PII-3100B

PENTIUM® II & CELERON® 233MHz to 550MHz
AGP, PCI, Ultra DMA/33 & High Speed Multi I/O
Intel i440BX AGPset Chipset System Board

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User's Guide
Revision 4.0

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IDE HDD BLOCK MODE
•The default value is Enabled.

IDE PRIMARY, SECONDARY, MASTER & SLAVE HDD PIO MODE
•The default value is for the BIOS to automatically detect the IDE HDD Accessing mode.

IDE PRIMARY, SECONDARY, MASTER & SLAVE HDD ULTRA DMA MODE
•The default value is for the BIOS to automatically detect the IDE HDD Accessing mode.

ON-CHIP PRIMARY & SECONDARY PCI IDE
•You can enable either one or both onboard IDE channel ports

USB KEYBOARD SUPPORT
•The default value is disable USB Keyboard Support.

ONBOARD FDD CONTROLLER
•The default value is enable onboard FDD port.

ONBOARD SERIAL PORT 1 & 2
Auto   BIOS will automatically setup the ports address.
3F8/IRQ4 Enable onboard Serial port and address to 3F8/IRQ4.
2F8/IRQ3 Enable onboard Serial port and address to 2F8/IRQ3.
3E8/IRQ4 Enable onboard Serial port and address to 3E8/IRQ4.
2E8/IRQ3 Enable onboard Serial port and address to 2E8/IRQ3.
Disabled   Disable onboard Serial port 1.

ONBOARD PARALLEL PORT
378/IRQ7 Enable onboard LPT port and address is 378/IRQ7.
278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
Disabled   Disable onboard LPT port.
3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

PARALLEL PORT MODE
SPP   Using Parallel port as a Standard Printer Port.
EPP   Using Parallel port as an Enhanced Parallel Port.
ECP   Using Parallel port as an Extended Capabilities Port.
ECP/EPP Using Parallel port in ECP & EPP mode.

PS/2 MOUSE POWER ON
Disabled   Disable PS/2 Mouse Power on .
Left Double   Click twice on PS/2 mouse left button to Power on system.
Right Double   Click twice on PS/2 mouse right button to Power on system.

KEYBOARD POWER ON
Disabled   Disable Keyboard Power on .
Multikey   Enter multikey combination to Power on system.

PASSWORD SETTING
•Type the password, up to eight characters, and press <Enter>. The password typed now will clear the previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>.
•To disable password, just press <Enter> when you are prompted to enter password.

IDE HDD AUTO DETECTION
Type "Y" will accept the H.D.D. parameter reported by BIOS.
Type "N" will keep the old H.D.D. parameter setup.

INTEGRATED PERIPHERALS

POWER MANAGEMENT & PnP/PCI SETUP

POWER MANAGEMENT/APM
•Set this option to ENABLED to enable power management and APM features.

VIDEO OFF AFTER
•CHOOSE NA (DEFAULT),. When enabled, this option allows the VGA adapter to operate in a power saving mode.

MODEM USE IRQ
•Choose 3, 4, 5, 7, 9, 10, 11, or NA (default).

DOZE MODE
•This option sets the CPU speed down to 33 MHz to conserve power.

STANDBY MODE
•standby Mode turns off the VGA monitor, choose a mode for the different timers.

SUSPEND MODE
•Suspend Mode turns off the CPU, thus saving the energy of the systems.

HDD POWER DOWN
•When the set time has elapsed, the BIOS sends a command to the HDD to power down and this function has no effect on SCSI devices.

THROTTLE DUTY CYCLE
•Choose the duty cycle time: 12.5%, 25%, 37.5%, 50%, 62.5%, 75%, or 87.5%, and Disabled (default). The bigger of the percentage, the more saving power it gets.

VGA ACTIVE MONITOR
•Choose Enabled or Disabled (default). When Enabled, any video activity restarts the global timer for Standby mode.

SOFT-OFF BY PWR-BTTN
•Choose delay 4 Sec or Instant Off (default). This item allows user to set the Off function of power button by software control. delay 4sec-Off: The system will not be powered off after 4 seconds when turns off the system.

RESUME BY RING
•When this item is set to Enabled, any event, occurring to the Modem Ring, will awaken a system which as been powered down.

