

# **KZM-6120**

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## **MAINBOARD MANUAL**

DOC No.: M98C09

Rev. : A0

Date : 4, 1999

Part No. : 25-10927-20

## Handling Precautions

**Warning:**

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.

Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which fits around your wrist and is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the *golden fingers* connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

## Trademark

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## Handling Precautions

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## Overview

The 1stMainboard KZM-6120 is the latest miniNLX form factor solution from 1stMainboard. The mini NLX form factor is able to incorporate the very latest in leading edge technology, while at the same time offering a high level of flexibility. Ready for the new Intel® Pentium® III processor (450-500 MHz), the 1stMainboard KZM-6120 also supports the Intel® Pentium® II (266-450 MHz) and Intel® Celeron™ (266-400 MHz) processors, at both 66 and 100 MHz Front Side Bus.

Based around the advanced architecture of the Intel® ZX chipset, the 1stMainboard KZM-6120 comes equipped with advanced onboard video and audio capabilities. The Crystal CS4280 chip provides quality onboard audio, while impressive video capabilities are provided by the Matrox Calao G200 AGP, with 8MB of SDRAM. Audio can be selected through the BIOS setup. System upgrade can be easily facilitated through the use of a Riser card.

Other features of the 1stMainboard KZM-6120 include a complete range of I/O connections and an Auto Power Failure Recovery Function, as well as Wake-on-LAN (selectable through BIOS setup), Wake-on-Ring and Chassis Intrusion functions. The 1stMainboard KZM-6120 has 2 DIMM, for up to 256 MB of SDRAM, and 2 PCI and 1 ISA expansion slot. Furthermore, the 1stMainboard KZM-6120 is PC98, Y2K and ACPI compliant.

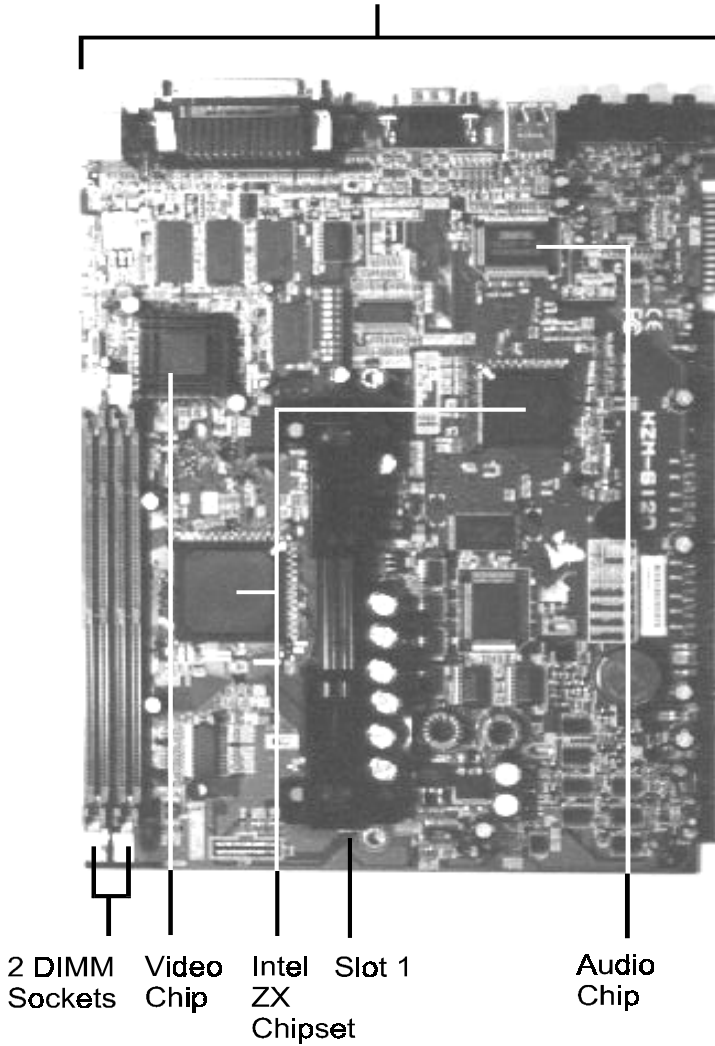
## Package Checklist

If you discover any item below was damaged or lost, please contact your vendor.

- ö The mainboard
- ö This user manual
- ö Software utilities
- ö One FDD cable (optional)
- ö One HDD cable (optional)
- ö One CD-ROM cable (optional)

## The KZM-6120 Mainboard

### Integrated I/O Connectors



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## Main Features

### ■ Easy Installation

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

### ■ Leading Edge Chipset

The Intel ZX chipset includes a CPU interface controller, integrated memory controller, integrated power management unit, concurrent PCI (PCI v.2.0 and 2.1), 3D video, IDE and ISA bus controller.

### ■ Flexible Processor Support

Onboard Slot 1 supports leading-edge processors:  
366/400/433/466/500 MHz and up.

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

The board supports the Bus frequency of 66 / 68.5 / 75 / 103 / 112 / 133MHz and the CPU/Bus frequency ratio of 2x / 2.5x / 3x / 3.5x / 4x / 4.5x / 5x / 5.5x / 6.0x / 6.5x / 7.0x / 7.5x / 8.0x . (Please read **Install the CPU** in Chapter 2 for more information).

### ■ Versatile Main Memory Support

Accepts up to 512MB totally by using two DIMMs of 8, 16, 32, 64, 128, 256, 512MB with support for lightning-fast SPD SDRAM (66/100MHz).

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

Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that accept up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives. Standard PIO Mode 3, PIO Mode 4, DMA Mode 2, DMA Mode 4 devices are also supported.

■ **USB Support**

The integrated USB connectors on the edge of the board for allowing convenient, high-speed Plug and Play connections (up to four USB ports) to the growing number of USB compliant external peripheral devices on the market.

■ **Super Multi Input/Output (I/O) Support**

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

■ **Remote Wake-Up Support**

One LAN wake-up connector, WOL, supports LAN cards equipped for remote wake-up functionality; also, an additional Wake-On-Ring connector awakes the system while the ring signal via modem.

## Intelligent Properties

This mainboard comes equipped with the most advanced new features that not only optimize the performance of the latest processors but also enhance the manageability, power management capabilities, and user-friendliness of your system. This section provides detailed information on these features, and how they are implemented on the mainboard.

■ **High-Resolution VGA Subsystem**

The onboard Matrox Calao G200 AGP graphics accelerator with 8MB SDRAM is an integrated 2D, 3D, and video accelerator for bringing great 3D performance 1600x1200 in 16 bits (for onboard 8MB SDRAM) color solutions. The mainboard also comes with a 16-bit, bi-directional video port for allowing direct connections to popular video upgrades, such as video capture/conferencing, hardware MPEG-2/DVD player.



