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REMARK

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Chapter 1
Motherboard Feature Introduction

SPECIFICATIONS

System Chipset	Intel® 440ZX chip set , ALi 513X
CPU Bus Speed	Pentium® /III, 66 and 100 MHz CPU
CPU Clock	200MHz ~ 550MHz
Memory Subsystem	Expandable to 256MB(2 banks) with 168-Pin SDRAM(DIMM) Socket X2
AGP Slot	AGP Interface Specification Rev 1.0 Compliant
Integrated I / O	Two high speed 16550 compatible serial ports, one Multi-Mode Parallel Port fixed SPP/EPP/ECP standard
	Two PCI Bus master Ultra DMA/33 IDE port (up to 4 IDE Devices)
	Support two 360KB / 720KB / 1.2MB / 1.44MB / 2.88MB / floppy disk driver
	Support LS120 drives & ZIP 100 Drives
	One PS/2 Mouse port
	Support two USB ports
	Support IrDA TX / RX header

BIOS	1MB Flash ROM Award AGP BIOS with green, plug and play, ACPI, DMI feature support Support secondary device boot
Expansion slot	Three 32-bit PCI Slots & Two 16-bit ISA Slots Support 3.3/5V PCI 2.1 bus Interface
EXTRA Function	Suspend LED on/off Win95 soft power off External SMI Wake up by ring Wake on Lan
Power Supply	Support AT & ATX power
Dimension	Baby AT size (220mm x 220mm), 4-layer PCB

POWER OFF CONTROL SOFTWARE

The motherboard design supports software power off Control feature through the SMM code in the BIOS under Win95 operating system environment. This is INTEL Baby AT form factor feature and you should use ATX/AT power supply.

First, you should connect the power switch cable (provided by the ATX/AT case Supplier) to the connector [PB_BT] on the motherboard. In the BIOS screen of "POWER MANAGEMENT SETUP", choose "User Defined"(or min power saving or Max power saving) in "POWER MANAGEMENT" and choose "Yes" in "PM Control by APM".

In Windows 95 the " SHUT DOWN " option , the computer's Power will switch off automatically and put the PC in a suspend mode. This will be indicated by a bunking power light. To restart the system , simply press the Power Button.

PACKAGING CHECK LIST

The motherboard comes securely packed in a gift box and shipping carton. If any of the above items are missing or damaged , please contact your supplier.

The motherboard contains:

Q'TY	Description		
1	Motherboard	:	B687Z
1	Driver	:	CD-Title w/Installation label
			• PC-Cillin Software
			• Motherboard Bus master Driver
1	Cable	:	FDD. IDE. COM1/2. PS2. LPT Connector
1	Manual	:	User's manual

Chapter 2
Setup Guide

B687Z Motherboard Layout Drawing
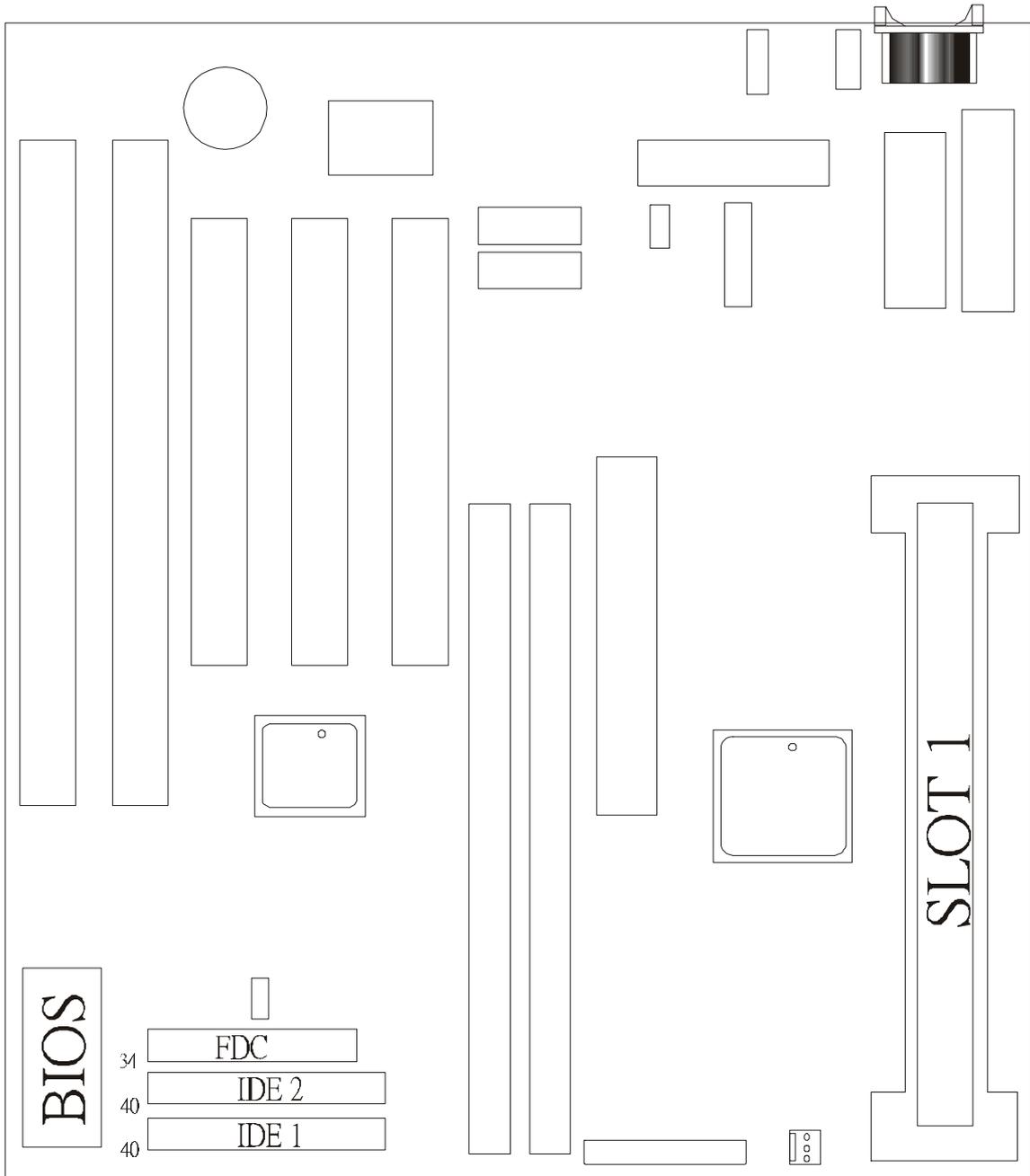
Jumper & Connector Setting

CONNECTOR SETTING

J1- Keyboard Connector

Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	NC
4	GND
5	+5V

J2 - Mini PS/2 Mouse Connector

Pin	Description
1	Mouse Data
2	N.C.
3	Ground
4	+5V
5	Mouse Clock

J3 - ATX Power Supply Connector

Pin	Description
1,2,11	+ 3.3 V
3,5,7,13,15,16,17	Ground
4,6,19,20	+ 5 V
8	POWER GOOD
9	5VSB
10	+12 V
12	-12 V
14	PS-ON

18	- 5 V

JP4 – AT Power Supply Connector

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

LPT1 - Printer Connector

Pin	Signal Name	Pin	Signal Name
1	Strobe-	14	AFD
2	Data Bit 0	15	Error
3	Data Bit 1	16	INIT
4	Data Bit 2	17	SLCTIN
5	Data Bit 3	18	GND
6	Data Bit 4	19	GND
7	Data Bit 5	20	GND
8	Data Bit 6	21	GND
9	Data Bit 7	22	GND
10	ACK	23	GND
11	Busy	24	GND
12	PE	25	GND
13	SLCT	26	GND