PnP OS INSTALLED
•Choose Yes (default). select Yes if the system operating enviroment is Plug and Play aware, i.e., Win95

RESOURCES CONTROLLED BY
•Choose Auto (default) or Manual. The Award Plug & Play BIOS has the capacity to configure all of the boot, and, Plug-and-Play compatible devices automatically.

RESET CONFIGURATION DATA
•Choose Enabled or Disabled (default). Select Enabled to reset Extended System Configuration Data (ESCD) when there is a serious conflict whereby the system can not be rebooted which is caused by the system reconfiguration of the new add-on card.

MAINBOARD SPECIFICATIONS

CPUs SUPPORTED
•Intel® Pentium® II 233-333@66MHz, 350-550@100MHz
Celeron® 266-333MHz
•High Performance Intel i440BX AGPset Chipset
•Support 66 / 100MHz system bus speed

MEMORY
•Up to 768MB of main memory in 3 168-pin DIMM sockets for SDRAM or EDO DRAM modules.
•Uses 8 / 16 / 32 / 64 / 128 / 256 MB DIMM module DRAM
•Supports ECC or Non-ECC type DRAM

ENHANCED IDE CONTROLLER
•2 Channel PCI Bus Mastering EIDE controller supports up to four devices with PIO Mode 0 to Mode 4 and Ultra DMA/33

BUS ARCHITECTURE
•One 1X or 2X AGP Slot (Accelerated Graphics Port)
•Four 32-bit PCI Local Bus Slots with Master Mode
•Three 16-bit ISA Bus Slots

ON-BOARD I/O CONTROLLER
•Two 16550 Fast Serial Ports
•One SPP, EPP & ECP Mode Capable Parallel Port
•One High Speed Floppy Drive Connector
(Supports 2.88MB floppy drives & 1Mb/sec floppy transfer rates)
•PS/2-Type Mouse and PS/2-Type Keyboard Ports
•Two Universal Serial Bus (USB) Ports

POWER MANAGEMENT FEATURES
•SMM/SMI Power Management with APM Software Interface - Monitor CPU and I/O status with fully user configurable parameters in BIOS
•Supports ATX power functions like shutdown/suspend
•On Board Hardware Monitor IC

BIOS FEATURES
•Award "Plug and Play" Flash ROM for easy BIOS upgrades
•Auto detect & report system health status
•F5 - Hot key for major features description

PROTECTION
•Speaker Alarm when CPU Overheats or CPU Fan failure
•Auto speed down when CPU overheat (OS independent & Driverless)
•System Health status detect & report by BIOS, System health program
•H/W detect ±5V, ±12V, CMOS battery Voltage & CPU Voltage

DRIVER
•Hardware Doctor - System Health utility
•Ultra DMA/33 Bus Master IDE Driver
•Intel PIIX4e Patch Utility for Windows® 95

SIZE
•ATX Form Factor
•30.5 cm X 19 cm

BE SURE YOU KNOW WHAT YOU ARE DOING!
•It's easy to get overly excited about your purchase, and to jump right into installing the system board into your case. Too many times, people fail to read the manual or insist on installing it themselves, only to find out later that they've permanently damaged their motherboard and as well as their components. Though this manual will make installation seem like a fairly simple procedure, it is not. So, if you're not a technophile or have little or no computer knowledge, consider asking your vendor or a trained technician to install this board.

SETUP THE CPU RETENTION CLIP(S)
•Look at the CPU installation page for instructions on setting up the retention clips.

INSERT THE CPU INTO THE SOCKET
•Look at the CPU installation page for instructions on inserting your CPU.

CONFIGURE YOUR CPU THROUGH JP6, SW1, SW2 ,SW3 & SW4.
•Look at the CPU installation page for instructions on configuring your CPU.

INSTALL YOUR MEMORY INTO THE DIMM SOCKETS
•Insert your memory into the corresponding DIMM sockets. Follow the instructions outlined in the memory section of this manual.

INSTALL THE MAINBOARD ONTO THE SYSTEM CHASSIS
•Make sure the mainboard is properly grounded and mounted into the case. Take time to do this properly as it makes the installation of your cards and cables easier.

CONNECT AND INSTALL YOUR CARDS & CABLES
•Be sure your cables and cards are properly oriented and plugged in firmly. See the helpful hint page for tips on connecting your cables.

