB x 2	4MB x 2	8MB x 2	32MB
4MB x 2	8MB x 2	8MB x 2	40MB
4MB x 2	16MB x 2	Empty	40MB
4MB x 2	8MB x 2	16MB x 2	56MB
4MB x 2	16MB x 2	16MB x 2	72MB
4MB x 2	32MB x 2	Empty	72MB
4MB x 2	16MB x 2	32MB x 2	104MB
4MB x 2	32MB x 2	32MB x 2	136MB
4MB x 2	64MB x 2	Empty	136MB
8MB x 2	Empty	Empty	16MB
8MB x 2	8MB x 2	Empty	32MB
8MB x 2	8MB x 2	8MB x 2	48MB
8MB x 2	16MB x 2	Empty	48MB
8MB x 2	16MB x 2	16MB x 2	48MB
8MB x 2	16MB x 2	32MB x 2	80MB
8MB x 2	32MB x 2	Empty	112MB
8MB x 2	32MB x 2	32MB x 2	144MB
16MB x 2	Empty	Empty	32MB
16MB x 2	16MB x 2	Empty	64MB
16MB x 2	16MB x 2	16MB x 2	96MB
16MB x 2	32MB x 2	Empty	96MB
16MB x 2	32MB x 2	32MB x 2	160MB
32MB x 2	Empty	Empty	64MB
32MB x 2	32MB x 2	Empty	128MB
32MB x 2	32MB x 2	32MB x 2	192MB
32MB x 2	64MB x 2	Empty	192MB
32MB x 2	64MB x 2	64MB x 2	320MB
64MB x 2	64MB x 2	Empty	256MB
64MB x 2	64MB x 2	64MB x 2	384MB
128MB x 2	128MB x 2	128MB x 2	768MB