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- Intel LANDesk<sup>®</sup> Client Manager (optional)

The mainboard comes with optional Intel LANDesk<sup>®</sup> Client Manager, a Desktop Management Interface (DMI) compliant application that simplifies local and network management of desktop client systems by monitoring PC health, and by alerting local and designated remote users of potential problems. For example, the application will indicate when memory usage is high or hardware components are likely to fail. This capability provides new levels of manageability to deliver a lower cost of PC ownership by maximizing system uptime, increasing user productivity and reducing the number of help desk calls. Because it is industry-standard DMI compliant, Intel LANDesk<sup>®</sup> Client Manager can be used with other DMI-based network management tools.

- Compact Crystal Audio Subsystem for Sound and Game

The onboard Crystal audio controller that for the PCI bus provides 64-voice XG wavetable synthesizer and support DirectSound hardware accelerator, Downloadable Sound (DLS), and DirectMusic accelerator. It offers OPL3, Sound Blaster Pro, MPU401 UART mode and joystick function for various PC game on real DOS mode that without software drivers. The board comes with three jacks: MIC\_IN, L\_IN, L\_OUT for sound access between computer system and audio devices.

## ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0 Hardware and BIOS requirement. If you install ACPI aware operating system, such as Windows 98, you fully utilized the power saving under ACPI.

It is compatible with all other none ACPI operating systems. If you want to setup ACPI feature under Windows 98, please follow the description below: Run Windows 98 setup by using **setup/p j** on the command line for installing Windows 98 with the ACPI control feature.

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

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

The major features of ACPI were listed as follows:

### ■ Soft-Off Support

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

### ■ Remote Ring-On

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

### ■ RTC Alarm

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

# Installation

The mainboard has several user-adjustable switches/jumpers on the board that allow you to configure your system to suit your requirements. This chapter contains information on the various hardware settings on your mainboard.

To set up your computer, you should follow these installation steps:

- Step 1 - Set system switches/jumpers
- Step 2 - Install memory modules
- Step 3 - Install the CPU
- Step 4 - Install expansion cards
- Step 5 - Connect cables and power supply
- Step 6 - Set up BIOS features
- Step 7 - Set up software utilities

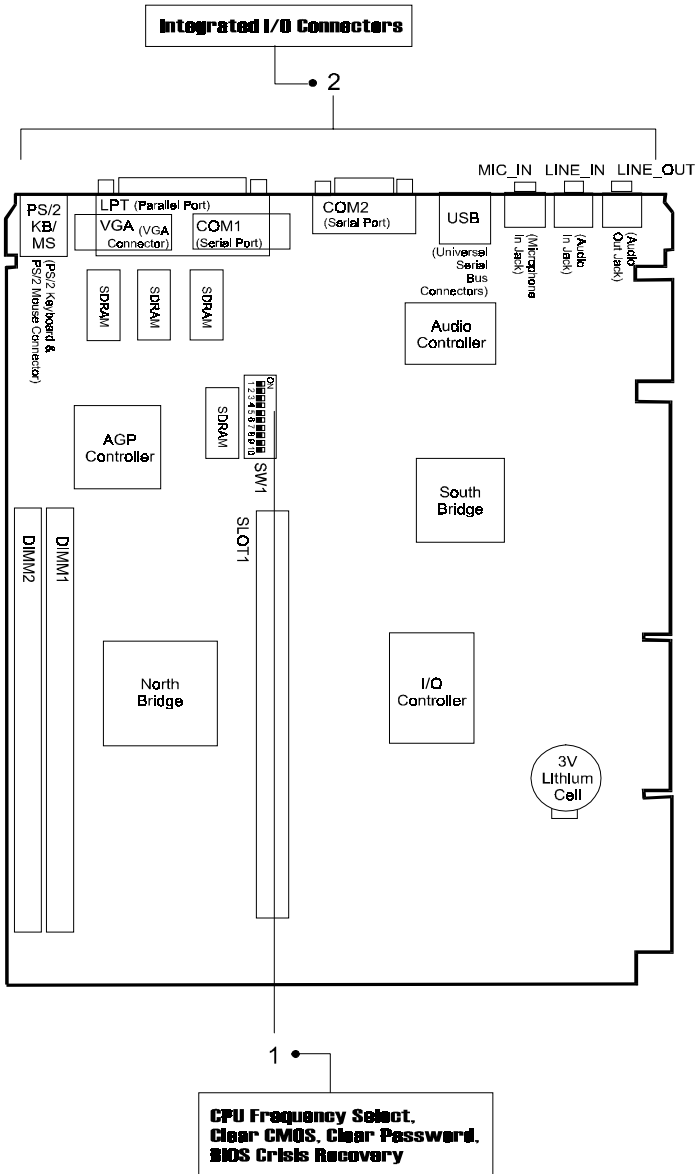


**CAUTION:** If you use an electric drill to install this Mainboard on your chassis, please wear a static wrist strap. The recommended electric drill torque is from 5.0 to 8.0 kg/cm to avoid damaging the chips' pins.

# KZM-6120

## **QUICK REFERENCE**

*This Chapter is intended to aid quick and easy installation.  
In the event that more detailed information is required, please  
consult the Installation Procedures Chapter.*



## 1). CPU Frequency Select, Clear CMOS, Clear Password

### SW1-6/7/8/9 (System Frequency Select)

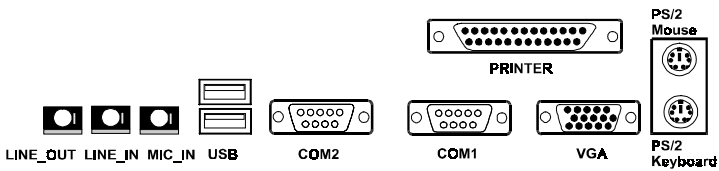
CPU Speed		SW1-6	SW1-7	SW1-8	SW1-9
100MHz	66MHz				
350MHz	233MHz	OFF	ON	OFF	ON
400MHz	266MHz	ON	OFF	ON	ON
450MHz	300MHz	OFF	OFF	ON	ON
500MHz	333MHz	ON	OFF	OFF	ON
Reserved	366MHz	OFF	OFF	OFF	ON
Reserved	400MHz	ON	ON	ON	OFF
Reserved	433MHz	OFF	ON	ON	OFF
Reserved	466MHz	ON	ON	OFF	OFF
Reserved	500MHz	OFF	ON	OFF	OFF

### SW1-4/5 (Other System Functions Enable/Disable)

Function	SW1-4	SW1-5
Clear Password	ON	-
Clear CMOS	-	ON

### SW1-1/2/3/10 (Reserved)

## 2). Integrated I/O Connectors



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### 3). Load BIOS Setup Default

#### Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

#### Load Setup Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

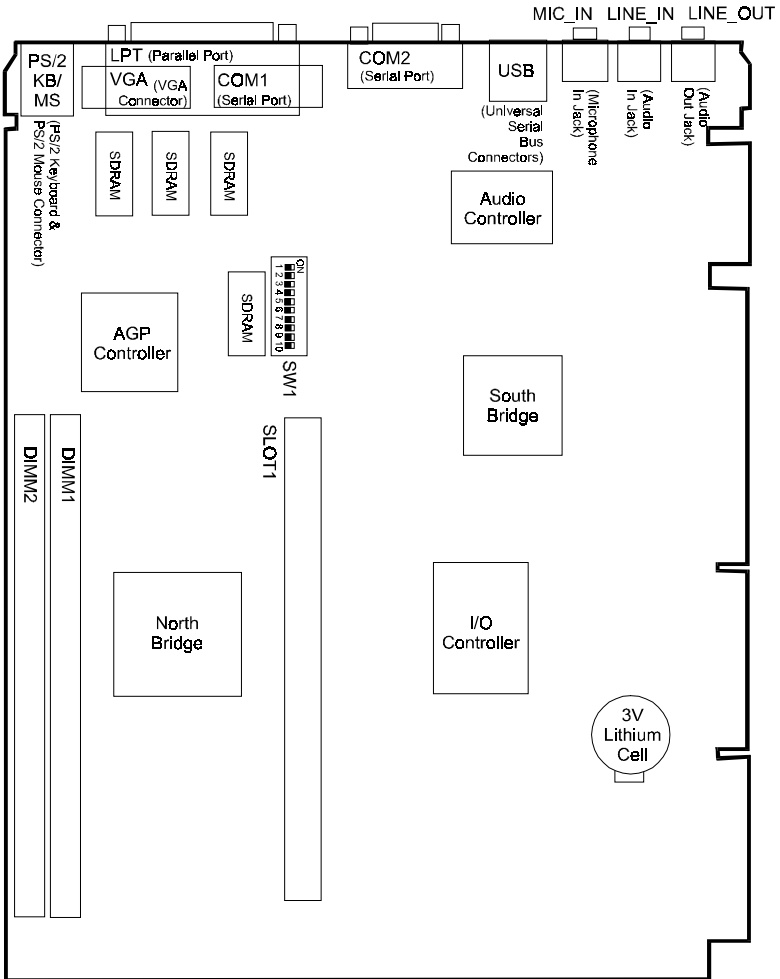
### 4). How to Upgrade BIOS

1. Format a bootable system floppy diskette by typing the command **format a:/s** in command mode.
2. Visit the the web site of the vendor and visit the BIOS Update page in the related Technical Support section.
3. Select the BIOS file you need and download it to your bootable floppy diskette.
4. Insert the bootable diskette containing the BIOS file into the floppy diskette drive.
5. Assuming that the floppy diskette drive is A, reboot the system by using the A: drive. At the A: > prompt, run the BIOS upgraded file by executing the Flash BIOS utility and the BIOS file with its appropriate extension.

***Do not turn off or reset the computer during the flash process or if there is a problem.***

## Mainboard Layout

**Chapter 2**  
**Installation**





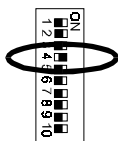
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<b>ONBOARD MARK</b>	<b>MEANING</b>	<b>PAGE</b>
SW1-4	Clear CMOS Data	2 - 8
SW1-5	Clear Password	2 - 8
SW1-6/7/8/9	CPU Internal Frequency Select	2 - 14
DIMM1/2	DIMM Socket	2 - 10
SLOT1	CPU SLOT1	2 - 11
VGA	VGA Connector	2 - 16
PS2/KB, PS2/MS	PS/2 Keyboard & Mouse Connector	2 - 16
LPT	Printer Connector	2 - 17
COM1, COM2	Serial Port Connectors	2 - 17
USB0, USB1	Universal Serial Bus Connector	2 - 18
L_OUT, L_IN, MIC_IN	Audio I/O Jacks	2 - 18

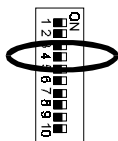
## 1). Set System Jumpers

### Clear CMOS: SW1-4

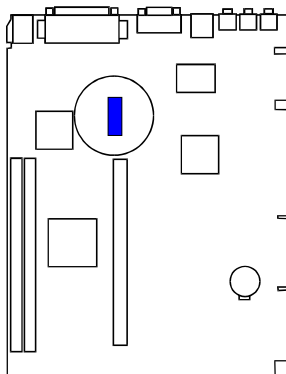
The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1). Turn off your computer, (2). Enable this feature by setting the SW1-4 to On position, (3). Turn on your computer to boot the system, (4). Turn off the computer, (5). Disable the Clear CMOS feature, (6). Turn on the computer. (7). Hold down the Delete key when boots and enter BIOS Setup to re-enter user preferences.



**Enable**

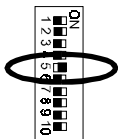


**Disable (Default)**

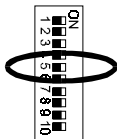


### Clear Password: SW1-5

This switch allows you to enable or to disable both the keyboard and system password settings. You may need to adjust it if you forget your password. To clear the password setting: (1). Turn off your computer, (2). Enable this feature by setting the SW1-5 to On position, (3). Turn on your computer to boot screen, (4). Turn off your computer, (5). Disable the Clear Password feature by setting the SW1-5 to Off position, (6). Turn on your computer.



**Enable**



**Disable (Default)**

## 2). Install RAM Modules

### RAM Module Configuration

This mainboard provides two onboard DIMM sockets for allowing 3.3V (unbuffered) SDRAM DIMM modules. Either 32, 64, 128, 256, or 512MB DIMM can be installed on these four sockets. The maximum total memory supported is up to 512MB.

<i>Socket</i>	<i>Acceptable Memory Module</i>		<i>Total</i>
1	32, 64, 128, 256, 512MB 168-pin 3.3V SDRAM	x1	
2	32, 64, 128, 256, 512MB 168-pin 3.3V SDRAM	x1	
<i>Total system memory allowed up to 1GB</i>			=

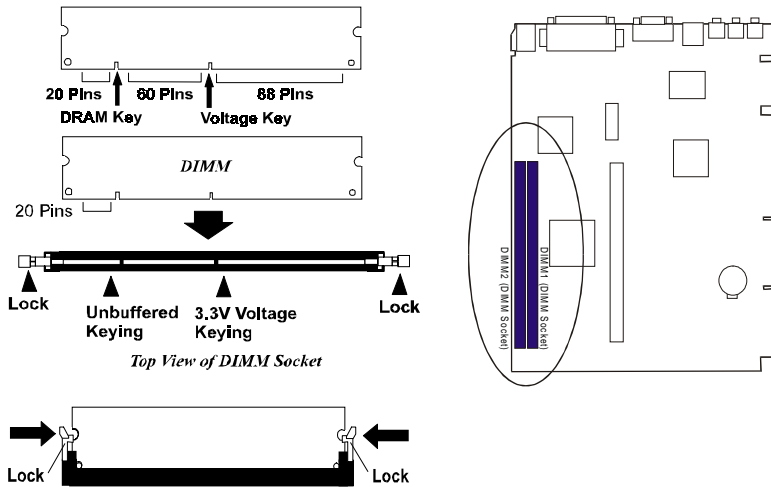
### Install and Remove DIMMs

SDRAM DIMM modules have different pin contact on each side and therefore have a higher pin density. Complete the following procedures when installing DIMMs:



**NOTE:** Do not use memory modules with more than 18 chips per module. Modules with more than 18 chips exceed the design specifications of the memory subsystem and will be unstable. The notch on the DIMM module will shift between left, center, or right to identify the type and also to prevent the wrong type from being inserted into the DIMM slot on the mainboard. Ask your retailer for the specifications before purchasing.