CONNECT YOUR CASE LED & SWITCH CABLES TO THE BOARD

CONNECT THE POWER SUPPLY CABLES TO THE BOARD
•See the mainboard diagram page for tips on connecting your power cables.

POWER ON AND GO INTO BIOS AND SETUP YOUR SYSTEM
•Press <del> during memory check phase of POST and see the BIOS setup pages of this manual for more details on setting up your system's configuration. If you get a blank screen, refer to the troubleshooting section for some tips on solving this problem.

GET YOUR OPERATING SYSTEM UP AND RUNNING
•Bootup your OS and see if the board and all your peripherals are recognized and working.

CLOSE UP YOUR CASE

INSTALLATION GUIDE

EDO CASX# MA WAIT STATE
•The default value is 1 or 2

SDRAM RAS-TO-CAS DELAY
•The default value is 2 or 3

SDRAM RAS PRECHARGE TIME
•The default value is 3 or 4

SDRAM CAS LATENCY TIME
•Use the default setting.

DRAM DATA INTEGRITY MODE
Set on "Non-ECC"   For 64bit standard type DIMM module.
Set on "ECC"   For 72bit ECC type DIMM module.

SYSTEM BIOS CACHEABLE
•The default value is Enabled.

VIDEO BIOS CACHEABLE
•The default value is Enabled.

VIDEO RAM CACHEABLE
•You can enable this function to get better VGA performance. However for some brands of VGA cards this must be disabled (e.g.ET4000W32P).

16 BIT I/O RECOVERY TIME
•Set 16 Bit I/O recovery time from 1 to 4 or NA for none.

MEMORY HOLE AT 15M-16M
•Set on Enabled to Set Address = 15-16MB remap to ISA BUS.

PASSIVE RELEASE
•The default value is Enabled.

DELAYED TRANSACTION
•Set to Enabled for certain slow speed ISA devices in your system.

AGP APERTURE SIZE
•Choose 4M, 8M, 16M, 32M, 64M, 128M or 256M. Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space.

CPU HOST CLOCK
•Choose Disabled (default), 50MHz, 66MHz, 75MHz, 83MHz for 66MHz CPU.
Choose Disabled (default), 100MHz, 103MHz, 112MHz, 133MHz for 100 MHz CPU.

CPUFAN SPEED
•When Enabled the system will check the CPUFAN status.

AGP FAN SPEED / FAN SPEED / VOLTAGE STATUS
•You can set it to Detect these settings automatically.

CPU WARNING TEMPERATURE
•Choose Disabled (default), 50½C/122⅜F, 53⅜C/127½F, 56¾C/133½F, 60¼C/140½F, 63⅛C/145½F, 66¾C/151¼F, 70½C/158⅜F.

CHIPSET FEATURES SETUP

VIRUS WARNING
•If it is set to enable, the category will flash on the screen when there is any attempt to write to the boot sector or partition table of the hard disk drive. The system will halt and the warning message will appear in the mean time. You can run anti-virus program to locate the problem.

•CPU INTERNAL CACHE / EXTERNAL CACHE
These two categories speed up memory access. However, it depends on CPU / chipset design. The default value is Enabled.

•QUICK POWER ON SELF TEST
This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST. The default value is Enabled.

•BOOT SEQUENCE
This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A, C, SCSI. X1, X2, X3. System will first search for X1 disk drive then X2 disk drive and then X3 disk drive.

•SWAP FLOPPY DRIVE
When Enabled the floppy A & B will be swapped under DOS.

•VGA BOOT FROM
You can boot from either an AGP or PCI boot.

•BOOT UP FLOPPY SEEK
During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks. The default value is Enabled.

•BOOT UP NUMLOCK STATUS
The default value is Keypad is number keys.

•TYPEMATIC RATE SETTING
The default value is Disable Keyboard Typematic rate setting.

•TYPEMATIC RATE (CHARS/SEC)
Renge between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.

