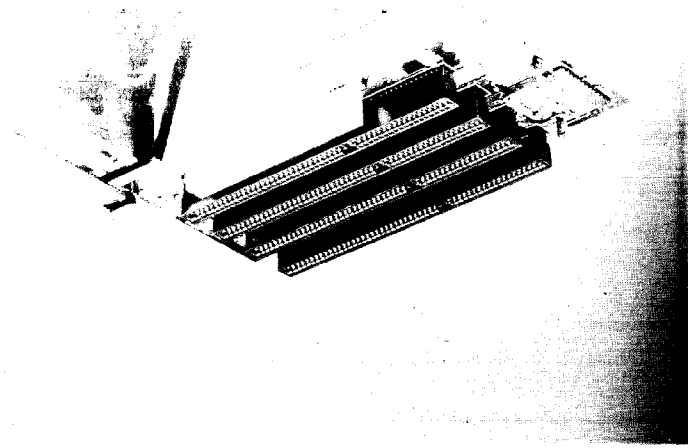


User's Notice

Static Electricity Precaution

Static electricity can easily damage your KR660 mainboard. Observing a few basic precautions can help you safeguard against damage that could result in expensive repairs. Follow the simple measures below to protect your equipment from static electricity damage:

Keep the mainboard and other system components in their anti-static packaging until you are ready to install them.

Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat.

After removing the mainboard from its original packing, only place it on a grounded, anti-static surface component side up. Immediately inspect the board for damage. Due to shifting during shipping, it is suggested that the installer press down on all of the socket IC's to ensure they are properly seated. Do this only with the board placed on a firm flat surface.

During configuration and installation, touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. The best precaution is to wear a grounded wrist strap. When handling the mainboard or an adapter card avoid touching its components. Handle the mainboard and adapter cards either by the edges or by the adapter card's case mounting bracket.

This device complies with Part 15 of FCC Rules,
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Table of Contents

1 Introduction

1.1 Overview

The KR660 mainboard integrates the Pentium II microprocessor, memory, and I/O technologies and is designed to fit into a standard ATX form factor chassis. Page 2-2 illustrates the mechanical form factor for the KR660 mainboard.

The ATX was developed as an evolution of the Baby-AT form-factor and was defined to address four major areas of improvement: enhanced ease-of-use, better support for current and future I/O, better support for current and future processor technology, and reduced total system cost. The processor is relocated away from the expansion slots, allowing them all to hold full length add-in cards. The longer side of the board is used to host more on-board I/O.

Finally, by using a power supply that is specially optimized for ATX, it is possible to reduce cooling costs and lower acoustical noise. An ATX power supply, which has a side venting, allows direct cooling of the processor and add-in cards, making a secondary fan or active heatsink unnecessary in most system applications.

1.2 How to use this Manual

This manual provides information necessary to install and operate the KR660 mainboard and is organized into four chapters. The purpose of this manual is to explain the installation procedures and operations of the mainboard as specified below.

1. Introduction — Manual information and checklist
2. Key Features — An overview specification of this mainboard
3. Installation — Instructions on how to setup the mainboard
4. BIOS setup — BIOS software setup information

1.3 Item Checklist

The KR660 mainboard should contain following items (✓). Immediately, contact your retailer if you discover any missing items, or any damage.

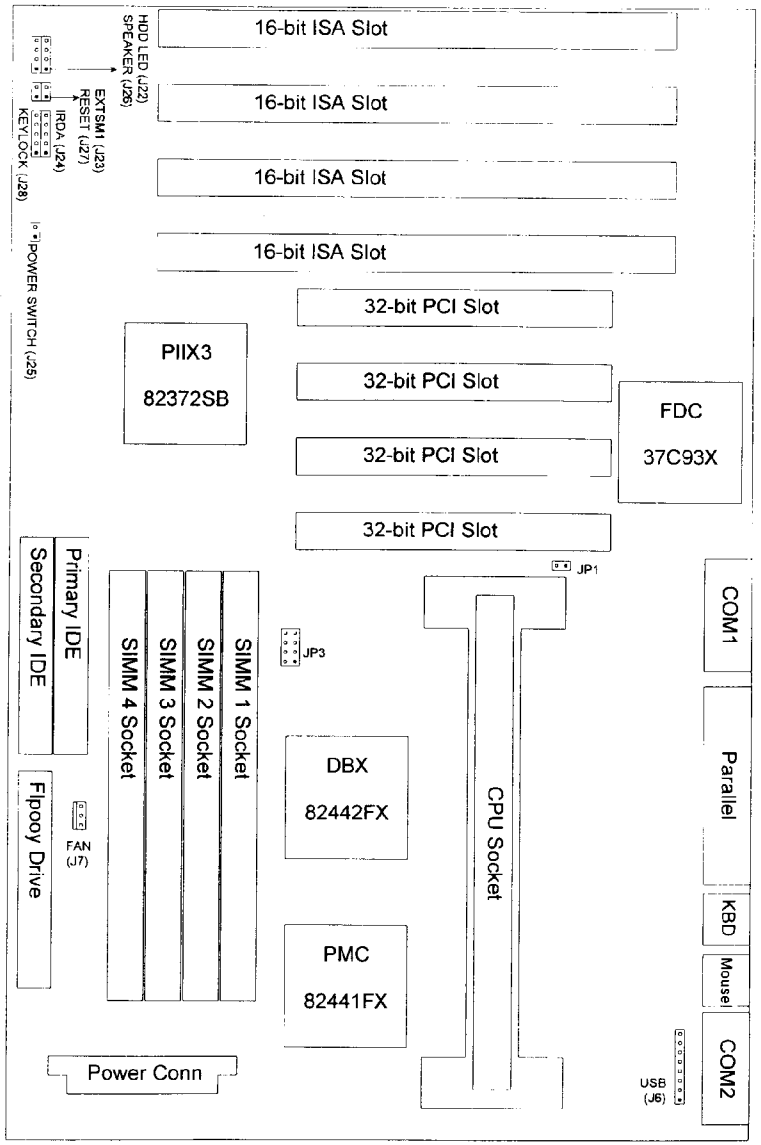
- ☑ The KR660 mainboard
- ☑ This KR660 user's manual
- ☑ 1 Retention Mechanism
- ☑ 1 IDE ribbon cable
- ☑ 1 floppy ribbon cable
- ☐ USB (2 port) cable with bracket (optional)
- ☐ Infrared (IrDA) module with ribbon cable (optional)