COM1,COM2 –Serial Connectors

Pin	Signal Name	Pin	Signal Name
1	DCD	6	DSR
2	SIN	7	RTS
3	SOUT	8	CTS
4	DTR	9	RI
5	GND	10	NC

USB1 - Universal Serial Bus (USB) Connectors

USB1 Pin	Signal Name	USB2 Pin	Signal Name
1	USB VCC 0	1	USB VCC 1
2	USB Data -	2	USB Data -
3	USB Data +	3	USB Data +
4	USB GND 0	4	USB GND 1
5	GND	5	GND

5135SIR - Infrared Connector: IR

Pin	Signal Name
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

J7 – OTHER JUMPER SETTING
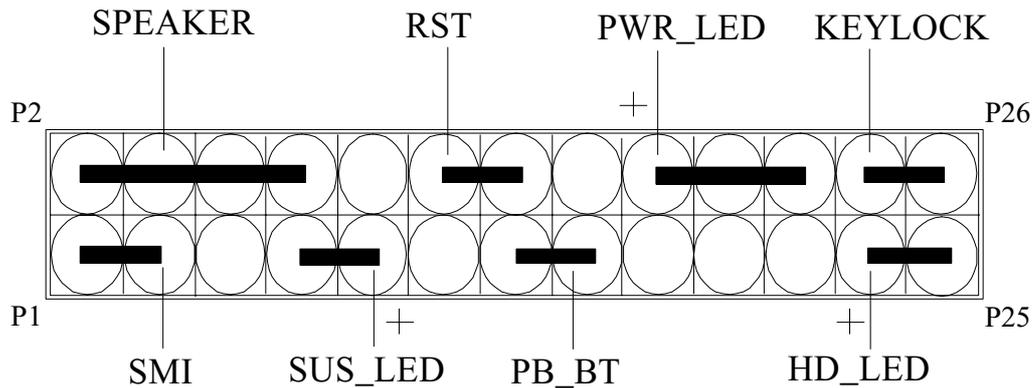
Pin	Name	Description
1-3	SMI	Suspend mode
7-9	SUS _ LED	Suspend mode LED
13-15	PB _ BT	Power buttem
23-25	HD – LED	Hard Disk LED
2-8	SPEAKER	Speaker
12-14	RST	Reset buttom
18-22	PWR - LED	Power LED
24-26	KEYLOCK	Key Lock

JP8 – CMOS Clear

JP8	Description
1-2	Normal (default)
2-3	Clear CMOS

CPU TYPE Select

CPU Bus Speed - 66MHz part :

1. 233MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	Open	Open	Short	Short	Short

JP1 JP2 JP3 JP5 JP6 JP7

2. 266MHz
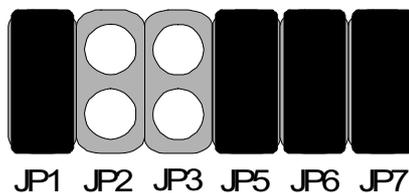
JP1	JP2	JP3	JP5	JP6	JP7
Short	Short	Short	Open	Short	Short

JP1 JP2 JP3 JP5 JP6 JP7

4. 300MHz
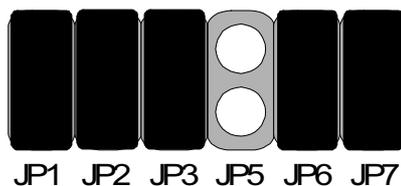
JP1	JP2	JP3	JP5	JP6	JP7
Short	Open	Short	Open	Short	Short

JP1 JP2 JP3 JP5 JP6 JP7
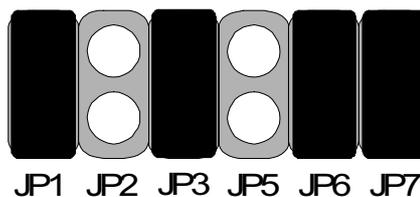
5. 333MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	Short	Open	Open	Short	Short

JP1 JP2 JP3 JP5 JP6 JP7
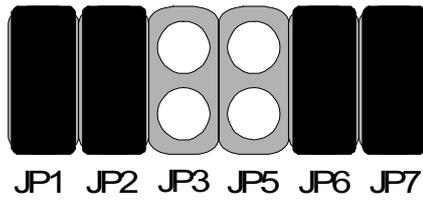
6. 366MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	Open	Open	Open	Short	Short
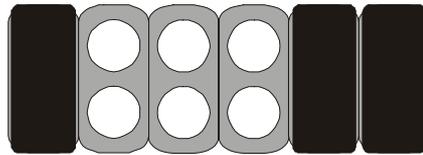
7. 400MHz

JP1	JP2	JP3	JP5	JP6	JP7
Open	Short	Short	Short	Short	Short

8. 433MHz

JP1	JP2	JP3	JP5	JP6	JP7
Open	Open	Short	Short	Short	Short
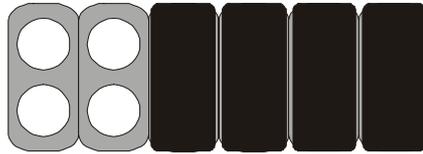
9. 466MHz

JP1	JP2	JP3	JP5	JP6	JP7
Open	Short	Open	Short	Short	Short
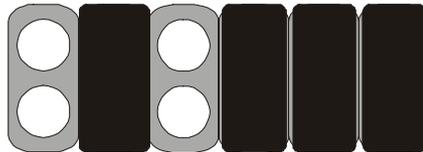
10. 500MHz

JP1	JP2	JP3	JP5	JP6	JP7
Open	Open	Open	Short	Short	Short
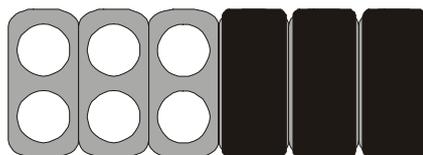
11. 533MHz

JP1	JP2	JP3	JP5	JP6	JP7
Open	Short	Short	Open	Short	Short
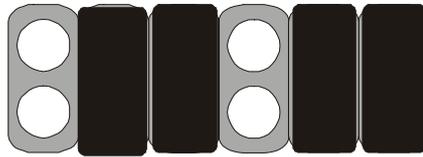
CPU Bus Speed - 100MHz part :

1. 300MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	Short	Open	Short	Open	Short

JP1 JP2 JP3 JP5 JP6 JP7
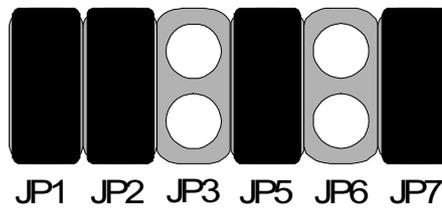
2. 350MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	Open	Open	Short	Open	Short

JP1 JP2 JP3 JP5 JP6 JP7
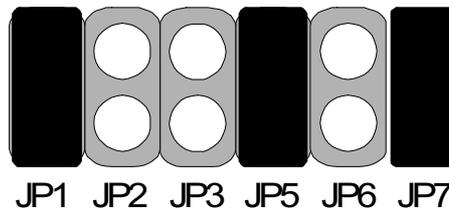
3. 400MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	**Short**	**Short**	**Open**	**Open**	**Short**

JP1 JP2 JP3 JP5 JP6 JP7
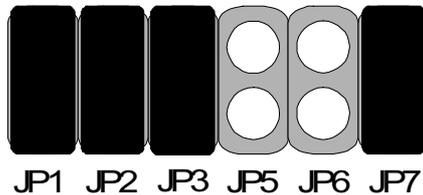
4. 450MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	**Open**	**Short**	**Open**	**Open**	**Short**

