

# PENTIUM™ PCI MAIN BOARD

## PT-740A

### USER'S MANUAL

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## 1. INTRODUCTION

### 1.1. Overview

- PT-740A offers a 64-bit programming architecture compatible with the software base of the 486, 586 microprocessor. It is a reliable motherboard using Intel Triton 82430 PCIset and a multi-layer printed circuit board. The chipset consists of the 82437FX Triton System Controller (TSC), one 82371FB PCI ISA/IDE Accelerator (PIIX), and two 82438FX Triton Data Path (TDP) devices which provides a performance solution for a PCI PENTIUM computer system.
- PT-740A is a PCI Local Bus motherboard. The four PCI Local Bus slots fully comply with the PCI (Peripheral Component Interconnect) Local Bus Specification Rev. 2.0. The speed of I/O peripherals can be dramatically increased by connecting PCI compatible interface cards to the PCI Local Bus slots on the PT-740A. The manufacturer of this product is a member of PCI SIG (Special Interest Group).
- PT-740A is a green design mother-board which means when there is no system activity for a specific period of time (this period is software programmable), the PT-740A will slow down its original working frequency to zero. This will help to save the power consumption, reducing energy related pollution and protecting our environment.

"This is an ENERGY STAR™ compliant product."

The Environmental Protection Agency ENERGY STAR™ program defines that as an Ally of this program the specified manufacturer must produce systems, or system components which enable a computer system to operate and draw 30 watts or less of power in idle mode. Although the EPA do not endorse any particular product or service, the program is designed to offer a cooperative effort between the EPA and the component manufacturer (Ally) to provide energy saving products and education to customers."

"It runs with Netware"

The PT-740A was authorized by Novell to use the Novell Yes. It runs with Netware certification mark.

#### FCC Approval

The PT-740A motherboard has been approved for FCC Class B when properly installed in a barebone configuration using the following case/power supply:

Brand	Model	FCC ID
Procise	PC-109 SM	JPJPINE429G109
Procise	PC-609 T/M	JPJPINE429G609
Procise	PC-709 T/M	JPJPINE429G709

#### FCC Notice:

##### Information to the User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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. Should you experience interference to radio or television reception then the user is encouraged to try to correct this interference by one or more of the following measures:

- Re-locate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into 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 and for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

*"How to identify and Resolve Radio-TV Interference Problems."* This booklet is available from the US Government Printing Office, Washington, DC20402. Stock No. 004-000-00345-4.

#### FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

**Note:** In order for an installation of this product to maintain compliance with the limits for a Class B device, shielded cables and power cord must be used.

#### 1.2. Green PC Power Management

The Green PC mode is a state that minimizes power consumption. There are two different Green PC modes:

- 1) Standby mode. The clock of the CPU will slow down to the pre-set frequency.
- 2) Inactive mode / Sleep Mode. The PT-740A can stop the CPU clock under this mode.

The PT-740A will be placed into Green PC mode as a result of one of the following events:

- When the "Break" header, located besides the "HDD LED", is connected to a momentary switch, pressing the switch will put PT-740A into Green mode. Note: you may use the Turbo switch for this purpose since this mother board is hardwired to Turbo mode. However, you must pressed the Turbo switch twice.
- Expiration of the internal Green PC Timer. The Green PC Timer is software programmable which can be configured in the "Power Management Setup" option of the BIOS CMOS setup. The power management feature will be *enabled* as default, however the timing may differ due to production control. It is recommended that you re-adjust these timings according to your personal requirements/set-up.

Through system activity monitoring and management, the PT-740A will not go into Green PC mode if any of the following activity is detected:

- PCI Master 0 activity
- PCI Master 1 activity
- PCI Master 2 activity
- PCI Master 3 activity
- LPT port activity
- COM port activity
- ISA master & DMA activity
- IDE activity
- Floppy activity
- VGA activity
- Keyboard activity

#### 1.3. Checklist

Please check your PT-740A package to ensure that it contains the following items:

- PT-740A Main Board
- PT-740A User's Manual
- Two pieces of 40-way flat cables

If any of these items are missing or damaged, please contact your local dealer or sales representative for assistance.