2 Key Features

2.1 Product Specification

- ✧ **Processor:** Supports 233, 266, 300, and 333MHz Intel Pentium II Processors
- ✧ **L2 Cache:** 256KB or 512KB Pipeline Burst SRAM come with CPU
- ✧ **SIMM (System Memory):** Supports 70ns or faster Extended Data Output (ED Fast Page (FP) SIMM in four 72-pin SIMM sockets using 4MB, 8MB, 16MB, 3 64MB or 128MB for a maximum of 512MB system memory.
- ✧ **Chipset:** Intel 440FX set is the core chipset with an SMC FDC37C935 super I controller chip.
- ✧ **Expansion Slots:** Four 32-bit PCI and Four 16-bit ISA expansions slots (one s
- ✧ **Super Multi-I/O:** Two high-speed UART compatible serial ports and One par port with ECP and EPP compatibility. One FDD header supporting either 5.25" (1.2 or 1.44/2.88MB) floppy drives. One IrDA TX/RX infrared port.
- ✧ **PS/2 Keyboard and PS/2 Mouse:** Onboard PS/2 Keyboard and PS/2 Mouse P
- ✧ **PCI bus Master IDE Controller:** Onboard dual-channel PCI Bus Master IDE support 4 IDE devices. This controller supports PIO Mode 3 and Mode 4 with a transfer rate up to 17MB per second. Bus Master IDE supports data transfer rates 22 MB per second. Also supports 120MB Floppy Drive (LS120).
- ✧ **Universal Serial Bus (USB):** Two standard USB interface supports up to 48M 127 peripheral devices.
- ✧ **PCI BIOS:** Win 95 Plug and Play with Green power saving support, and DMI Support.
- ✧ **Mechanical:** ATX form factor 199 mm x 305 mm

2.2 Mainboard Layout



3 Installation Preview

Before you install the KR660 mainboard into the system chassis you may find it conven first configure the mainboard hardware. This section describes how to configure the jun settings, install memory modules, and how to attach the various system components. Be using your computer you must review the following 7 steps:

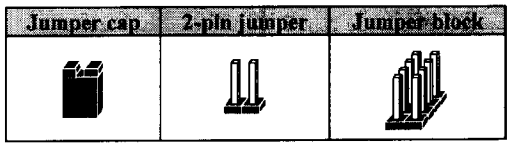
1. Jumper settings
2. Installation of DRAM modules (SIMM)
3. Installation of the Slot1 Retention Module, Installation of the CPU SEC (Single Ec Contact) Cartridege
4. Installation of expansion cards
5. Installation of IDE, I/O cables connection., and Power connection
6. Installation of the Power Core to the System.
7. Setup of the system BIOS software

3.1 Jumper Settings

You can configure the hardware options by setting jumpers on the mainboard. A jumpe set of two or more metal pins in a plastic base attached to the mainboard. A plastic "jum cap" with a metal (conductive) plate inside fits over two pins to create an electrical cont short between them. This contact establishes a hardware setting and is referred to as a "closed" jumper setting.

Some jumper have two pins while others may have three or more. Jumpers are sometim combined into sets called jumper blocks where all the jumpers in the block must be set together to establish a hardware setting. In this manual, the jumper settings will be desc graphically using a triangle (▲) always marking pin 1. Those jumpers with two pins wil shown as closed or open. A jumper is closed by placing the plastic jumper cap over the jumper pins and is opened by removing the jumper cap. Some jumpers are oriented vert and others horizontally with pin 1 marked as (▲=P1).