JP1 JP2 JP3 JP5 JP6 JP7
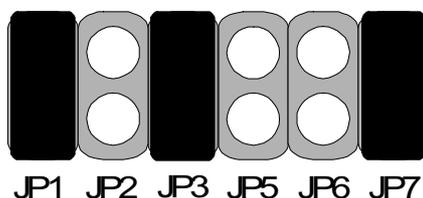
5. 500MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	**Short**	**Open**	**Open**	**Open**	**Short**

JP1 JP2 JP3 JP5 JP6 JP7
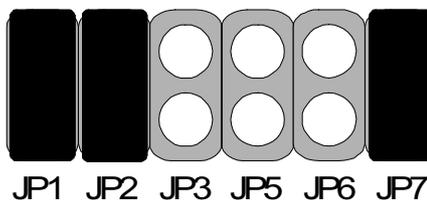
6. 550MHz

JP1	JP2	JP3	JP5	JP6	JP7
Short	**Open**	**Open**	**Open**	**Open**	**Short**

JP1 JP2 JP3 JP5 JP6 JP7
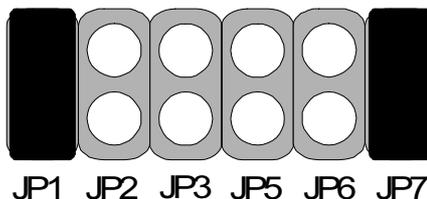
CPU TYPE SELECTION LIST

JP1~JP5 (For RATIO select)

RATIO	JP1	JP2	JP3	JP5
3.0	Short	Short	Open	Short
3.5	Short	Open	Open	Short
4.0	Short	Short	Short	Open
4.5	Short	Open	Short	Open
5.0	Short	Short	Open	Open
5.5	Short	Open	Open	Open

JP6 (For BUS clock)

CLOCK	JP6
66 MHz	Short
100 MHz	Open

JP7 (CPU BUS Clock manual / Auto detect)

CLOCK	JP7
Default (Auto Detect)	Short
Force BUS CLOCK up to 100 MHz	Open

**Short**   **Open**

FAN CONNECTOR

JP9
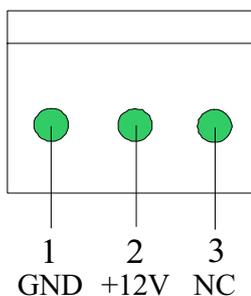
**JP9:**   This fan is used in CPU COOL FAN.

1   2   3
GND   +12V   NC

How to install the CPU

Prepare the motherboard by installing the supplied Slot 1 CPU, then install the CPU according to the instructions supplied. Complete the processor installation by installing the supplied heat-sink support, and connecting the heat sink power cable to the motherboard connector.

Referential Steps of installing the Slot 1 CPU
This part is only for CPU installation. Regarding to the heat-sink part, please refer the instructions supplied.

1. Inspect the area around Slot1, verify the position of four around-sockets, and then locate the small protruding rectangular tab on the side of Slot1 (see diagram).

Around-Sockets

The small protruding rectangular tab
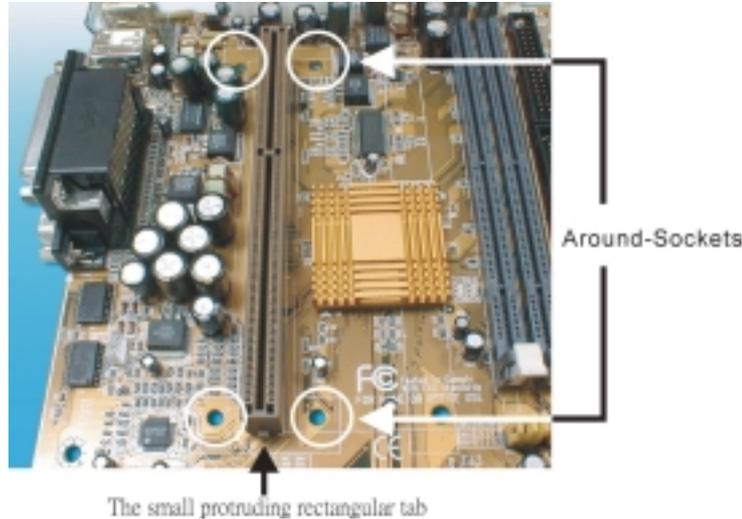
2. Examine the CPU Retention and attachments. There are three sets of attachments: 1. The stand itself. 2. The CPU locking caps (two). 3. The plastic screws (four).
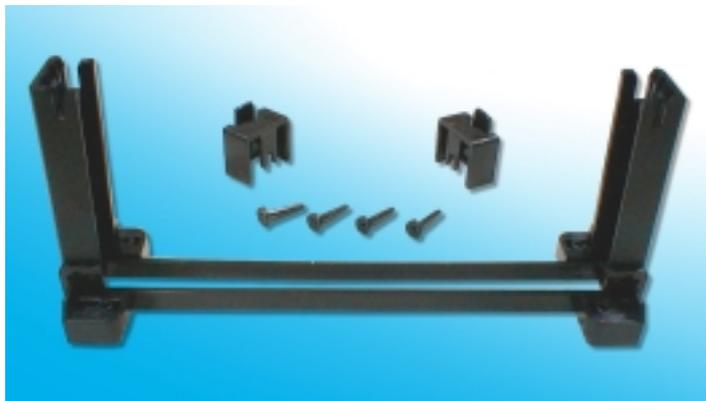

3. Once the above two steps have been completed, slot the CPU Retention into Slot1. Pull up the CPU stays on both side of the CPU Retention so they are horizontal, at an angle of 90°. Then the side of the CPU Retention with no mark on it and the side of Slot1 with the small rectangular tab should be on the same side.
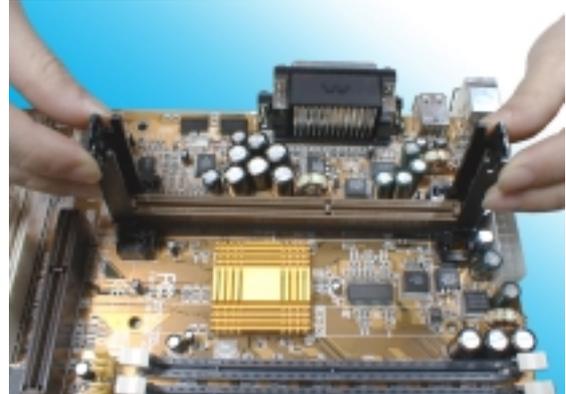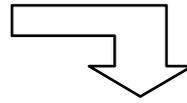
⚠ The CPU Retention has to go in a particular direction. Make sure that it is the right way round before slotting it in. Do not force it in, otherwise you may damage the motherboard and CPU Retention.

4. Ensure that the CPU Retention has been slotted all the way in, then screw the four plastic screws into the sockets on each side of Slot1 to make sure that the CPU Retention is fixed firmly in position.
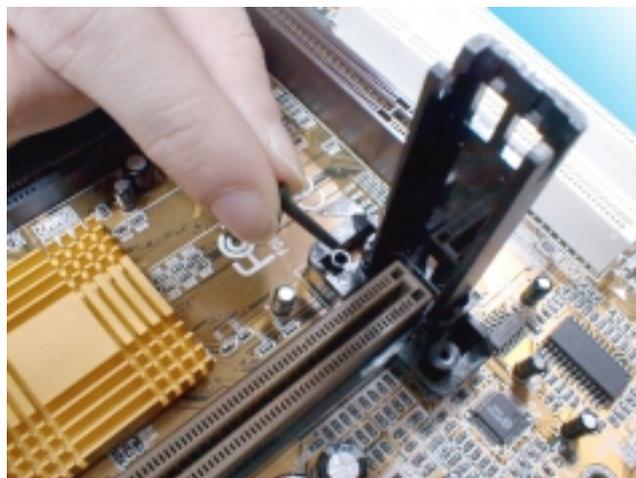

5. Slide the CPU slowly into Slot1 along the two sides of the CPU Retention.

Note: Some Slot 1 processors with different packing maybe need the caps to let them be fixed. So if it need the caps during installing Slot 1 CPU, please follow this step: " <u>Fix the CPU locking caps onto the two ends of the CPU stays</u> ".