•SECURITY OPTION
This category allows you to limit access to the system and Setup, or just to Setup. The default value is Setup. **To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security.**
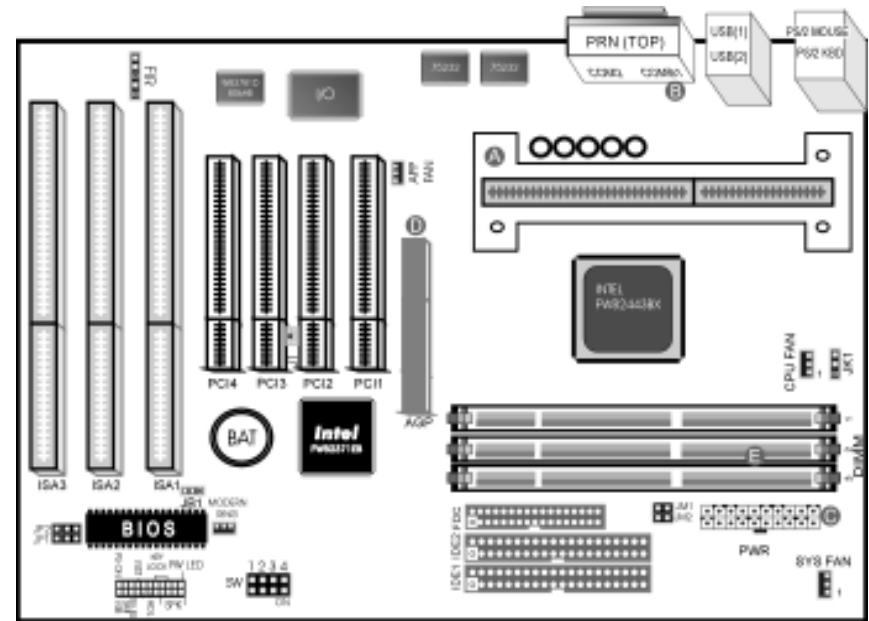
•PCI/VGA PALETTE SNOOP
Enable this when you have a Video Card on both an ISA Bus and a PCI Bus.

•VIDEO BIOS SHADOW
It determines whether video BIOS is able to copy to RAM, however, it is optional from chipset design. Video Shadow will increase the video speed.

•SHOW LOGO
The default is disabled. "Enabled" will show the manufacturer logo.

I/O CONNECTOR PORTS

USB	USB port
IDE 1	Primary IDE port
IDE 2	Secondary IDE port
PS/2	PS/2 Keyboard port
PS/2	PS/2 Mouse port

Floppy	Floppy Drive port
COM A	Serial port 1
COM B	Serial port 2
LPT	LPT Parallel port

Ⓐ SLOT 1
Plug in your Intel Pentium II CPU into the Single Edge Contact Slot. Make sure you have the retention clips and screws before the installation.

Ⓑ ATX I/O CONNECTORS
This is where you can plug in such external input/output devices as a PS/2 mouse & keyboard, USB peripherals, parallel and serial port devices.
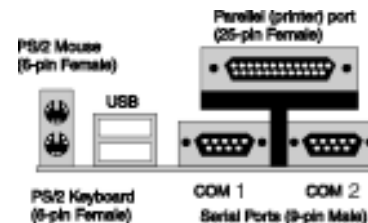
Ⓒ ATX POWER SUPPLY CONNECTOR
Plug the single 20 pin connector into the board connector. It should only fit in one direction.

Ⓓ AGP PORT
The board supports Accelerated Graphics Port (AGP) video cards.

Ⓔ DIMM MODULE SLOTS
Plug in 168pin DIMM memory modules into these Three slots.

PS/2 Mouse (6-pin Female)

USB

PS/2 Keyboard (6-pin Female)

Parallel (printer) port (25-pin Female)

COM 1   COM 2
Serial Ports (9-pin Male)

FAN PWR - CPU FAN Power Connector

PIN	DESCRIPTION
1	Ground
2	+12V
3	Sensor

FIR - Infrared Connector

PIN	DESCRIPTION
1	Power
2	Not Connected
3	IR DATA Input
4	Ground
5	IR DATA Output

JB1 - CMOS Clear

JUMPER	DESCRIPTION
1 - 2	Normal
2 - 3	Clear Cmos

Note: After BIOS Flash please clear CMOS before continuing with setup

JP2 - ACSM I Power Control Selection

JUMPER	DESCRIPTION
1 - 2	Soft On/Off (via Soft Power Switch)
2 - 3	Hard On/Off (via Power Supply Switch)

JK1 - Keyboard Power On Selection

JUMPER	DESCRIPTION
1 - 2	Disabled Keyboard Power On
2 - 3	Enabled Keyboard Power On

CN3 - Wake on LAN Connector

PIN	DESCRIPTION
1	+5VSB
2	Ground
3	Control - Signal

J1 - SB-LINK

PIN	DESCRIPTION
1	Signal
2	Signal
3	Ground
4	Ground
5	Not Connected
6	Signal

STANDARD CMOS SETUP MENU
The items in Standard CMOS Setup Menu (Figure 4.2) are divided into 9 categories. Each category includes no, one or more than one setup items. Use the arrows to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

DATE
•The date format is <day>, <month> <date> <year>.