3.1.1 Jumpers, Jumper caps, and Jumper blocks



3.1.2 Setting 2-pin jumpers

This jumper is closed with the jumper cap placed over 2 pins

This jumper is open with the jumper cap removed from the 2 pins

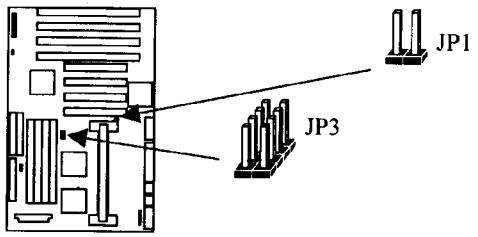
3.1.3 Configuration Jumpers

Jumpers

1) JP1 CMOS Clear

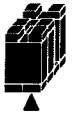
2) JP3 Processor speed setting

The Jumper located As below:



3.1.4 Processor Speed setting (JP3)

The processor speed depends upon the frequency of the CLOCK GENERATOR which is determined by jumpers. These jumpers tell the system what speed to run at. Currently, this mainboard speed range is from 233MHz to 333MHz. The CPU input frequency must match the frequency of CLOCK GEN or it will cause the system to malfunction.

Pentium II CPU Settings	JP3
233MHz (66MHz x 3.5) ★(Manufacturer default)	
266MHz (66MHz x 4)	

Pentium II CPU Settings	JP3
300MHz (66MHz x 4.5)	
333MHz (66MHz x 5)	

3.1.5 Clear CMOS (JP1)

The KR660 has a Jumper JP1, which allows you to clear the CMOS memory and Real Clock (RTC) data, the CMOS memory maintains the system configuration information RTC provides the system with the date and time. Make sure this jumper is open for nor operation.

Clear CMOS procedure: 1.) Set JP1 to Close; 2.) Power On your system; 3.)The CMOS data will be clear after POST; 4.) Power Off you system; 5.) Remove the Jumper cap; 6 setting your

3.2 Installation of DRAM modules (SIMM)

3.2.1 SIMM (Single Inline Memory Module)

You can configure the system memory size in a variety of ways by using different combinations of the four 72-pin DRAM SIMM modules. The memory must be 70ns (nanoseconds) or faster using either Fast Page Mode or Extended Data Output (EDO) t The memory table below shows the different memory size combinations available. Pl pay attention to the following restrictions :

1) You must use one pair of sockets at a time in sequence (i.e. SIMM1 and SIMM2, four sockets at once).

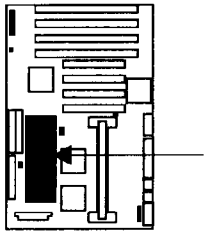
2) ***Each pair of modules must be the same size and speed and may be single sided*** double-side. Module sizes: Single-side SIMMs: 4MB, 8MB, 16MB; Double-side SIMMs: 8MB, 32MB, 128MB

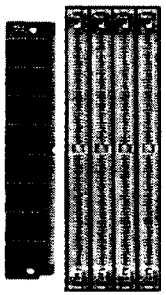
3.2.2 SIMM Combinations

Total Memory (Slot 1-4)	Bank A (Slot 1 & 2)	Bank B (Slot 3 & 4)
8MB	4MBx2	None
16MB	8MBx2	None
32MB	16MBx2	None
64MB	32MBx2	None
8MB	None	4MBx2

Total Memory (Slot 1-4)	Bank A (Slot 1 & 2)	Bank B (Slot 3 & 4)
16MB	None	8MBx2
32MB	None	16MBx2
64MB	None	32MBx2
16MB	4MBx2	4MBx2
24MB	4MBx2	8MBx2
40MB	4MBx2	16MBx2
72MB	4MBx2	32MBx2
24MB	8MBx2	4MBx2
32MB	8MBx2	8MBx2
48MB	8MBx2	16MBx2
80Mb	8MBx2	32MBx2
40MB	16MBx2	4MBx2
48MB	16MBx2	8MBx2
64MB	16MBx2	16MBx2
96MB	16MBx2	32MBx2
72MB	32MBx2	4MBx2
80MB	32MBx2	8MBx2
96MB	32MBx2	16MBx2
128MB	32MBx2	32MBx2
128MB	64MBx2	Nonc
128MB	None	64MBx2
256MB	128MBx2	None
256MB	None	128MBx2
512MB	128MBx2	128MBx2

3.2.3 Installation Procedure for SIMM





Insert SIMM modules into the SIMM sockets at a 45 degree angle.

1) PIN1 of the SIMM module must match with the PIN1 of the SIMM socket.

2) The module will only insert into the socket one way. An orientation cut-out will prevent you from inserting it the wrong way.

3) Insert the SIMM into the SIMM socket at a 45 degree angle. If pin 1 of the SIMM c not line up with pin 1 of the socket, the SIMM will not insert into the socket. Af inserting the SIMM module completely into the socket, push the SIMM module int vertical position.

4) The module should click into place with the retaining clips at each end of the socke snapping behind the module to secure it.

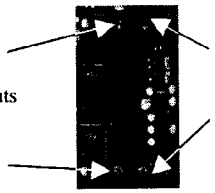
5) To release the memory module push both retaining clips outwards and carefully roc module forward.

IMPORTANT: Do not use SIMM that use an extra TTL chip to convert the memory module from asymmetric to symmetric.