6. Connect the CPU Fan head to the CPU Fan connector on the motherboard, and make sure that the CPU has been fixed firmly onto the motherboard. You have now completed assembly.
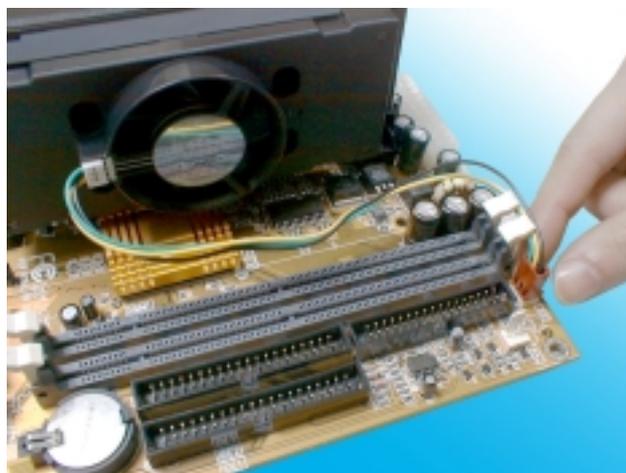
SLOT 1 CPU Disassembly/Replacement Procedures

1. Move the protruding part on top of the CPU locking caps gently outwards, so that the locking caps come off.

2. Pull the CPU Fan connector off the motherboard, and then gently pull the CPU out from Slot1.

3. If you need to install another CPU, follow the instructions for Slot1 CPU installation given above.

CPU & Power Supply Fan Connectors (3-pin FanPWR)

These connector support cooling fans of 500mAMP (6WATT) or less. Orientate the fans so that the heat sink fins allow airflow to go across the onboard heat sink(s) instead of expansion slots. Depending on the fan manufacturer, the wiring and plug may be different. The red wire should be positive, while the black should be ground. Connect the fan's plug to the board taking into consideration the polarity of this connector.

> The "Rotation" signal is to be used only by a specially designed fan with rotation signal.

 The CPU and motherboard will overheat if there is no airflow across the CPU and onboard heatsinks. Damage may occur to the motherboard and the CPU fan if these pins are incorrectly used.

MEMORY INSTALLATION

No jumper setting is necessary for DRAM setting; BIOS will check DRAM type and size automatically. This motherboard contains 2 by 168-pin

DIMM socket (DIMM1, DIMM2). The motherboard has a table-free (or auto-bank) feature; the user can install DIMM into any bank. The two DIMM Sockets permit system memory expansion from 8MB to 256MB. Each bank provides a 64-bit wide data path. You can install 100MHz SPD RAM or 66MHz SD RAM into the motherboard, using your CPU clock to make the selection.

If you want to install more memory and there are no sockets available, you must remove some installed modules and replace them with the upgrade modules.

If you have to do this, be sure to identify what type of memory is already installed. In some cases, there may be a mix of module types. You can confirm this by checking the configuration screen that appears while the computer is starting up. Press the pause key to temporarily interrupt the start-up so that you have more time to read the screen. When you're done, press any key to resume.

Remove the lowest performance and smallest size modules and replace them with the upgrades.

168-pin DIMM Module
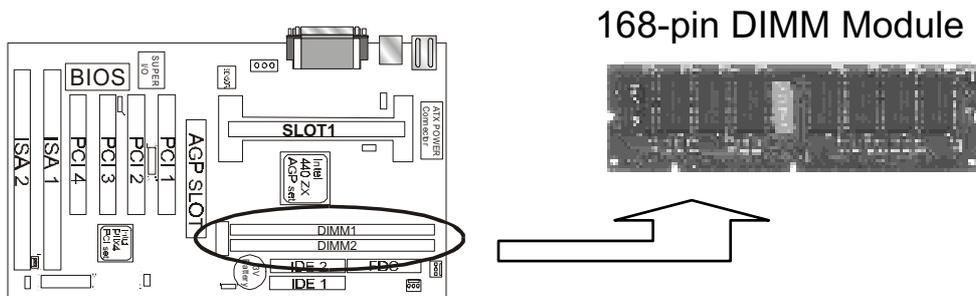
## How to Install DIMM Modules on Motherboard

1. The SDRAM sockets are keyed with notches and the DIMMs are keyed with cut-outs so that they cannot be installed incorrectly. Check that the cut-outs on the DIMM edge connector match the notches in the SDRAM socket. In other words, before inserting the DIMM, make sure the pin1 of the DIMM matches with the pin1 on the DIMM socket.

2. Push down the latches on each side of the SDRAM socket.
3. Install the DIMM into the socket and press it carefully but firmly down so that it seats correctly. The latches at either side of the socket will be levered upwards and latch on the edges of the DIMM when it is installed correctly.
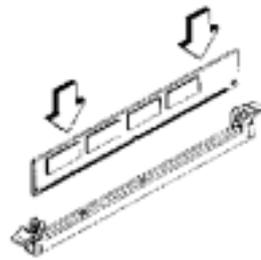
Install DIMM

How to Remove DIMM Modules from Motherboard

1. Press the holding the latches at either side of the socket outward to release the DIMM.
2. Gently pull the DIMM out of the socket.

Remove DIMM

No jumper setting is necessary for DRAM setting, BIOS will check DRAM type and size automatically. The motherboard contains 2 by 168-pin DIMM socket (DIMM1, DIMM2). The motherboard has table-free (or auto-bank) feature and user can install DIMM into any bank. The two DIMMs Sockets for system memory expansion from 8MB to 256 MB. Each bank provides 64-bit wide data path. You can install

100MHz SPD RAM or 66MHz SD RAM into this motherboard, select by your CPU clock.

NOTE: Samples of System Memory Combinations Options

DIMM1	DIMM2	TOTAL
8MB	------	8MBytes
------	8MB	8MBytes
8MB	8MB	16MBytes
------	16MB	16MBytes
16MB	------	16MBytes
16MB	8MB	24MBytes
8MB	16MB	24MBytes
16MB	16MB	32MBytes
32MB	------	32MBytes
------	32MB	32MBytes
8MB	32MB	40MBytes
32MB	32MB	64MBytes
------	64MB	64MBytes
64MB	------	64MBytes
64MB	64MB	128MBytes
:	:	:
:	:	:
128MB	128MB	256MBytes

Chapter 3
Award BIOS Setup

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

Entering Setup

Power on the computer and press <Del> immediately will 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 <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

TO ENTER SETUP BEFORE BOOT PRESS CTRL-ALT-ESC OR DEL KEY

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" button on the system case.   You may also restart by simultaneously press <Ctrl>, <Alt> and <Del> 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 DEL TO ENTER SETUP

Control Keys

Up Arrow	Move to previous item
Down Arrow	Move to next item
Left Arrow	Move to the item in the left hand

Right Arrow Move to the item in the right hand
Esc Key   Main Menu Quit and not to save changes to CMOS
             Status Page setup menu and Option Page
             Setup Menu Exit current page and return to Main Menu
PgUp Key   Increase the numeric value or make changes
PgDn Key   Decrease the numeric value or make changes
F1 Key   General help, only for Status Page Setup Menu and Option
             Setup Menu
F2 Key   Change color from total 16 colors
F3 Key   Calendar, only for Status Page Setup Menu
F4 Key   Reserved
F5 Key   Restore the previous CMOS value from BIOS, only
             for Option Page Setup Menu
F6 Key   Load the default CMOS value from BIOS default table, only
             for Option Page Setup Menu
F7 Key   Load the default
F8 Key   Reserved
F9 Key   Reserved
F10 Key   Save all the CMOS changes, only for Main Menu

Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the Screen. Use arrow keys to select among the items and press to accept or enter the **sub-menu.**

ROM PC/ISA BIOS   (2A69KPND)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURE SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD BIOS DEFAULTS	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	←↑↓→ : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color

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 menu provides functions for Green products by allowing users to set the timeout value for monitor and HDD.