TIME
•The times format in <hour> <minute> <second>. The time is calculated base on the 24 hour military-time clock. For example, 1 p.m. is 13:00:00.

PRIMARY HDDS / SECONDARY HDDS
•The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and user definable type. User type is user-definable; Auto type which will automatically detect HDD type.
•If you select User Type, related information will be asked to enter to the following items: CYLINDERS - Number of cylinders, HEADS - Number of heads, PRECOMP - Write precomp, LANDZONE - Landing zone, SECTORS - Number of sectors

DRIVE A TYPE / DRIVE B TYPE
•The category identifies the types of floppy disk drive A or drive B that has been installed in the computer: *None, 360K/5.25 in., 1.2M/5.25 in., 720K/3.5 in., 1.44M/3.5 in., 2.88M /3.5 in.*

VIDEO
•The category detects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in setup: *EGA/VGA - Enhanced Graphics Adapter /Video Graphics Array (EGA, VGA, SVGA, or PGA monitor adapters), CGA 40 - Color Graphics Adapter, power up in 40 column mode, CGA 80 - Color Graphics Adapter, power up in 80 column mode, MONO - Monochrome adapter, includes high resolution monochrome adapters*

HALT ON
•The category determines whether the computer will stop if an error is detected during power up: *NO Errors - The system boot will not stop for any error that may be detected, All Errors - Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted, All, But Keyboard - The system boot will not stop for a keyboard error; it will stop for all other errors, All, But Diskette - The system boot will not stop for a disk error; it will stop for all other errors, All, But Disk/Key - The system boot will not stop for a keyboard or disk error; it will stop for all other errors.*

MEMORY
•The category is display-only which is determined by POST (Power On Self Test) of the BIOS: *Base Memory, Extended Memory & Expanded Memory.*

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS SRAM so that it retains the Setup information when the power is turned off.

WARNING
•Due to the frequent upgrades of the AWARD BIOS, this manual may not include descriptions of all the features available to you in your current BIOS.
•Do not change the settings in the BIOS unless you know EXACTLY what you are doing or when told to do so by a trained technician. Changing any of the BIOS settings, may affect the performance of your system and can also cause your system to hang.

ENTERING THE BIOS SETUP
•Power ON the computer and press <Del> immediately will allow you to enter Setup. If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" bottom on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Del> keys.

THE MAIN MENU
•Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from nine 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 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 setup page includes all the items of Green function features.

PNP/PCI CONFIGURATION
•This setup page includes all the configurations of PCI & PnP ISA resources.

LOAD BIOS DEFAULTS
•BIOS Defaults indicates the most appropriate value of the system parameters that the system would be in safe configuration.

LOAD PERFORMANCE DEFAULTS
•Performance Defaults indicates the value of the system parameters to be in the best performance configuration.

INTEGRATED PERIPHERALS
•This setup page includes all onboard peripherals.

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

IDE HDD AUTO DETECTION
•Automatically configure hard disk parameters.

SAVE & EXIT SETUP
•Save CMOS value settings to CMOS and exit setup.

EXIT WITHOUT SAVING
•Abandon all CMOS value changes and exit setup.

CN4 - SYSTEM PANEL CONNECTORS

HD - Hard Disk Active LED

PIN	DESCRIPTION
17	LED Anode (+)
6	LED Cathode (-)

PW LED - Power On LED

PIN	DESCRIPTION
1	LED Anode (+)
2	Not Connected
3	LED Cathode (-)

•System has power LED lamp on the case panel. The power LED will light on, off or flash to indicate the status of the system. The connector must be connected in correct orientation.

RST - Reset Switch

JUMPER	DESCRIPTION
8	Normal Operation
15	System Hardware Reset

•The RESET switch on panel provides users with HARDWARE RESET function. The system will do a cold start after the RESET switch is pushed and released by user.