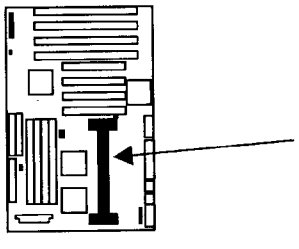
3.3 Installation of the CPU

The KR660 comes with Slot1 connector installing the Pentium II CPU cartridge. Before plug in the Pentium II CPU Cartridge, please mount the CPU Cartridge Retention modu (Packed with your mainboard) first as following step.

1. Place the Retention module over the Slot 1 connector, the Lock Holes should towa the SIMM socket side as following picture.
2. Tighten the 4 Captive Nuts in using a Philips or flate screw drive



To install a CPU, flip the Pentium II CPU Cartridge locks outwards tenderly so that the shows through the retention module's side Lock Hole, and do remember to plug the CPI FAN cable to J7.



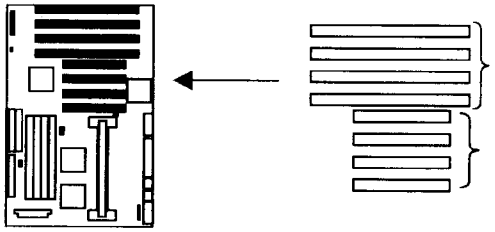
Please reference Intel Pentium II BOXed CPU Installation guide to install CPU Heat Si mechanism

WARNING: Without a fan, the Pentium II CPU Cartridge can overheat and will cause damage to both the CPU and the KR660 mainboard. The insufficient air flow will also damage to both the CPU and the KR660 mainboard

3.4 Installation of Expansion Slots:

3.4.1 ISA & PCI Slots

There are two types of ISA expansion cards design-Legacy and PnP (Plug & Play). For Legacy cards you must set the cards' jumpers manually. For Plug & Play cards, your system will assign the IRQs and DMAs automatically. You can verify the IRQ allocation either by using Microsoft's Diagnostic (MSD.EXE) utility which is in the DOS directory or through the Windows 95 resources menu.



3.4.2 Installation Procedure:

The KR660 has 8 expansion slots on-board. There are four 16-bit ISA Bus and four 32-bit PCI expansion slots. One of the expansion slots is shared by the connectors and will accommodate either an ISA or a PCI expansion card, but not both at the same time. All four PCI expansion slots accept PCI Bus master cards and fully supported by PCI 2.1 specifications.

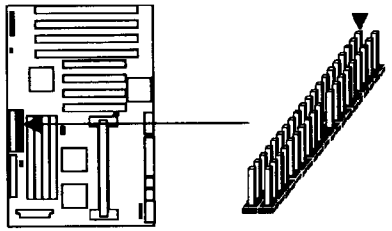
To install expansion cards, please read the expansion card's documentation, which shipped with the expansion card, for instructions.

NOTICE: Some expansion cards require an IRQ to work and may cause a conflict. There are total of 16 IRQs but some free for expansion cards. In case of a conflict please contact the system manufacturer for technical support.

3.5 Installation of IDE, I/O cables connection

3.5.1 Primary IDE Connector (40-pin block) (J19)

This connector supports two primary channel IDE devices via a ribbon cable. When two IDE devices are installed using the primary IDE connector make sure that the second IDE device is set to slave mode as indicated in the device's manual.

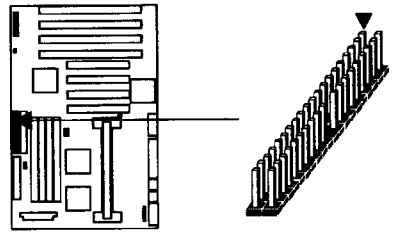


Pin	Signal Name	Pin	Signal Name
1	Reset IDE	2	Ground
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	Ground	20	Key
21	DDRQ0	22	Ground
23	I/O Write #	24	Ground
25	I/O Read #	26	Ground
27	IOCHRDY	28	pull-down
29	DDACK0#	30	Ground
31	IRQ14	32	IOCS16#
33	Addr 1	34	Reserved
35	Addr 0	36	Addr 2
37	Chip Select 1P#	38	Chip Select 3P
39	Activity #	40	Ground

WARNING: When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 end of the on-board connec

3.5.2 Secondary IDE Connector (40-pin block) (J21)

This connector supports two secondary channel IDE devices and 120MB Floppy drives ribbon cable. When two IDE devices are installed using the secondary IDE connector m sure that the second IDE device is adjusted to slave mode as instructed in the device's manual.