PNP / PCI CONFIGURATION SETUP

This menu allows the user to modify PNP / PCI configuration function.

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

This section page includes all the items of IDE hard drive and Programmed Input / Output features.

Supervisor / User Password Setting

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 changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The item in Standard CMOS Setup Menu are divided into several 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.
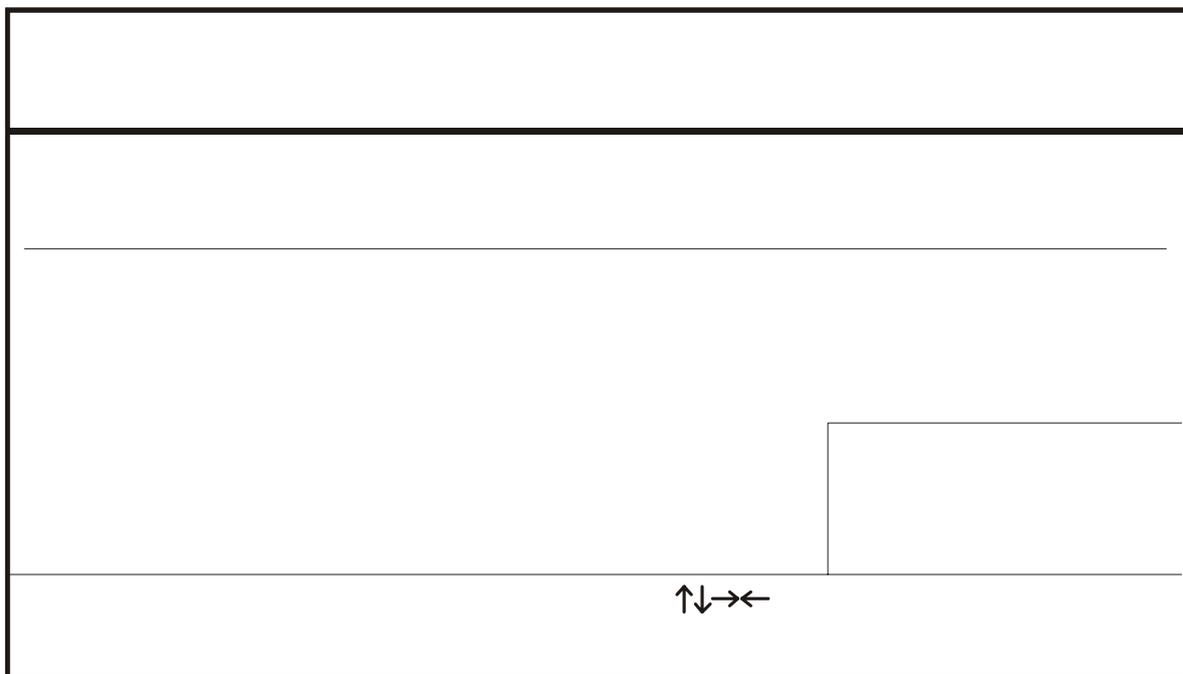
Date and Time

The Date and Time items show the current date and time held by your computer. If you are running a Windows operating system, these items will automatically be updated whenever you make changes to the Windows Date and Time Properties utility.

Hard Disks   *Default: Auto*

These items show the characteristics of any hard disk drives on the four available IDE channels. (Note that SCSI hard disk drives do not appear here.) You can automatically install most modem hard disks using the IDE HDD Auto Detect Option from the main menu. However, if you find that a drive

cannot be automatically detected, you can use these items to select USER, and then manually enter the characteristics of the drive. The documentation provided with your drive provides the data you need to fill in the values for CYLS (cylinders), HEAD (read/write heads), and so on.

The documentation provided with the drive may not tell you what value to use under the MODE heading. If the drive is smaller than 528 NM, set MODE to Normal. If the drive is larger dm 528 NM and it supports Logical Block Addressing, set MODE to LBA- Very few high-capacity drives do not support Logical Block Addressing. If you have such a drive, you might be able to configure it by setting the MODE to Large. If you're not sure which MODE setting is required by your drive, set MODE to Auto and let the setup utility try to determine the mode automatically.

Drive A and Drive B   D*efault: 1.44M, 3.5 in., None*

These items define the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Floppy 3 Mode Support   D*efault: Disabled*

Floppy 3 mode refers to a 3.5" diskette with a capacity of 1.2MB. Floppy 3 mode is sometimes used in Japan.

Video   D*efault: Disabled*

This item defines the video mode of the system. This motherboard has a built-in VGA graphics system so you must leave this **item** at the default value.

Halt On   D*efault: All. But Keyboard*

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which kind of errors in the POST are sufficient to halt the system.

Base, Extended and Other Memor*y*   D*efault: All. But Keyboard*

These items show how much memory is available on the system. They are automatically detected by the system so you cannot manually make changes to these items.

BIOS Features Setup

ROM PCI/ISA BIOS (2A69KPND)
BIOS FEATURE SETUP
AWARD SOFTWARE, INC

Virus Warning	:	Disabled	Video BIOS Shadow	:	Enabled
CPU Internal Cache	:	Enabled	C8000-CBFFF Shadow	:	Disabled
External Cache	:	Enabled	CC000-CFFFF Shadow	:	Disabled
CPU L2 Cache ECC Checking	:	Enabled	D0000-D3FFF Shadow	:	Disabled
Processor Number Feature	:	Enabled	D4000-D7FFF Shadow	:	Disabled
Quick Power On Self Test	:	Enabled	D8000-DBFFF Shadow	:	Disabled
Boot Sequence	:	A, C ,SCSI	DC000-DFFFF Shadow	:	Disabled
Swap Floppy Drive	:	Disabled			
Boot Up Floppy Seek	:	Enabled			
Floppy Disk Access Control	:	R/W			
Boot Up NumLock Status	:	On			
Gate A20 Option	:	Fast			
Typematic Rate Setting	:	Disabled			
Typematic Rate (Chars/Sec)	:	6			
Typematic Delay (Msec)	:	250			
Security Option	:	Setup			
PCI/VGA Palette Snoop	:	Disabled	Esc : Quit	↑↓→← : Selection Item	
OS Select For DRAM > 64MB	:	Non-OS2	F1 : Help	PU/PD/+/- : Modify	
HDD S.M.A.R.T. capability	:	Enabled	F5 : Old Values	(Shift) F2 : Color	
Report No FDD For Win95	:	No	F6 : Load BIOS Default		
			F7 : Load Setup Default		

Virus Warning   D*efault: Enabled*

This category flashes on the screen. During and after system boots up, any
attempt to write to the boot sector or partition table of the hard disk drive will
halt the system and the following error message will appear, in the mean
time , you can run anti-virus programs to locate the problem.