1. Locate the DIMM slots on the mainboard.
2. Install the DIMM straight down into the DIMM slot with both hands.
3. The clip on both ends of the DIMM slot will close up to hold the DIMM in place when the DIMM touches the slot's bottom.



Press the clips with both hands to remove the DIMM.

### 3). Install the CPU

Two options of Retention Mechanism Assembly may be offered to install your CPU on this motherboard. One is installed on the motherboard by the manufacturer. The assemblies are foldable for saving space when shipping and packing.

The other option is that the non-foldable Retention Mechanism Assembly (two pieces) and two Retention Mechanism Attachment Mount (two pieces) that packed in a plastic bag come with the board. You need to mount them before install the CPU module.

This section introduces you how to install these devices.

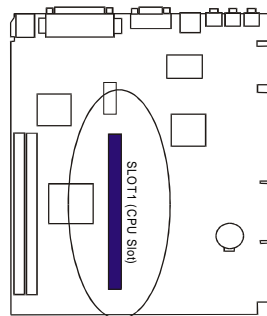
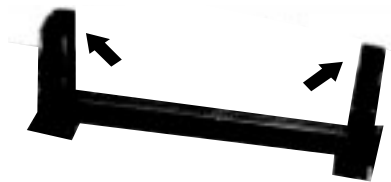
**CAUTION:**

1. Always turn the system power off before installing or removing any device.
2. Always observe static electricity precautions. See “Handling Precautions” at the start of this manual.
3. Inserting the chip incorrectly may damage the chip.

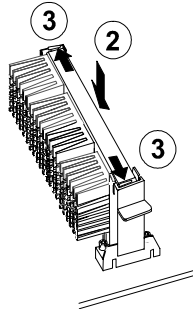
To install the CPU, do the following:

#### *1). Install with Foldable Retention Mechanism Assembly*

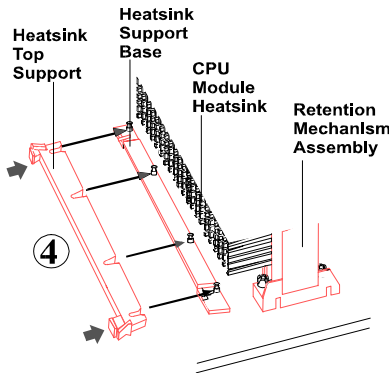
1. Pull out two sets of the Retention Mechanism Assembly upward to the right position.



2. Insert the CPU module onto the SLOT1 along the Retention Mechanism Assembly.



3. Pull the buttons outwards until click to the right positions.
4. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.

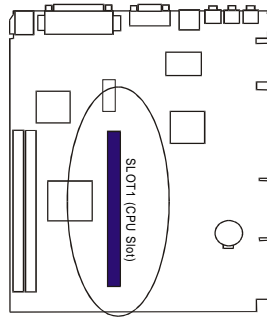
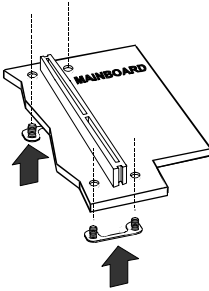


## ***II). Install with Non-Foldable Retention Mechanism Assembly***

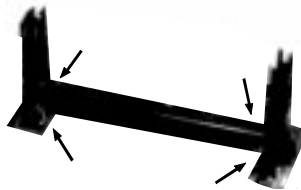
1. Unpack the plastic bag. Take out the Retention Mechanism Assembly (two pieces) and Retention Mechanism Attachment Mount (two pieces).



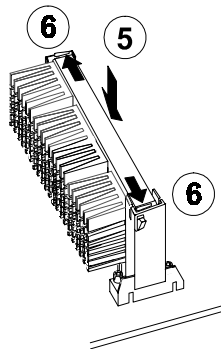
2. Locate SLOT1 on the mainboard.
3. Install two Retention Mechanism Attachment Mounts on the board.



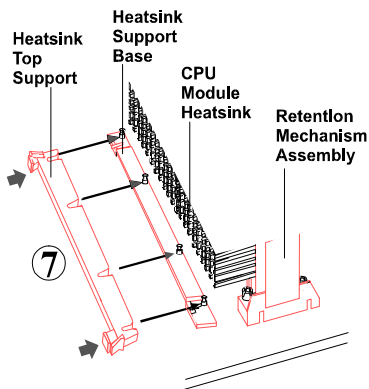
4. Place the Retention Mechanism Assembly on the board, on top of the Retention Mechanism Attachment Mounts. Affix the Retention Mechanism Assembly with four screws. (As the arrows point.)



5. Insert the CPU module onto the SLOT1 along the Retention Mechanism Assembly.
6. Pull the buttons outwards until click to the right positions.



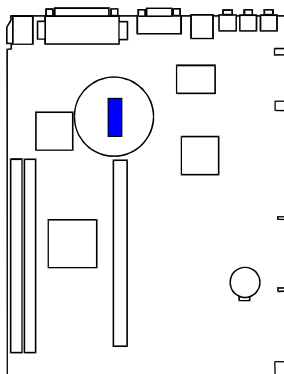
7. Hook the Heatsink Top Support to the Heatsink Support Base to affix the CPU module.



### *CPU Internal Frequency Select: SW1-6, SW1-7, SW1-8, SW1-9*

These four switches are used to decide the internal frequency of the CPU.

CPU Speed		SW1-6	SW1-7	SW1-8	SW1-9
100MHz	66MHz				
350MHz	233MHz	OFF	ON	OFF	ON
400MHz	266MHz	ON	OFF	ON	ON
450MHz	300MHz	OFF	OFF	ON	ON
500MHz	333MHz	ON	OFF	OFF	ON
Reserved	366MHz	OFF	OFF	OFF	ON
Reserved	400MHz	ON	ON	ON	OFF
Reserved	433MHz	OFF	ON	ON	OFF
Reserved	466MHz	ON	ON	OFF	OFF
Reserved	500MHz	OFF	ON	OFF	OFF



## 4). Install Expansion Cards

There is an optional riser card that connecting with this NLX mainboard for installing the expansion cards. This section describes how to connect an expansion card to one of your system's expansion slots on the riser card.