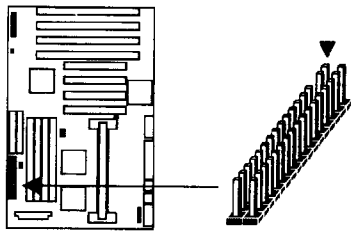


Pin	Signal Name	Pin	Signal Name
1	Reset IDE	2	Ground
3	Host Data 7	4	Host Data 8
5	Host Data 6	6	Host Data 9
7	Host Data 5	8	Host Data 10
9	Host Data 4	10	Host Data 11
11	Host Data 3	12	Host Data 12
13	Host Data 2	14	Host Data 13
15	Host Data 1	16	Host Data 14
17	Host Data 0	18	Host Data 15
19	Ground	20	Key
21	DDRQ1	22	Ground
23	I/O Write #	24	Ground
25	I/O Read #	26	Ground
27	IOCHRDY	28	pull-down
29	DDACK1#	30	Ground
31	MIRQ	32	IOCS16
33	Addr 1	34	Reserved
35	Addr 0	36	Addr 2
37	Chip Select 1S#	38	Chip Select 3S
39	Activity #	40	Ground

WARNING: When you connect a ribbon cable to these ports, you must orient the cabl connector so that the PIN 1 edge of the cable is at the PIN 1 end of the on-board conne

3.5.3 Floppy Drive Connector (34-pin block) (J20)

The FDC sub-system can control three types (1.2, 1.44, and 2.88MB) of floppy drivers compatible tape drives. Connection to floppy drives is via a header (J20). The floppy di interface includes 48mA drivers and Schmit inputs on the drive interface.

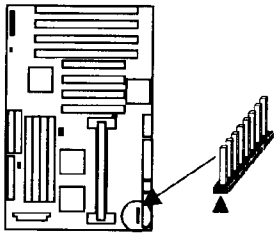


Pin	Signal Name	Pin	Signal Name
1	Ground	2	DRVDEN0
3	Ground	4	Reserved
5	Key	6	DRVDEN1
7	Ground	8	FDINDX#
9	Ground	10	FDM00#
11	Ground	12	FDDS1#
13	Ground	14	FDDS0#
15	Ground	16	FDM01#
17	MSEN1	18	FDDIR#
19	Ground	20	FDSTEP#
21	Ground	22	FDWD#
23	Ground	24	FDWE#
25	Ground	26	FDTRK0#
27	Ground	28	FDWPD#
29	MID0	30	FDRDATA#
31	Ground	32	FDHEAD#
33	MID1	34	DSKCHG#

WARNING: When you connect a ribbon cable to this port, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 end of the on-board port.

3.5.4 Universal Serial Bus (USB) Port (J6)

This KR660 mainboard has two USB on-board header. USB devices provide a more convenient operating environment and improve data transferring capacity. True Plug-and-Play, this new bus technology will support over 127 different peripherals through a Hub.



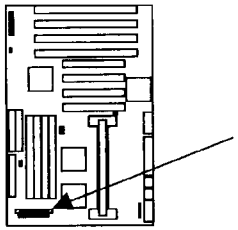
Pin	Signal Name (USB1)	Pin	Signal Name (USB2)
1	+5V	5	+5V
2	USB0-	6	USB1-
3	USB0+	7	USB1+
4	Ground	8	Ground

WARNING: When you connect a ribbon cable to these ports, you must orient the cable connector so that the PIN 1 edge of the cable is at the PIN 1 end of the on-board connector.

3.5.5 Power Input Connector (20-pin block) (J16)

This connector supports a standard ATX power supply. When connecting, make sure the lock key matches the hook attached on a power supply cable. The power cord should be unplugged when you connect it.

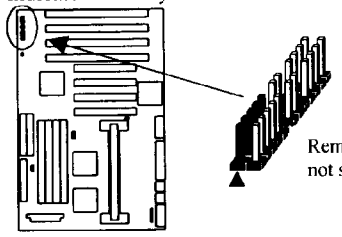
WARNING: Make sure that the ATX Power Supply can take at least 10 mAMP load on the 5 Volt Standy lead (5VSB). You may experience difficulty in powering on your system without this.



Pin	Name (Function)	Pin	Name (Function)
11	3.3V (Power +3.3 Voltage)	1	3.3V (Power +3.3 Voltage)
12	-12V (Power -12 Voltage)	2	3.3V (Power +3.3 Voltage)
13	Ground (Power Ground)	3	Ground (Power Ground)
14	PS_ON (Soft-Off Control)	4	+5V (Power +5 Voltage)
15	Ground (Power Ground)	5	Ground (Power Ground)
16	Ground (Power Ground)	6	+5V (Power +5 Voltage)
17	Ground (Power Ground)	7	Ground (Power Ground)
18	-5V (Power -5 Voltage)	8	PWRGD (Power Good)
19	+5V (Power +5 Voltage)	9	5VSB (Standby 5V)
20	+5V (Power +5 Voltage)	10	+12V (Power +12 Voltage)

3.5.6 Keylock and Power_On Connector (5-pin) (J28)

The KR660 supports one straight 5 pin header for connecting to front pannel Power LE indicator and Keylock switch cable.

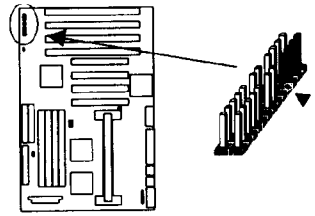


Pin	Signal Name
1	LED+
2	No Connect
3	Ground-
4	Keylock
5	Ground

Remark: The version A01 does not support Keylock function

3.5.7 HDD LED Connector (4-pin) (J22)

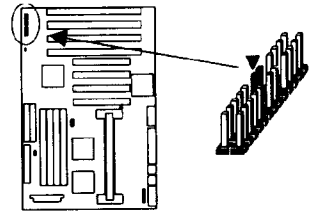
The KR660 supports one straight 4 pin header for connecting to front pannel Hard Disl activity LED indicator.