!WARNING!
Disk boot sector is to be modified
Type "Y" to accept write or "N" to abort write
Award Software, Inc.

Enabled   Activate automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or   hard disk partition table.

Disabled   No warning message to appear when anything attempt to access the boot sector or hard disk partition table.

CPU Internal Cache   D*efault: **Enabled***

All the processors that can be installed in this motherboard use internal (level 1) cache memory to improve performance. Leave this item at the default value Enabled for better performance.

External Cache   D*efault: Ena**bled***

Most of the processor cartridges that can be installed in this motherboard have (level 2) external cache memory (the Celeron-266MHz is an exception). Only enable this item if your processor cartridge has external cache memory.

CPU L2 Cache ECC Checking   D*efault: **Enabled***

This item can be used to enable ECC (Error Checking Code) for the level-2 cache memory. We recommend that you leave this item at the default value Enabled.

Processor Number Feature   D*efa**ult: Enabled***

This item can be used to enable Intel Pentium III processor serial number. It can let others know who is you when you on the web. If you want keep your secrets, please choose disabled.

Quick Power On Self Test   D*efault: **Enabled***

You can enable this item to shorten the power on testing and have your system start up a little faster.

Boot Sequence   D*efa**ult: A, C, SCSI***

This item defines where the system will look for an operating system, and the order of priority. You can boot an operating system from many locations including a SCSI device, a ZEP drive, a floppy diskette drive, or an LS-120 high-capacity diskette drive.

Swap Floppy Drive   D*efault: Disabled*

If you have two floppy diskette drives in your system, this item allows you to swap around the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

Boot Up Floppy Seek   D*efault: Disabled*

During POST, BIOS will determine if the Floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks while 720K, 1.2M and 1.44M drive type as they are all 80 tracks.

Enabled: BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.

Disabled: BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status   D*efault: On*

This item defines if the keyboard Num Lock key is active when your system is started.

Gate A20 Option   D*efault: Fast*

This option provides compatibility with older software written for the 286 processor. Leave this item at the default value Fast.

Typematic Rate Setting   D*efault: Disabled*

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one key instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.

Typematic Rate (Chars/Sec)   D*efault: 6*

When the typematic rate is enabled, this section allows you select the rate at which the keys are repeat.

6	6 characters per second	15	15 characters per second
8	8 characters per second	20	20 characters per second

| 1 0 | 1 0 characters per second | 24 | 24 characters per second |
| 12 | 12 characters per second | 30 | 30 characters per second |

Typematic Delay (Msec)   D*efault: 250*

When the typematic rate is enabled, this section allows you select the delay between when the key was first depressed and when the acceleration begins.

250	250 msec
500	500 msec
750	750 msec
1000	1000 msec

Security Option   D*efault: Setup*

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the setup utility.

PCI/VGA Palette Snoop   D*efault: Disabled*

This item can help overcome problems that are caused by some non-standard VGA cards. We recommend that you leave this item at the default value Disabled.

OS Select For DRAM > 64 MB   D*efault: Non-OS2*

This item is required if you have installed more than 64 NM of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default Non-OS2.

HDD S.M.A.R.T Capability   D*efault: Enabled*

S.M.A.R.T is an industry acronym for Self-monitoring, Analysis and Reporting Technology. If the documentation of your hard disk states that S.M.A.R.T. is supported, you can enable this item.

Report No FDD For WIN 95   D*efault: No*

Set this item to Yes BIOS will report FDD to Win95. If in standard CMOS setup, set Drive A to none, and set this item to yes. Inside Win95, My Computer and File manager Disk(A:) will show Removable Disk (A:).

Video BIOS Shadow   D*efault: Enabled*

This item allows the video BIOS to be copied to system memory for faster performance.

XXXXX-XXXXX **Shadow**   D*efaul***t: Disabled**

These items allow the BIOS of other devices to be copied to system memory for faster performance.

Chipset Features Setup

ROM PCI/ISA BIOS (2A69KPND)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC

Auto Configuration	: Enabled	Power-Supply Type	: ATX
EDO DRAM Speed Selection	: 60ns	Auto Detect DIMM/PCI Clk	: Enabled
EDO CASX# MA Wait State	: 1	Spread Spectrum Modulated	: Disabled
EDO RASX# Wait State	: 1	CPU Host/PCI CLOCK	: Default
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge time	: 3		
SDRAM CAS latency time	: 3		
SDRAM Precharge Control	: Disabled		
System BIOS Cacheable	: Enabled		
Video BIOS Cacheable	: Enabled		
Video RAM Cacheable	: Enabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled	Esc : Quit ↑↓→← : Selection Item	
Passive Release	: Enabled	F1 : Help PU/PD/+/- : Modify	
Delayed Transaction	: Disabled	F5 : Old Values (Shift) F2 : Color	
AGP Aperture Size (MB)	: 64	F6 : Load BIOS Default	
		F7 : Load Setup Default	

Auto Configuration   D*efault: En***abled**

This function can make BIOS auto-setting the best DRAM parameter.

EDO DRAM Speed Selection   D*e***fault: 60ns**

This item define the timing parameters for the system memory. We recommend that you leave these items at the default values EDO 60ns.

EDO CASX# MA Wait State	D*efault: 1*
EDO RASX# Wait State	D*efault: 1*
SDRAM RAS-to-CAS Delay	D*efault: 3*
SDRAM RAS Precharge Time	D*efault: 3*
SDRAM CAS latency Time	D*efault: 3*
SDRAM Precharge Control	D*efault: Di**sabled***

Theses items are setting by **Auto Configuration.**

Auto Configuration : By default, this parameter is set to Enabled. This automatically enters and locks the optimum settings for the chipset. Disable the parameter to unlock the settings without changing them.

System BIOS Cacheable	D*efau**lt: Enabled***

System BIOS segment is cacheable if this item been enable.

Video BIOS Cacheable	D*efault: Enabled*

Video BIOS segment is cacheable if this item been enable.

Video RAM Cacheable	D*efault: Enabled*

Video RAM segment is cacheable if this item been enable.

8 Bit I/O Recovery Time	D*efault: 1*

The recovery time is the length of time, measured in CPU clocks, which the system will be delay after the completion of an I/O request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O. This item allows you to determine the recovery time allowed for 8- bit 1/0. Choices are from NA, 1 to 8 CPU clocks,

16 Bit I/O Recovery Time	D*efault**: 1***

This item allows you to determine the recovery time allowed for 16-bit 1/0. Choices are from NA, I to 4 CPU clocks.

Memory Hole At 15M-16M	D*efault: Disabled*

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory below 16MB.

B687Z

Passive Release   D*efault: Enabled*

When Enabled, CPU to PCI bus accesses are allowed during passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.

Delayed Transaction   D*efault: Disabled*

This chipset has an embedded 32-bit posted write buffer to support deadly transactions cycles. Select Enabled to support compliance with PCI specification version 2. 1.

AGP Aperture Size (MB)   D*efault: 64*

Select the size of the AGP aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycle that hit the aperture range are forwarded to the AGP without any translation. The choice 4, 8, 16, 32, 64, 128, 256.

Power-Supply Type   D*efault: ATX*

You can select your Power supply type, ATX or AT..ect.

Auto Detect DIMM/PCI Clk   D*efault: Enabled*

If this item is enabled, the unused DIMM and PCI slot clock will be disabled. If this item is disabled the unused DIMM and PCI slot will still get the active clock signal.

Spread Spectrum Modulated   D*efault: Disabled*

Enable / Disable this item the BIOS will Enable / Disable the clock generator spread spectrum .