**CAUTION:** Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansion cards.

Always observe static electricity precautions.

Please read “Handling Precautions” at the start of this manual.

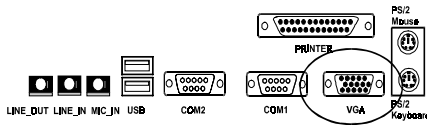
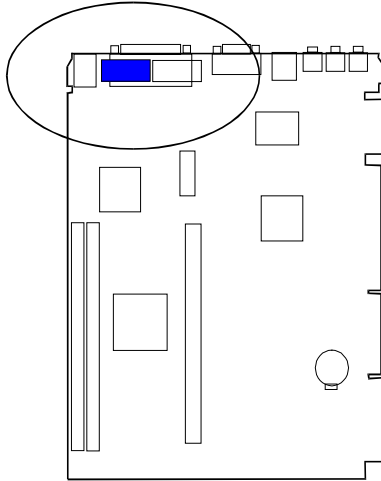
To install an expansion card, follow the steps below:

1. Remove the computer chassis cover and select an empty expansion slot.
2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.
3. Holding the edge of the expansion card, carefully align the edge connector with the expansion slot.
4. Push the expansion card firmly into the slot on the riser card. Push down on one end of the expansion card, then the other. Use this “rocking” motion until the add-on card is firmly seated inside the expansion slot.
5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.
6. Replace the computer system’s cover.
7. Setup the BIOS if necessary.
8. Install the necessary software drivers for the expansion card.

## 5). Connect Cables and Power Supply

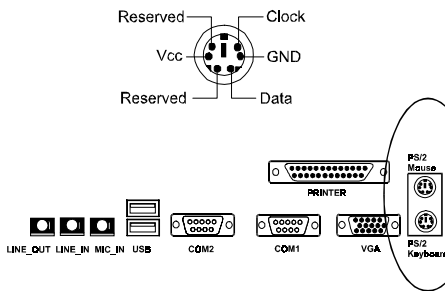
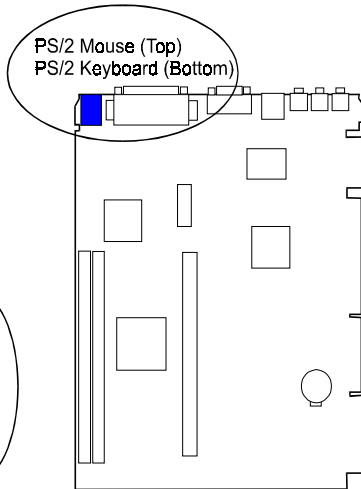
### *Video Graphics Accelerator Connector: VGA*

This 15-pin female D-sub connector is connected to your display monitor.



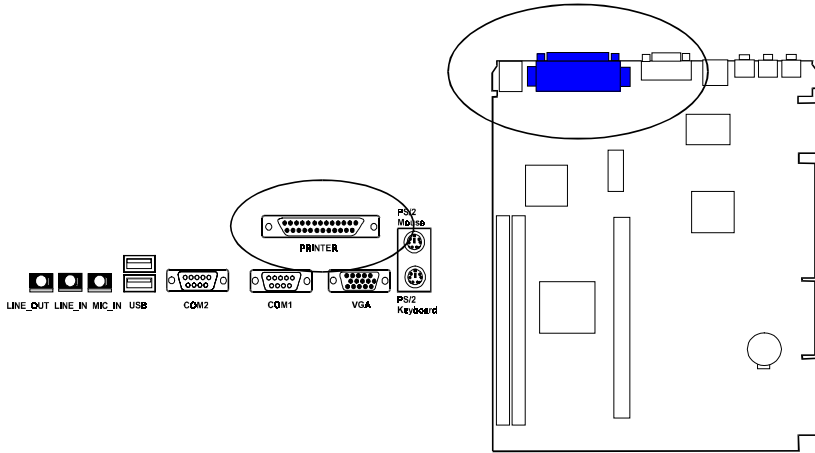
### *PS/2 Keyboard and PS/2 Mouse Connector: PS2/KB, PS2/MS*

These two 6-pin female connectors are used for your PS/2 keyboard and PS/2 mouse.



**Printer Connector: LPT**

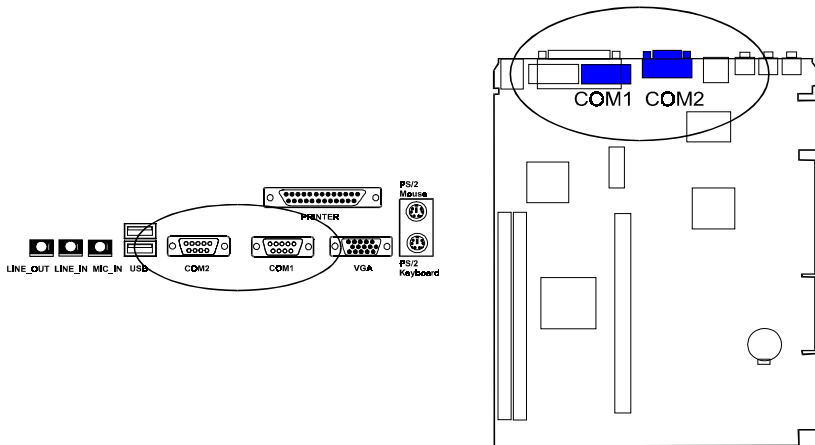
This 25-pin D-Sub female connector is attached to your printer.



**Chapter 2  
Installation**

**Serial Port Connectors: COM1, COM2**

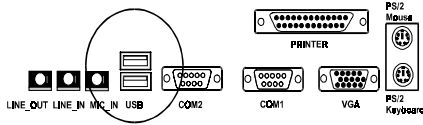
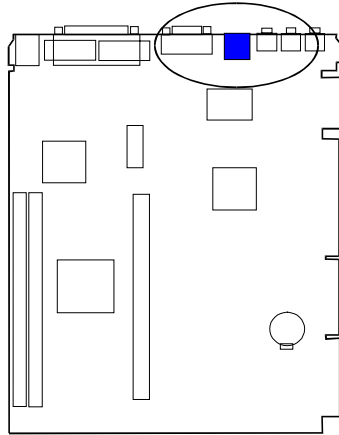
These two connectors allow you to connect with your devices that take serial ports, such as a serial mouse or a modem. Usually, it is recommended to connect your serial mouse to COM1 and your fax/modem to COM2.