Pin	Signal Name
1	LED+
2	LED-
3	LED-
4	LED+

3.5.8 Reset Switch Connector (2-pin) (J27)

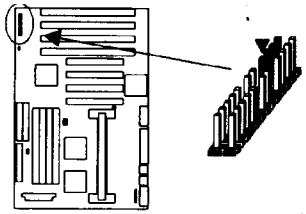
This connector supports the front pannel case-mounted reset. It is advised that the rese be used for rebooting the system in order to extend the life of the system's power supp



Pin	Signal Name
1	Reset
2	Ground

3.5.9 Speaker Connector (4-pin) (J26)

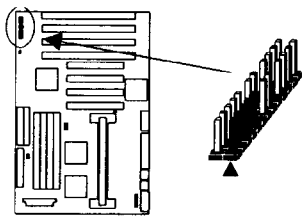
A 1x4 straight header is available to drive a chassis-mounted speaker if desired.



Pin	Signal Name
1	Speaker
2	No connect
3	Ground
4	+5V

3.5.10 IrDA connector (5-pin) (J24)

The KR660 mainboard offers an IrDA function. The case must reserve space for the IR module if you want to use the IrDA function. This connector supports optional wireless transmission and reception of infrared data. The module mounts in a small opening on the system case that supports this feature. The efficient distance is 100cm and the transfer rate is 1.44M KB/sec.

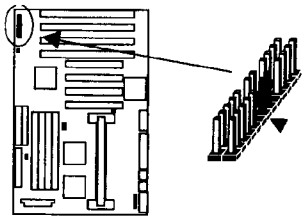


Pin	Signal Name
1	+5V
2	No connect
3	IrRX
4	Ground
5	IrTX

IMPORTANT: You must configure this feature through the BIOS. The IR module is supported by the mainboard via a 5-pin connector and ribbon cable.

3.5.11 External SMI (Suspend) (J23)

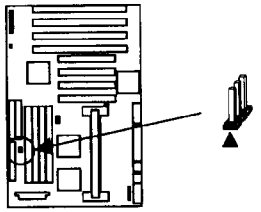
The system can be forced to Suspended mode once the switch be pressed, and the BIOS Power management setting should be Enabled.



Pin	Signal Name
1	Ext SMI#
2	Ground

3.5.12 CPU Fan conncetor (J7)

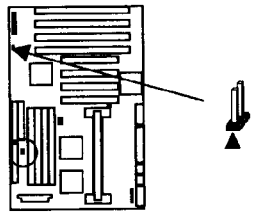
This connector supports Pentium II CPU cartridge fan power.



Pin	Signal Name
1	Ground
2	+12V
3	Reserved

3.5.13 ATX Power switch (J25)

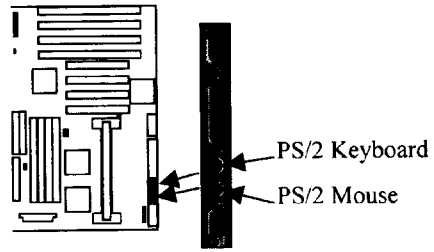
This connector supports the ATX case-mounted Power Switch,



Pin	Signal Name
1	PWR-SW
2	Ground

3.5.14 PS/2 Keyboard (J2) and Mouse Connector (J3)

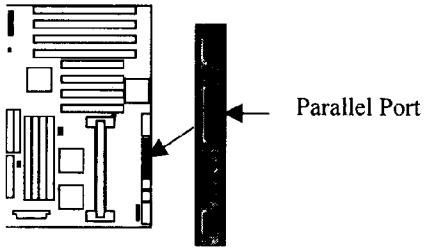
The KR660 mainboard offers 1 PS/2 Keyboard and 1 PS/2 Mouse port as below.



Pin	Signal Name
1	DATA
2	No connect
3	Ground
4	+5V (Fused)
5	Clock
6	No connect

3.5.15 Parallel Port Connector (26-pin Block) (J1)

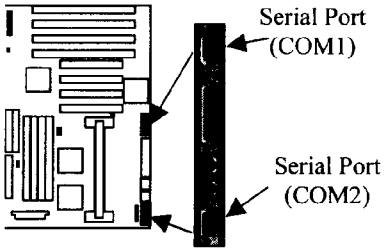
The motherboard includes a bi-directional parallel port (EPP/ECP compatible). The par port is capable of being disabled or remapped to either the secondary LPT address or th primary LPT address through BIOS if other parallel ports are installed. The parallel por contains 12mA source output drivers on the drive interface and incorporates Chip Prote circuitry for protection against damage due to printer's power being on.