CPU Host/PCI Clock   D*efault: Default*

This item allows other PCI devices to work concurrently with the host PCI IDE channel. We recommend that you leave this item at the default value Disabled.

Power Management

ROM PCI/ISA BIOS (2A69KPND)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	** Reload Global Timer Events **
PM Control by APM	: Yes	IRQ [3-7,9-15],NMI : Disabled
Video Off Method	: V/H SYNC+Black	Primary IDE 0 : Disabled
Video Off After	: Standby	Primary IDE 1 : Disabled
MODEM Use IRQ	: 3	Secondary IDE 0 : Disabled
Doze Mode	: Disable	Secondary IDE 1 : Disabled
Standby Mode	: Disable	Floppy Disk : Disabled
Suspend Mode	: Disable	Serial Port : Enabled
HDD Power Down	: Disable	Parallel Port : Disabled
Throttle Duty Cycle	: 62.5 %	
PCI/VGA Act-Monitor	: Enabled	
Soft-off by PWR-BTTN	: Instant-Off	
CPUFAN off In Suspend	: Enabled	
Resume by Ring	: Enabled	
Resume by Alarm	: Disabled	
		ESC: Quit ↑↓→←: Select Item
		F1 : Help PU / PD / + / - : Modify
Wake Up On LAN	: Enabled	F5 : Old Values (Shift)F2 : Color
IRQ 8 Break Suspend	: Disabled	F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

ACPI function   D*efault: Enabled*

When Enabled, this function can save the power of your system.

Power Management   D*efault: User Define*

This category allows you to select the type (or degree) of power saving and is directly related to the following modes : Doze; Standby; Suspend; HDD Power Down.

Min.Power Saving	Minimum power management. Doze =I hr.; Standby= I hr.; Suspend= I hr.; HDD Power Down=15min	
Max. Power Saving	Maximum power management only available for SL CPU.Doze=lmin.; Standby=lmin.;Suspend=l min.;HDD Power Down= l min	
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from I min. to I	

hr. except for HDD Power Down which ranges from I to 15min. and <u>disable</u>

If you would like to use Software Power-off Control function, you cannot choose" Disabled "here, and should select "Yes" in PM Control by APM.

PM Control by APM   D*efault: Yes*

Windows 95 and 98 have built-in power management capabilities called APM (advanced power management). When you enable this item, you allow the APM routines in Windows to operate on your system.

Video Off Method   D*ef**ault: V/H SYNC+Blank***

This determines the manner in which the monitor is blanked.

V/H SYNC+ Blank	This selection will cause the system to turn off the vertical and horizontal sync. ports and write blanks to the **video buffer**
Blank Screen	This option only writes blanks to the video **buffer**
DPMS	Initial display power management **signaling**

Video Off After   D*efa**ult: Standby***

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

N/A	Monitor will remain on during power saving modes.
Suspend	Monitor blanked when the systems enters the Suspend mode.
Standby	Monitor blanked when the system enters Standby mode.
Doze	Monitor blanked when the system enters any power saving mode.

MODEM Use IRQ   D*efault: 3*

This item determines the IRQ in which the MODEM can be used.
The choice: 3,4,5,7,9, 10,11,N/A.

Doze Mode   D*efault: **Disable***

If you have selected User Define for the Power Management item, you can set this item to a selection of timeouts from 20 seconds to 40 minutes.

Standby Mode *Default: Disable*

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode *Default: Disable*

If you have selected User Define for the Power Management item, you can set this item to a selection of timeouts from 20 seconds to 40 minutes.

HDD Power Down *Default: Disable*

You can use this item to set a timeout for a hard disk powerdown. You can set a time from I to 15 minutes. If the hard disk is inactive for the time specified, it will power down. It will automatically return to full power when it is next accessed.

Throttle Duty Cycle *Default: 62.5%*

When the system enters Doze mode, the CPU clock runs only part of time. You may select the percent of time that the clock runs.

PCI/VGA Act-Monitor *Default: Enabled*

When Enabled, any video active restarts the global timer for standby mode.

Soft-off by PWR-BTTN *Default: Instant-off*

Under ACPI (advanced configuration and power interface) the system can be turned off mechanically (by the power button) or it can undergo a software power off. If the system has been turned off by software, the system can be resumed by a LAN, MODEM or ALARM wake up signal. This item allows you to define a software power off using the power button. If the value is set to Instant-Off, the power button will automatically cause a software power off. If the value is set to Delay 4 Sec. the power button must be held down for a full four seconds to cause a software power off.

CPUFAN off In Suspend *Default: Enabled*

Enabled: under suspend mode, the CPU FAN will be turn off.
Disabled: suspend mode will not turn off CPU FAN.

PowerOn by Ring *Default: Enabled*

Enabled: when system in suspend mode, it can be wake up by modem.
Disabled: it cannot be wake up by modem.

Resume by Alarm *Default: Disabled*

When Enabled, two additional lines will be added to the screen Date (of

---

2a15e740e3d258ca

Month) Alarm; Time (hh:mm:ss) Alarm to let user set the desired date and time. After power off, the system will automatic power on at the specified date and time.

Wake Up On LAN   D*efault: **Enabled***

Enabled: If you have installed LDCM administrator software, and any client side is powered off, you can wake up by LAN through the LDCM mechanism.

IRQ 8 Break Suspend   D*efault: **Disabled***

When enabled, the device which occupies the IRQ8 can wake up the system.

Reload Global Timer Events

When enabled, an event occurring on each device listed below restarts the global time for Standby mode.

  IRQ [3 -7, 9-15], NM;
  Primary IDE 0;
  Primary IDE 1;
  Secondary IDEO;
  Secondary IDEL;
  Floppy Disk;

PNP / PCI Configuration Setup

ROM PCI/ISA BIOS(2A69KPND)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

```
┌─────────────────────────────────────────┬──────────────────────────────────────┐
│ PNP OS Installed          :  No          │ PCI IDE IRQ Map To     : PCI-AUTO     │
│ Resources Contorlled By   :  Manual      │ Primary IDE INT#       : A            │
│ Reset Configuration Data  :  Disabled    │ Secondary IDE INT#     : B            │
│                                          │                                      │
│ IRQ-3   assigned  to  :  PCI/ISA PnP     │                                      │
│ IRQ-4   assigned  to  :  PCI/ISA PnP     │                                      │
│ IRQ-5   assigned  to  :  PCI/ISA PnP     │                                      │
│ IRQ-7   assigned  to  :  PCI/ISA PnP     │ Used MEM base addr     : N/A          │
│ IRQ-9   assigned  to  :  PCI/ISA PnP     │                                      │
│ IRQ-10 assigned   to  :  PCI/ISA PnP     │ Assign IRQ For VGA     : Enabled      │
│ IRQ-11 assigned   to  :  PCI/ISA PnP     │ Assign IRQ For USB     : Enabled      │
│ IRQ-12 assigned   to  :  PCI/ISA PnP     │                                      │
│ IRQ-14 assigned   to  :  PCI/ISA PnP     │                                      │
│ IRQ-15 assigned   to  :  PCI/ISA PnP     │                                      │
│ DMA-0  assigned   to  :  PCI/ISA PnP     │                                      │
│ DMA-1  assigned   to  :  PCI/ISA PnP     ├──────────────────────────────────────┤
│ DMA-3  assigned   to  :  PCI/ISA PnP     │ ESC: Quit          ↑↓→←: Select Item  │
│ DMA-5  assigned   to  :  PCI/ISA PnP     │ F1    : Help       PU / PD / + / - : Modify │
│ DMA-6  assigned   to  :  PCI/ISA PnP     │ F5    : Old Values (Shift)F2 : Color  │
│ DMA-7  assigned   to  :  PCI/ISA PnP     │ F6    : Load BIOS Defaults            │
│                                          │ F7    : Load Setup Defaults           │
└─────────────────────────────────────────┴──────────────────────────────────────┘
```

PNP OS Installed   **D**efault: No

If you have installed a Plug and Play **operating** system such as Windows 95 or 98, you can change this item to Yes. When the item is set to Yes you can use the Device Manager utility in the operating system to make changes to the configuration of expansion cards.