### Universal Serial Bus Connectors: *USB0, USB1*

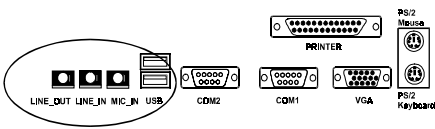
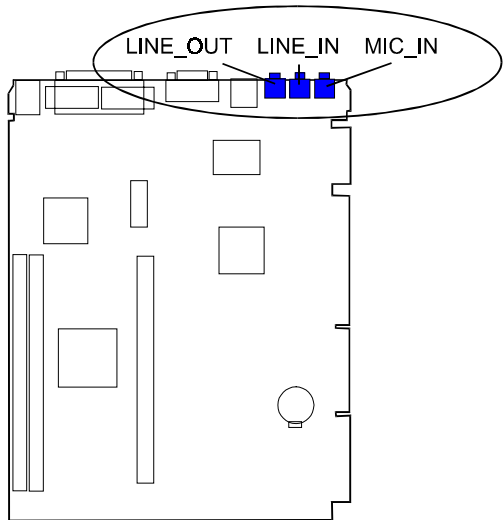
These two connectors that integrated on the edge of the board are used for linking with USB peripheral devices.

Your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.



### Audio I/O Jacks: *L\_OUT, L\_IN, MIC\_IN*

L\_OUT can be connected to headphones or preferably powered speakers. L\_IN allows tape players or other audio sources to be recorded by your computer or played through the L\_OUT. MIC\_IN allows microphones to be connected for input voice.



## BIOS Setup

The mainboard comes with the Award BIOS chip that contains the ROM Setup information of your system. This chip serves as an interface between the processor and the rest of the mainboard's components. This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

### CMOS Setup Utility

ROM PCI/ISA BIOS (2A69KF0G) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES 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    F5 : Menu in BIOS	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

A Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press Enter to run the selected program.

## Standard CMOS Setup

ROM PCI/ISA BIOS (2A69KF0G)									
STANDARD CMOS SETUP									
AWARD SOFTWARE, INC.									
Date (mm:dd:yy): Fri, April 9 1999									
Time (hh:mm:ss): 15 : 37 : 55									
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
Primary Master	: Auto	0	0	0	0	0	0	0	Auto
Primary Slave	: Auto	0	0	0	0	0	0	0	Auto
Secondary Master	: Auto	0	0	0	0	0	0	0	Auto
Secondary Slave	: Auto	0	0	0	0	0	0	0	Auto
Drive A : None					Base Memory: 640K				
Drive B : None									
Floppy 3 Mode Support : Disabled					Extended Meory: 31744K				
Video : EGA/VGA					Other Memory: 384K				
Halt On : All Errors					Total Memory: 32768K				
Esc : Quit				↑ ↓ → ← : Select Item		PU/PD+/- : Modify			
F1 : Help				(Shift)F2 : Change Color					

The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. 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.

### Hard Disk Configurations

**TYPE:** Select User to fill the remaining fields. Select Auto to detect the HDD type automatically (recommended).

**SIZE:** The hard disk size. The unit is Mega Bytes.

**CYLS:** The cylinder number of the hard disk.

**HEAD:** The read/write head number of hard disk.

**PRECOMP:** The cylinder number at which the disk drive changes the write current.

**LANDZ:** The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

**SECTOR:** The sector number of each track defined on the hard disk.

**MODE:** Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

## BIOS Features Setup

ROM PCI/ISA BIOS (2A69KF0G)	
BIOS FEATURES SETUP	
AWARD SOFTWARE, INC.	
Anti-Virus Protection	: Enabled
CPU Internal Cache	: Enabled
External Cache	: Enabled
CPU L2 Cache ECC Checking	: Enabled
Processor Number Feature	: Enabled
Quick Power On Self Test	: Enabled
Boot From LAN First	: Enabled
Boot Sequence	: A, C, SCSI
Swap Floppy Drive	: Disabled
Boot Up Floppy Seek	: Enabled
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
OS Select For DRAM > 64MB	: Non-OS2
HDD S.M.A.R.T. Capability	: Disabled
Report No FDD For WIN95	: Yes
Video BIOS Shadow	: Enabled
Esc: Quit      ↑↓←→ : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

### Anti-Virus Protection

This feature starts the virus scan tool to detect if boot virus in boot sector of the first hard disk drive when booting up.  
 The options are: Enabled (Default), Disabled.

### CPU Internal Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting.  
 The options are: Enabled (Default), Disabled.

### External Cache

When enabled, supports an optional cache SRAM. This feature allows you to disable the cache function when the system performance is unstable to run some software.  
 The options are: Enabled (Default), Disabled.

### CPU L2 Cache ECC Checking

This feature allows users to activate the CPU's Level 2 cache's error check and correction function.  
 The options are: Enabled (Default), Disabled.

### Processor Number Feature

When the feature set at Enabled, the system BIOS will allow other utilities to access the Intel Pentium III serial number while they need to do so. The settings are: Enabled (Default), Disabled.

### Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test. The options are: Enabled (Default), Disabled.

### Boot From LAN First

This feature makes the system bootable by the remote server via LAN. The options are: Enabled (Default), Disabled.

### Boot Sequence

Allows the system BIOS to first try to boot the operating system from the selected disk drive. The options are: A, C, SCSI (Default); C, A, SCSI; C, CDROM, A; CDROM, C, A; D, A, SCSI; E, A, SCSI; F, A, SCSI; SCSI, A, C; SCSI, C, A; C Only; LS/ZIP, C.

### Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up. The options are: Enabled, Disabled (Default).

### Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands. The options are: Enabled (Default), Disabled.

### Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On (Default), Off.

### Memory Parity Check

This feature enables BIOS to perform automatic memory checking upon detection of ECC or parity DRAM. The options are: Enabled, Disabled (Default).



### Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released.

The options are: Disabled (Default), Enabled.

### Typematic Rate (Chars/Sec)

This feature is available only if the above item, Typematic Rate Setting, is set at Enabled. Sets the rate of a character repeat when the key is held down. The options are: 6 (Default), 8, 10, 12, 15, 20, 24, 30.

### Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated.

The options are: 250 (Default), 500, 750, 1000 millisecond.

### Security Option

Allows you to set the security level of the system.

The options are: Setup (Default), System.

### PCI/VGA Palette Snoop

Set this feature to be enabled if any ISA adapter card installed in the system requires the VGA palette snoop function.

The options are: Disabled (Default), Enabled.

### OS Select For DRAM > 64MB

If your operating system (OS) is OS/2, select the option OS2. Otherwise, stay with the default setting Non-OS2.

The options are: Non-OS2 (Default), OS2.

### HDD S.M.A.R.T. Capability

Self-Monitoring and Analysis Reporting Technology (S.M.A.R.T.) allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed.

The options are: Disabled (Default); Enabled.