Pin	Signal Name	Pin	Signal Name
1	STROBE#	14	AUTOFD#
2	DATA BIT 0	15	FAULT#
3	DATA BIT 1	16	PINIT#
4	DATA BIT 2	17	SLCT IN#
5	DATA BIT 3	18	Ground
6	DATA BIT 4	19	Ground
7	DATA BIT 5	20	Ground
8	DATA BIT 6	21	Ground
9	DATA BIT 7	22	Ground
10	ACK#	23	Ground
11	BUSY	24	Ground
12	PEERROR	25	Ground
13	SLCTI		

3.5.16 Serial Port (J4/J5)

The KR660 has two serial ports. The electrical characteristics are compliant with the EIA-232-D Serial Communications Specifications. The serial ports may be remapped above other installable serial ports or disabled through the BIOS.



Pin	Signal Name
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

4 BIOS Setup

The KR660 mainboard uses an Award BIOS, which is stored in a Flash EEPROM and can be upgraded using a floppy disk-based program. The BIOS has a built-in Setup prc that allows users to modify the basic system configuration setting. The settings are ther in a dedicated battery-backed memory, called CMOS RAM, that retains the informatio the power is turned off. The BIOS provides critical low-level support for the system ce processing, memory, and I/O subsystems. The Award BIOS has been customized by ad important, but nonstandard, features such as virus and password protection, power management, and detailed fine-tuning of the chipset controlling the system. The rest of manual is intended to guide you through the process of configuring your system using

4.1 Starting Setup

The Award BIOS is immediately activated when you first turn on the computer. The B reads system configuration information in CMOS RAM and begins the process of chec out the system and configuring it through the power-on self test (POST). When these preliminaries are finished, the BIOS seeks an operating system on one of the data stora devices (hard drive, floppy drive, etc.). The BIOS launches the operating system and h control of system operations to it.

To start Setup, press the <Del> key some time before or while a message similar to this appears briefly at the bottom of the screen during POST:

Press **DEL** to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, reboot system to try again by turning the system OFF then ON or pressing the "RESET" buttor system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Del keys. If you do not press the keys at the correct time and the system does not reboot, an message will be displayed at the bottom of the screen and you will again be asked to,

Press **F1** to continue, **DEL** to enter SETUP

4.1.1 Setup Keys

These keys help you navigate in Setup:

<↑> , <↓>	Move to previous or next item
<←> , <→>	Move to the item in the left or right hand
<Esc>	Main Menu – Quit and not save changes into CMOS Other Pages -- Exit current page and return to Main Menu
<PgUp> / <+>	Decrease the numeric value or make changes
<PgDn> / <–>	Increase the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Pa Setup Menu

<F2>	Change color from total 16 colors. F2 to select Shift-F2 color forward, Shift-F2 to select color backward
<F3>	Calendar, only for Status Page Setup Menu
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F7>	Load the Setup default
<F10>	Save all the CMOS changes, only for Main Menu

4.1.2 Getting Help

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 or the F1 key again.

4.1.3 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings that resets your system to its default configuration.

You can invoke this override by immediately pressing Insert; when you restart your computer. You can restart by either using the ON/OFF switch, the RESET button or by pressing Ctrl-Alt-Delete.

The best advice is to alter only settings that you thoroughly understand. In particular, do not change settings in the Chipset screen without a good reason. The Chipset defaults have been carefully chosen by Award or your system manufacturer for the best performance and reliability. Even a seemingly small change to the Chipset setup may causing the system to become unstable.

4.2 Main Setup Menu

When you enter the Award BIOS CMOS Setup Utility, a Main Menu (Figure 1) appears the screen. The Main Menu allows you to select from several Setup functions and two ex choices. Use the arrow keys to select among the items and press Enter to accept and ente sub-menu.

A brief description of each highlighted selection appears at the bottom of the screen.

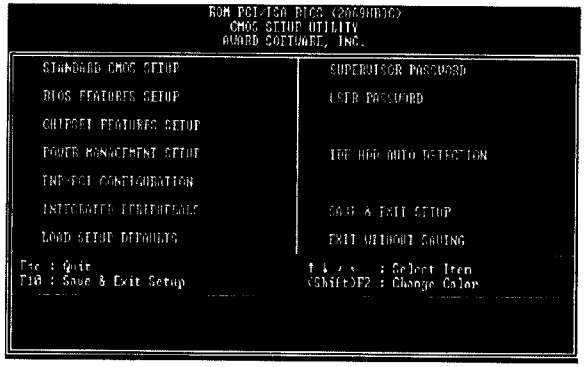


Figure 1

Following is a brief summary of each Setup category.

Standard CMOS	Options in the original PC AT-compatible BIOS.
BIOS Features	Award enhanced BIOS options.
Chipset Features	Options specific to your system chipset.
Power Management	Advanced Power Management (APM) options.
PnP/PCI Configuration	Plug and Play standard and PCI Local Bus configuration options.
Integrated Peripherals	I/O subsystems that depend on the integrated peripherals controller in your system.
Supervisor/User Password Setting	Change, set, or disable a password. In BIOS versions that allow separate user and supervisor passwords, only the supervisor password permits access to Setup. The user password generally allows only power-on access.
IDE HDD Auto Detection	Automatically detect and configure IDE hard disk parameters.
Load Setup Defaults	Setup defaults are factory settings for optimal-performance system operations.
Save & Exit Setup	Save settings in nonvolatile CMOS RAM and exit Setup.
Exit Without Save	Abandon all changes and exit Setup.