Soft PWR - Soft Power Switch

JUMPER	DESCRIPTION
11	Normal Operation
12	Power On/Off

SPK - Speaker Connector

PIN	DESCRIPTION
19	VCC
20	Not Connected
21	Not Connected
22	Output

•There is a speaker in AT system for sound purpose. The 4 - Pins connector SPK is used to connect speaker

SMI SW & SMI LED

PIN	DESCRIPTION
13	LED Anode (+)
10	LED Cathode (-)

TB LED

PIN	DESCRIPTION
9	LED Anode (-)
14	LED Cathode (+)

CN4 - System Panel Connectors

BIOS OVERVIEW & SPECIFICATIONS

MAINBOARD CONNECTORS

The system bus speed can be set to 66.6MHz or 100MHz from the jumper (**JP6**). The user can change the DIP SWITCH **(SW)** selection to set up the CPU speed for different processors. The CPU speed must match with the frequency RATIO and Front Side Bus (FSB) speed. It will cause system hanging up if the frequency RATIO and FSB Speed do not match with the CPU.

JM1-JM2, SW1, SW2, SW3 & SW4 - CPU Speed Configuration

| RATE	DIP-SWITCH (SW1)				CPU CLOCK	
	1	2	3	4	66MHZ JM1-ON	100MHZ JM1-OFF
3X	ON	ON	OFF	ON	200 MHz	300 MHz
3.5X	ON	OFF	OFF	ON	233 MHz	350 MHz
4X	ON	ON	ON	OFF	266 MHz	400 MHz
4.5X	ON	OFF	ON	OFF	300 MHz	450 MHz
5X	ON	ON	OFF	OFF	333 MHz	500 MHz
5.5X	ON	OFF	OFF	OFF	366 MHz	550 MHz

JM1 & JM2 Both Short = 66MHz • JM1 & JM2 Open = 100MHz

This motherboard supports an Intel Pentium II processor using a Single Edge Contact (SEC) slot. Make sure that you have the following items (which should be included in the package) before doing any installation: (1) 4 screws (2) 1 retention clip.

(1) There are 2 sets of small holes along Slot 1 of your motherboard: two on the top and two on the bottom. Snap the retention clip (2) right into those 2 sets of holes. If the retention clip is installed incorrectly, you will not be able to insert the CPU into the retention clip.
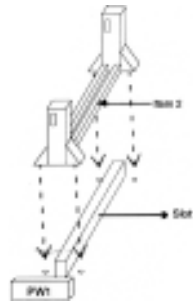
(2) Find the holes in each corner of the retention clip and insert one of the four screws into each of these holes.
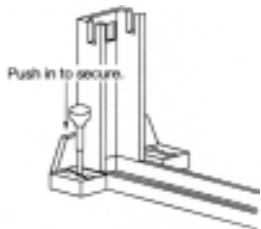
(3) Push the screws downward to secure the retention clip.
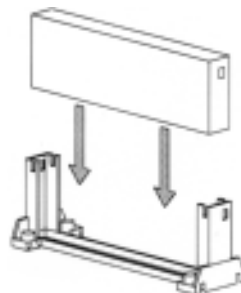
(4) Flatten the two latches on the side of the CPU. Insert the CPU into the retention clip. Lock the two latches to secure the CPU.

CPU INSTALLATION

MEMORY INSTALLATION SETTINGS

BANK#	DESCRIPTION	MEMORY MODULE
0	DIMM1 (168 PIN)	8MB / 16MB / 32MB / 64MB / 128MB / 256MB
1	DIMM2 (168 PIN)	8MB / 16MB / 32MB / 64MB / 128MB / 256MB
2	DIMM3 (168 PIN)	8MB / 16MB / 32MB / 64MB / 128MB / 256MB

MEMORY CONSIDERATIONS
•The mainboard lets you add up to 768MB of system memory through 3 DIMM sockets on the board
•The three 168-pin DIMM sockets are divided into three banks: BANK 0, 1 & 2.
•The speed of all DIMM modules must be 67 - 100 MHz for SDRAM when system bus speed is set to 66MHz
•When system bus speed is set to 100MHz, 100MHz SDRAM is required.
•When installing DIMM modules, make sure that Pin 1 of the module must match with Pin 1 of the DIMM socket. Press down firmly until the side clips lock into place.

MEMORY CONFIGURATION