### Report No FDD For WIN 95

When the field under the Standard CMOS Setup Menu for Drive A and/or Drive B is set at None, users must set this field is set at Yes for it to function properly. Otherwise, set at No, even if field for Drive A and/or Drive B is set at None, system will still detect and recognize of a floppy drive(s).

The options are: Yes (Default), No.

### Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to the system memory for faster access.

The options are: Enabled (Default), Disabled.

## Chipset Features Setup

ROM PCI/ISA BIOS (2A89KF0G) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
SDRAM RAS-to-CAS Delay	: 3	Auto Detect DIMM/PCI Clk	: Enabled
SDRAM RAS Precharge Time	: 3	Spread Spectrum Modulated	: Enabled
SDRAM CAS latency Time	: Auto	CPU Host Clock	: Default
SDRAM Precharge Control	: Disabled		
System BIOS Cacheable	: Enabled	Onboard Audio	: Enabled
Video BIOS Cacheable	: Enabled	Onboard LAN	: Enabled
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 1		
16 Bit I/O Recovery Time	: 1		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled		
Delayed Transaction	: Disabled		
AGP Aperture Size (MB)	: 64		
		Esc: Quit	↑↓←→: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values (Shift)	F2: Color
		F6: Load BIOS Defaults	
		F7: Load Setup Defaults	

### SDRAM RAS-to-CAS Delay

This feature allows you to define the delay time that from the SDRAM RAS# active to CAS# active.

The settings are 2 Clocks or 3 Clocks. The default setting is 3 Clocks, depends on the CPU frequency and DRAM type.

### SDRAM RAS Precharge Time

Allows you to select the DRAM RAS# Precharge Time (unit: clock).

The options are: 4, 3 (Default).

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### SDRAM CAS latency Time

If any SDRAM DIMM is installed, this feature allows you to select the CAS Latency. The options are: 3 (Default), 2.

### SDRAM Precharge Control

Enabling it will make SDRAM be precharged only the bank targeted by the page miss cycle. If stay with Disabled, issue precharges all commands. The options are: Disabled (Default), Enabled.

### System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result. The options are: Disabled (Default), Enabled.

### Video RAM Cacheable

Selecting Enabled allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a memory access error may result. The options are: Enabled, Disabled (Default).

### Memory Hole at 15M-16M

When set at Enabled, the memory hole at the 15MB address will be relocated to the 15-16MB address range of the ISA cycle when the CPU access the 15-16MB address area. When set at Disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the CPU accesses the 15-16MB address area. The options are: Enabled, Disabled (Default).

### Passive Release

Set this option to Enabled to enable passive release for the South Bridge chip. The options are: Enabled (Default), Disabled.

### Delayed Transaction

Enable this feature to abort the current PCI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master. It will enhance the system performance. The options are: Enabled, Disabled (Default).

### AGP Aperture Size

It allows you to select the main memory frame size for AGP use.  
The options are 4, 8, 16, 32, 64 (Default), 128MB.

### Auto Detect DIMM/PCI Clk

Set this field at Enabled to allow auto detection of DIMM clock speed.  
The options are: Enabled (Default), Disabled.

### Spread Spectrum Modulated

This feature is used to set the spread Spectrum to be center spread type or down spread type. The options are: Enabled (Default), Disabled.

### CPU Host Clock

This feature allows you to set the CPU clock frequency. The default setting, Default, will detect your CPU clock frequency automatically. The recommended CPU clock frequencies are 66 and 100MHz. The other options may effect the system performance. If you set a unappropriate option which leads to a booting problem, keep pressing the Insert key until the display appears will solve it.  
The options are: Default (Default), 68MHz, 75MHz, 83MHz, 103MHz, 112 MHz, 133MHz, 100MHz.

### Onboard Audio

This feature allows you to select other audio cards than the onboard audio chip by setting at Disabled. The options are: Enabled (Default), Disabled.

### Onboard LAN

This feature allows you to select other LAN cards than the onboard LAN chip by setting at Disabled. The options are: Enabled (Default), Disabled.

## Power Management Setup

ROM PCI/ISA BIOS (2A69KFDG) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.	
Power Management	: User Define
PM Control by APM	: Yes
Video Off Method	: DPMS
Video Off After	: Suspend
MODEM Use IRQ	: 3
Doze Mode	: Disable
Standby Mode	: Disable
Suspend Mode	: Disable
HDD Power Down	: Disable
Throttle Duty Cycle	: 62.5%
PCI/VGA Act-Monitor	: Disabled
Soft-Off by PWR-BTTN	: Delay 4 Sec.
PWRON After PWR-Fail	: Former-Sts
Resume by Ring	: Enabled
Power On on PCI card	: Enabled
Resume by Alarm	: Disabled
Wake Up On LAN	: Enabled
IRQ 8 Break Suspend	: Disabled
** Reload Global Timer Events ** IRQ[3-7, 9-15], NMI : Disabled Primary IDE 0 : Disabled Primary IDE 1 : Disabled Secondary IDE 0 : Disabled Secondary IDE 1 : Disabled Floppy Disk : Disabled Serial Port : Enabled Parallel Port : Disabled	
Esc: Quit    **-- : Select Item F1 : Help    PUPD/+/-: Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

### Power Management

This item allows you to adjust the power management features. Select *Disable* for disabling global power management features. Select *User Define* for configuring your own power management features. *Min Saving* initiates all predefined timers in their minimum values. *Min Saving*, on the other hand, initiates maximum values.

The options are: User Define (Default), Min Saving, Max Saving, Disable.

### PM Control by APM

The option No allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting Yes will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into power saving mode when all tasks are done.

The options are: No, Yes (Default).

### Video Off Method

The option *V/H SYNC+Blank* allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. *DPMS* allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). *Blank Screen* allows the BIOS to blank off screen display by turning off the red-green-blue signals.

The options are: V/H SYNC+Blank, DPMS (Default), Blank Screen.

### Video Off After

This feature allows you to select under which mode to power off your monitor. The options are: Standby, Doze, NA, Suspend (Default).

### MODEM Use IRQ

The feature allows users to select the IRQ# of the system that is the same IRQ# as the modem use.

The settings are: Auto, 3 (Default), 4, 5, 7, 9, 10, 11.

### Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

### Standby Mode

When disabled, the system will not enter the Standby mode. The specified time option defines the idle time before enters Standby mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

### Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable (Default), 10 Sec, 1, 10, 30 Min, 1, 2, 4 Hour.

### HDD Power Down

Selecting Disable will turn off the hard disk drive (HDD) motor. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode. The option When Suspend lets the BIOS turn the HDD motor off when system is in Suspend mode.

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The options 1 Min..15 Min and When Suspend will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up. The options are: Disable (Default), 1 Min..15 Min, When Suspend.

### Throttle Duty Cycle

This option specifies the speed at which the system clock runs in power saving modes. The settings are expressed as a ratio between the normal clock speed and the power down clock speed.