## 2. SPECIFICATIONS

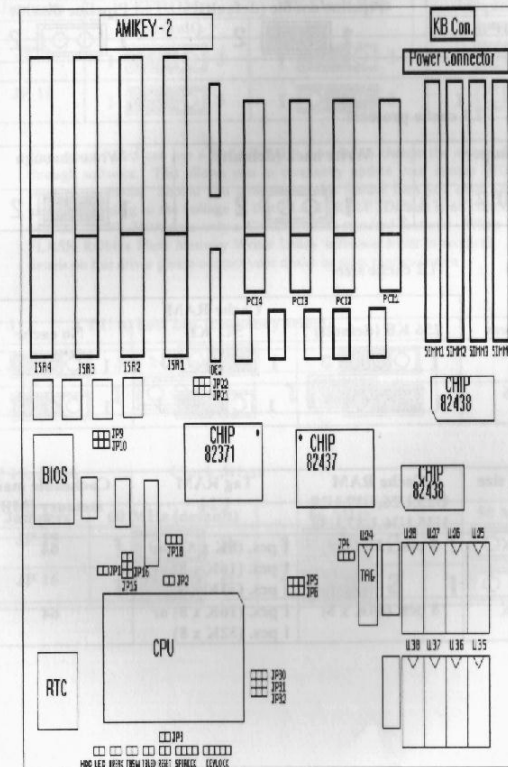
### 2.1. PT-740A System Board Specifications

- IBM AT compatible.
- Supports DRAM memory 8MB to 128MB.
- Supports EDO and Fast Page DRAM.
- Supports single-sided or double-sided SIMM modules.
- Supports Flash memory.
- Cache memory from 256K to 512K, write back.
- Four 16-bit ISA slots; four PCI slots (Master Mode).
- Green features to slow down / stop the CPU clock & turn off VGA display signals.
- Supports Mix mode cache RAM.
- On-board enhanced IDE controller capable of supporting PIO Mode 3 and Mode 4 devices for up to 16 MB/sec transfer.
- Supports LBA mode.
- AMI BIOS.
- Board size 33 cm x 22 cm.



### 2.2. Jumpers and Connectors

Jumpers / Connector	Description
JP1	CPU pipeline enable/disable
JP2	L1 cache protocol
JP4, JP5, JP6	L2 cache size
JP9, JP10	BIOS option
JP3	CPU to host bus frequency select
JP15, JP16	Clock driver
JP18	AT bus clock select
JP 21, JP 22	Onboard IDE IRQ routing option
JP 30, JP 31, JP 32	Power source option
PW1	Power Supply Connector
KB1	Keyboard Connector



To assist you in locating the necessary jumpers in order to configure your system, the following graphical guide has been added for jumper location









**JP 1 :** CPU pipeline enable / disable

Jumper	Pipeline enable (default)	Pipeline disable
JP 1	1  2	1  2

**JP 2 :** L1 cache protocol







Jumper	Write back (default)	Write through
JP 2	1  2	1  2

**JP 5, JP 6 :** L2 cache size

Jumpers	Cache RAM		
	256 KB (default)	512 KB	No cache
JP 5	1  3	1  3	1  3
JP 6	1  3	1  3	1  3



SRAM size	Cache RAM U25,U26,U27,U28 U35,U36,U37,U38	Tag RAM U24	Cacheable main memory (MB)
256K	8 pcs. (32K x 8)	1 pcs. (8K x 8) or 1 pcs. (16K x 8) or 1 pcs. (32K x 8)	64
512K	8 pcs. (64K x 8)	1 pcs. (16K x 8) or 1 pcs. (32K x 8)	64

**JP 9, JP 10 :** BIOS option







Jumpers	EPROM (default)	5V Flash Rom	12V Flash Rom (program)
JP 9	1  3	1  3	1  3
JP 10	1  3	1  3	1  3

This motherboard can use a FLASH ROM in order to change the system BIOS through software. This allows you to constantly update your system BIOS as changes are made. Should you wish to use this feature then you must set this jumper according to the voltage of that FLASH ROM. Default is no connection because the PT-740A uses only a EPROM as its standard feature. When using FLASH ROM a Flash Memory Writer Utility software driver is required. For details on this driver please contact your dealer or sales representative.

**JP 3 :** CPU to host bus frequency select

Jumper	3 to 2 (default)	2 to 1
JP 3	1  2	1  2

**JP 15, JP 16 :** Clock driver

Jumpers	60 MHz (default)	66 MHz	50 MHz
JP 15	1  2	1  2	1  2
JP 16	1  2	1  2	1  2

Summary of CPU speed:

Jumpers	75 MHz	90 MHz	100 MHz	120 MHz
JP 3	1 [○●●] 2	1 [○●●] 2	1 [○●●] 2	1 [●●●] 2
JP 15	1 [○●●] 2	1 [○●●] 2	1 [●●●] 2	1 [○●●] 2
JP 16	1 [○●●] 2	1 [●●●] 2	1 [●●●] 2	1 [●●●] 2