Resources Controlled By   **D**efault: Manual

You should leave this item at the default Auto. If you find that you cannot get a particular expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and defining the characteristics of the card in the new items which appear.

If you change this item to Manual, the display will list a series of items that allow you to define the assignments of the system interrupt lines (IRQS) and Direct Memory Access (DMA) channels. As a default, these items are set to PCI/ISA PnP. If you install an ISA Bus card that does not support PNP, and it

requires a special IRQ and DMA, you can modify the list of assignments. Change the values of the IRQ and DMA that are required to Legacy ISA.

Reset Configuration Data   D*efault: Disabled*

If you enable this item and restart the system, any PNP configuration data stored in the BIOS setup will be cleared from memory. New updated configuration data will be created.

IRQ   3/4/5/7/9/10/11/12/14/15
DMA   1/3/5/6/7

This item allows you to determine the IRQ/DNM assigned to the ISA bus and is not available to any PCI slot. Choices are Legacy ISA and PCI/ISA PnP.

PCI IDE IRQ MAP To   D*efault: PCI-AUTO*
Primary IDE INT#
Secondary IDE INT#

This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA device rather than a PCI controller. The most apparent difference is the type of slot being used. If you have equipped your *INT#* system with a PCI controller, changing this allows you to specify which slot holds the controller and which PCI interrupt (A,B,C,D) is associated with the connected hard disk. This setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary has a lower interrupt than the secondary as described in " *lot x Using INT#* "above. Select "PCI Auto" allows the system to automatically determine how your IDE disk system is configured.

Used MEM base addr   D*efault: N/A*

This item allows you to determine which basic address will not be occupied by PCI card and leave these address for some special ISA card used only.

Choices are C800, CCOO, DOOO, D400, D800, DCOO.

Assign IRQ For VGA   D*efault: Enabled*

To assign a IRQ to VGA card if you enable this item.

Assign IRQ For USB   D*efault: Enabled*

To assign a IRQ to USB Ports if you enable this item.

INTEGRATED PERIPHERALS

ROM PC/ISA BIOS(2A69KPND)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Master PIO	: AUTO	Parallel Port Mode	: ECPEPD1.9
IDE Primary Slave PIO	: AUTO	ECP Mode Use DMA	:3
IDE Secondary Master PIO	: AUTO		
IDE Secondary Slave PIO	: AUTO		
IDE Primary Master UDMA	: AUTO		
IDE Primary Slave UDMA	: AUTO		
IDE Secondary Master UDMA	: AUTO		
IDE Secondary Slave UDMA	: AUTO		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
USB keyboard Support	: Disabled		
Init Display First	: PCI Slot		
KBC input clock	: 8 MHz		
Onboard FDC Controller	: Enabled	Esc : Quit ↑↓→← : Selection Item	
Onboard UART Port 1	: 3F8/IRQ4	F1 : Help PU/PD/+/- : Modify	
Onboard UART Port 2	: 2F8/IRQ3	F5 : Old Values (Shift) F2 : Color	
UART2 Mode	: Normal	F6 : Load BIOS Default	
Half Duplex time-out	: Enabled	F7 : Load Setup Default	

IDE HDD Block Mode   D*efaul**t: Enabled**

This allows your HDD controller to use the fast block mode to transfer data to and from your HDD drive; Enabled IDE controller uses block mode ; Disabled IDE controller uses standard mode.

IDE Primary Master/Slave PIO   D*efault**: Auto**
IDE Secondary Master/Slave PIO

PIO - Programmed Input / Output, it allows the BIOS to tell the controller what it wants and then let the controller and the CPU to complete the task by themselves. This is simpler and more faster. Your system supports five modes, 0 - 4, which primarily differ in timing. When **Auto** is selected, the BIOS will select the best available mode.

IDE Primary Master/Slave UDMA   D*efault: Auto*
Auto, will support the Ultra DMA function. Disabled, will not support the Ultra DMA function.

On-Chip Primary PCI IDE   D*efault: Enabled*
On-Chip Secondary PCI IDE

This setup item allows you to either enable or disable the primary/secondary controller. You might choose to disable he controller if you were to add higher performance or specialized controller.

USB Keyboard Support   D*efault: Disabled*

Enabled will support USB keyboard in Win95 2.1 and NT 5.0 or above operating system.

Init Display First   D*efault: PCI Slot*

Use this item to define if your graphics adapter is installed in one of the PCI slots, or if you have installed an AGP graphics adapter into the AC-RP slot.

KBC input clock   D*efault: 8 MHz*

This item lets you set a frequency for the input clock of the keyboard controller. Leave this item at the default value 8 MHz.

Onboard FDC Controller   D*efault: Enabled*

This item will enable or disable the floppy disk controller.

Onboard UART Port 1   D*efault: 3F8/IRQ4*

User can select serial port IRQ. If set to Auto, system will assign an IRQ for it.   Note : Set to Auto is not recommended.

Onboard UART Port 2   D*efault: 2F8/IRQ3*

User can select serial port IRQ. If set to Auto, system will assign an IRQ for it.   Note : Set to Auto is not recommended.

UART2 Mode   D*efault: Normal*

This lets you select the Infrared mode. Choices are Standard, HPIR, and ASKIR. If you choose BPIR or ASKIR mode, the screen will show another two lines to let you choose 'IR Function Duplex' (Full or Half) and " RxD TxD Active" (Hi Lo; Lo Hi; Hi Hi-,Lo Lo).

Onboard Parallel Port   D*efault: 378/IRQ7*

This item lets you disable the built-in parallel port, or enable it by assigning an 1/0 address and an Interrupt Request Line (IRQ).

Parallel Port Mode   D*efault: ECPEPP1.9*

This item defines the operation of the parallel port. As a default it is set to ECP + EPP. If you are connected to a parallel device that supports the higher-performance

EPP (enhanced parallel port) or the ECP (extended capabilities port) make the appropriate changes to this item. If you change the parallel port to EPP or ECP, new items appear that let you

ECP Mode Use DMA D*efault: 3*

Select a DMA channel for the port. Choices are 3, 1.

Load BIOS Default

When you access "Load BIOS Default", the following message appears:

Load BIOS Default (Y/N) ?N

The BIOS Default values are the "worst case" default, and are the most stable values for the system. Use them if the system is performing erratically due to hardware problems. To load the BIOS Default values, press <Y> then <Enter>.

Load Setup Default

When you access "Load Setup Default", you are shown the following message:

Load Setup Default (Y/N) ?N

The Setup Default values represent the "best case" default, and should provided optimum system performance. To load the Setup Default values, press <Y> then <Enter>.

Supervisor / User Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or anytime you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

IDE HDD Auto Detection

This feature allows you to check all the informations on your hard disk formation. When you access "IDE HDD Auto Detection", the system executes auto detection.

At the prompt, it represents all the informations on your HDD, and you are asked:

Do you accept this drive C: (Y/N) ?

1   If you accept the test result, press [Y] then [Enter] and the result is saved, then the system continues to detect another HDD.

2   If not, press [N] then [enter] and the system continues to detect another HDD.