The settings are 12.5 %, 25 %, 37.5 %, 50 %, 62.5 % (Default), 75%.

### PCI/VGA Act-Monitor

Enable this feature to check if your PCI/VGA monitor can enter power-saving modes. The options are: Disabled (Default), Enabled.

### Soft-Off by PWR-BTTN

This feature is designed for the case when you use an ATX power supply. The selection Delay 4 Sec. will allow the system shut down after 4 seconds after the power button is pressed. The selection Instant-Off will allow the system shut down immediately once the power button is pressed. The settings are Delay 4 Sec. (Default) or Instant-Off.

### PWRON After PWR-Fail

When the system is shut down owing to the power failure, the system will not be back to power on by itself. This feature allows you to set the system back to which power status of the system when the system power is resumed. The options are Former-Sts (Default), On, or Off.

### PowerOn by Ring

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The options are Disabled or Enabled (Default).

### Power On on PCI card

An input signal from outside contact with an installed PCI card that supports PCI Power Management Spec., then the card send a signal to awake the system from a soft off state via South Bridge. The settings are Disabled (Default) or Enabled.

### Resume by Alarm

When set at Enabled, it allows you to set the time when the system to be turned on from the system power-off status.

The settings are Disabled (Default) or Enabled.

### Date (of Month) Alarm

If Resume by Ring is set at Enabled , this feature allows you to set the day of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled. The options are: 0 (Default), 1..31.

### Time (hh:mm:ss) Alarm

If Resume by Ring is set at Enabled , this feature allows you to set the time of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled. The options are: 7: 0: 0 (Default). hh (hour) - 0, 1, 2,..., 23; mm (minute) - 0, 1, 2,...,59; ss (second) - 0, 1, 2,...,59.

### Wake Up On LAN

When set at Enabled, an input signal comes from the other client/server on the LAN awakes the system from a soft off state if connected over LAN. The options are Disabled or Enabled (Default).

### IRQ 8 Break Suspend

Enable this feature will make IRQ8 to resume the system from Suspend mode. The settings are: Disabled (Default) or Enabled.

### IRQ[3-7,9-15], NMI

Enable this feature will keep the system not in the Suspend mode when IRQ3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, NMI.

The options are: Disabled (Default) or Enabled.

### Primary IDE 0, Primary IDE 1, Secondary IDE 0, Secondary IDE 1, Floppy Disk, Serial Port, Parallel Port

Enable this feature will keep the system not in the Suspend mode when the selected device is active. The settings are Disabled or Enabled. The default setting is Disabled, except Serial Port.



## PNP/PCI Configuration

ROM PCI/ISA BIOS (2A69KF0G) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : No	Assign IRQ For USB : Enabled
Resources Controlled By : Auto	Slot 2 Use IRQ No. : Auto
Reset Configuration Data : Disabled	Slot 3 Use IRQ No. : Auto
Esc: Quit            ↑↓←→: Select Item F1 : Help            PU/PD/+-: Modify F5 : Old Values    (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

### PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows 95, select Yes. The options are: No (Default), Yes.

### Resources Controlled By

If set at Auto, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (Default), Manual.

The manual options of IRQ- / DMA- assigned to are: Legacy ISA, PCI/ISA PnP.

### Reset Configuration Data

When enabled, allows the system to clear the last BIOS configuration data and reset with the default data.

The options are: Enabled, Disabled (Default).

### Assign IRQ For USB

If stay with the default setting, Enabled, the system BIOS will assign IRQ for USB controller. USB devices can be supported under DOS.

If set at Disabled, USB controller will not use IRQ, the system will have more IRQ resource.

The options are: Enabled (Default), Disabled.

### Slot 2/3 Use IRQ No.

This feature allows you to assign the PCI IRQ numbers for PCI slots. Selecting the default, AUTO, allows the PCI controller to automatically allocate the IRQ numbers.

The options are: Auto (Default), 3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

## Load BIOS Defaults

BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

## Load Setup Defaults

Selecting *this* field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

## Integrated Peripherals

ROM PCI/ISA BIOS (2A69KF0G) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
IDE HDD Block Mode	: Enabled
IDE Primary Master PIO	: Auto
IDE Primary Slave PIO	: Auto
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	: 12 MHz
Onboard FDC Controller	: Enabled
Onboard Serial Port 1	: 3F8/IRQ4
Onboard Serial Port 2	: 2F8/IRQ3
Onboard Parallel Port	: 378/IRQ7
Parallel Port Mode	: SPP
Esc : Quit                    ↑↓ → ← : Select Item F1 : Help                    PУ/PD/+/- : Modify F5 : Old Values            (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	

### IDE HDD Block Mode

When enabled, the system executes read/write requests to hard disk in block mode. The options are: Enabled (Default), Disabled.

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### IDE Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Primary Master UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

### IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.

### On-Chip Primary PCI IDE

When enabled, allows you to use the onboard primary PCI IDE.  
The options are: Enabled (Default), Disabled.

### On-Chip Secondary PCI IDE

When enabled, allows you to use the onboard secondary PCI IDE.  
The options are: Enabled (Default), Disabled.

### USB Keyboard Support

This feature will appear only if the above item Onchip USB is set at Enabled. Set this feature to Enabled to use a USB keyboard with your system. The options are: Disabled (Default), Enabled.

### Init Display First

When you install an AGP VGA card and/or a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from which card. The options are: PCI Slot (Default), AGP.

### KBC input clock

This feature allows you to select different KBC input clocks which your keyboard actually supported. Please read your keyboard manual also for more information. The options are: 6, 8, 12 (Default), 16 MHz.

### Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated. The options are: Enabled (Default), Disabled.

### Onboard Serial Port 1

If the serial port 1 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: 3F8/IRQ4 (Default), 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

### Onboard Serial Port 2

If the serial port 2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled.

### Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller. The options are: 378/IRQ7 (Default), 278/IRQ5, 3BC/IRQ7, Disabled.

### Parallel Port Mode

Allows you to connect with an advanced printer.

The options are: SPP (Default), EPP, ECP, ECP+EPP.

### EPP Mode Select

If you select EPP or ECP+EPP in Parallel Port Mode, this feature allows you to select the EPP type version.

The options are: EPP1.9, EPP1.7 (Default).

### ECP Mode Use DMA

If you select ECP or ECP+EPP in Parallel Port Mode, this feature allows you to select Direct Memory Access (DMA) channel.

The options are: 3 (Default), 1.

## Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable password, press Enter twice when you are prompted to enter a password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if *Setup* is selected under the Security Option field and the Supervisor/User Password is enabled, you will be prompted password every time you try to enter the CMOS Setup Utility. If *System* is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time when you reboot the system or enter the CMOS Setup utility.

## IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with (Y) are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

## Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility:

**SAVE to CMOS and EXIT (Y/N)?**

## Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

**Quit Without Saving (Y/N)?**