JP 18 : AT bus clock select

Jumper	PCICLK / 4 (default)	PCICLK / 3
JP 18	1 [○●●] 3	1 [●●○] 3

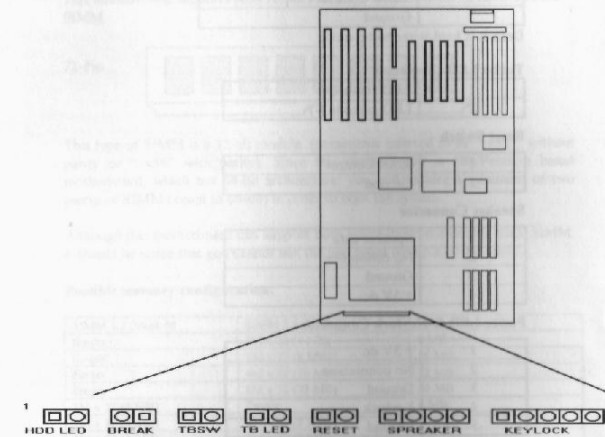
JP 21, JP 22 : Onboard IDE IRQ routing option

Jumpers	IRQ14, 15 (default)	MIR 0, 1
JP 21	1 [●●○] 3	1 [○●●] 3
JP 22	1 [●●○] 3	1 [○●●] 3

JP 30, JP 31, JP 32 : Power source option

Jumpers	Voltage regulator (default)	3.3 V power supply
JP 30	1 [○●●] 3	1 [●●○] 3
JP 31	1 [○●●] 3	1 [●●○] 3
JP 32	1 [○●●] 3	1 [●●○] 3

Connectors



HDD LED Connector

1	LED anode (+)
2	LED cathode (-)

Break Switch

1	IRQ1
2	Ground

Some system cases will have a cable for a switch on the case front which when pressed once will automatically put the system into 'suspend' mode. Moving a mouse or pressing a keyboard key will get the system back to normal mode. Connect that cable here.

#### Turbo Switch

1	Turbo Control
2	Ground

Default is hard-wired turbo mode.

#### Turbo LED Connector

1	LED anode (+)
2	LED cathode (-)

#### Reset Switch

1	Reset Control
2	Ground

#### Speaker Connector

1	Speaker data
2	No connection
3	Ground
4	+ 5V dc

#### Power LED & Keylock Connector

1	+ 5V dc
2	No connection
3	Ground
4	Keylock
5	Ground

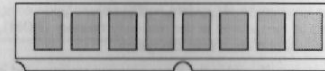
#### PW1: Power Supply Connector Pin Assignment

1	Power Good
2	+5V
3	+12V
4	-12V
5	Ground
6	Ground
7	Ground
8	Ground
9	-5V
10	+5V
11	+5V
12	+5V

### 2.3. SIMM MEMORY Configuration

This motherboard supports both 72-pin Fast Page mode DRAM or EDO DRAM SIMM.

72-Pin



This type of SIMM is a 32-bit module (sometimes referred to as "x32" without parity or "x36" with parity). Since this motherboard is 586/Pentium based motherboard, which has 64-bit architecture, you will require a minimum of two pieces of SIMM (equal to 64-bit) in order to boot the system.

Although this motherboard can support both single-bank and double bank SIMM, it should be noted that you cannot mix the two types within a 64-bit bank.

#### Possible memory configuration:

SIMM 1,2 (Bank 0)	SIMM 3,4 (Bank 1)	Total memory size
Empty	1M x 32 (4 MB)	8 MB
Empty	2M x 32 (8 MB)	16 MB
Empty	4M x 32 (16 MB)	32 MB
Empty	8M x 32 (32 MB)	64 MB
1M x 32 (4 MB)	Empty	8 MB
1M x 32 (4 MB)	1M x 32 (4 MB)	16 MB
1M x 32 (4 MB)	2M x 32 (8 MB)	24 MB
1M x 32 (4 MB)	4M x 32 (16 MB)	40 MB
1M x 32 (4 MB)	8M x 32 (32 MB)	72 MB
2M x 32 (8 MB)	Empty	16 MB
2M x 32 (8 MB)	1M x 32 (4 MB)	24 MB
2M x 32 (8 MB)	2M x 32 (8 MB)	32 MB
2M x 32 (8 MB)	4M x 32 (16 MB)	48 MB
2M x 32 (8 MB)	8M x 32 (32 MB)	80 MB
4M x 32 (16 MB)	Empty	32 MB
4M x 32 (16 MB)	1M x 32 (4 MB)	40 MB
4M x 32 (16 MB)	2M x 32 (8 MB)	48 MB
4M x 32 (16 MB)	4M x 32 (16 MB)	64 MB
4M x 32 (16 MB)	8M x 32 (32 MB)	96 MB
8M x 32 (32 MB)	Empty	64 MB
8M x 32 (32 MB)	1M x 32 (4 MB)	72 MB
8M x 32 (32 MB)	2M x 32 (8 MB)	80 MB
8M x 32 (32 MB)	4M x 32 (16 MB)	96 MB
8M x 32 (32 MB)	8M x 32 (32 MB)	128 MB