4.3 Standard CMOS Setup Menu

In the Standard CMOS Menu (Figure2) you can set the system clock and calendar, record disk drive parameters and the video subsystem type, and select the type of errors that stop the BIOS POST.

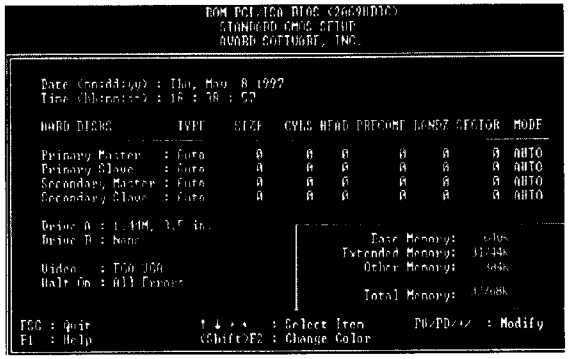


Figure 2

4.3.1 Date

The BIOS determines the day of the week from the other date information. This field is for information only. Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4.3.2 Time

The time format is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to the desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.

4.3.3 Hard Disks

The BIOS supports up to four IDE drives. This section does not show information about other IDE devices, such as a CD-ROM drive, or about other hard drive types, such as SCSI drives.

NOTE: *We recommend that you select type AUTO for all drives.*

The BIOS can automatically detect the specifications and optimal operating mode of almost all IDE hard drives. When you select type AUTO for a hard drive, the BIOS detects its specifications during POST, every time the system boots.

If you do not want to select drive type AUTO, other methods of selecting the drive type are available:

1) Match the specifications of your installed IDE hard drive(s) with the preprogramme values for drive types 1 through 45.

2) Select USER and enter values into each drive parameter field.

3) Use the IDE HDD AUTO DECTECTION function in Setup.

Here is a brief explanation of drive specifications:

- Type: The BIOS contains a table of pre-defined drive types. Each defined drive ty a specified number of cylinders, number of heads, write precompensation factor, landing zone, and number of sectors. Drives whose specifications do not accomm any pre-defined type are classified as type USER.
- Size: Disk drive capacity (approximate). Note that this size is usually slightly gre than the size of a formatted disk given by a disk-checking program.
- Cyls: Number of cylinders
- Head: Number of heads
- Precomp: Write precompensation cylinder
- Landz: Landing zone
- Sector: Number of sectors
- Mode: Auto, Normal, large, or LBA
  - Auto: The BIOS automatically determines the optimal mode.
  - Normal: Maximum number of cylinders, heads, and sectors supported are 102 and 63.
  - Large: For drives that do not support LBA and have more than 1024 cylinders
  - LBA (Logical Block Addressing): During drive accesses, the IDE controller transforms the data address described by sector, head, and cylinder number int physical block address, significantly improving data transfer rates. For drives v greater than 1024 cylinders.

4.3.4 Drive A/B type

Select the correct specifications for the diskette drive(s) installed in the computer.

None	No diskette drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

4.3.5 Video

Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode.
CGA 80	Color Graphics Adapter, power up in 80 column mode.
MONO	Monochrome adapter, includes high resolution monochrome adapters.

4.3.6 Halt on

During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process. These are the selections:

No errors	POST does not stop for any errors.
All errors	If the BIOS detects any non-fatal error, POST stops and prompts you to take corrective action.
All, But Keyboard	POST does not stop for a keyboard error, but stops for all other errors.
All, But Diskette	POST does not stop for diskette drive errors, but stops for all other errors.
All, But Disk/Key	POST does not stop for a keyboard or disk error, but stops for all other errors.

4.3.7 Memory

You cannot change any values in the Memory fields; they are only for your information. The fields show the total installed random access memory (RAM) and amounts allocated to base memory, extended memory, and other (high) memory. RAM is counted in kilobytes (KB: approximately one thousand bytes) and megabytes (MB: approximately one million bytes).

RAM is the computer's working memory, where the computer stores programs and data currently being used, so they are accessible to the CPU. Modern personal computers may contain up to 64 MB, 128 MB, or more.

Base Memory

Typically 640 KB. Also called conventional memory. The DOS operating system and conventional applications use this area.

Extended Memory

Above the 1-MB boundary. Early IBM personal computers could not use memory above 1 MB, but current PCs and their software can use extended memory.

Other Memory

Between 640 KB and 1 MB; often called High memory. DOS may load terminate-and-stay resident (TSR) programs, such as device drivers, in this area, to free as much conventional memory as possible for applications. Lines in your CONFIG.SYS file that start with LOADHIGH load programs into high memory.

Total Memory

System total memory is the sum of base memory, extended memory, and other memory.

4.4 BIOS Features Setup Menu

This screen (Figure 3) contains industry-standard options additional to the core PC AT BIOS. This section describes all fields offered by Award Software in this screen. Some fields may vary from those in your Setup program. Your system board designer may omit or modify some fields.

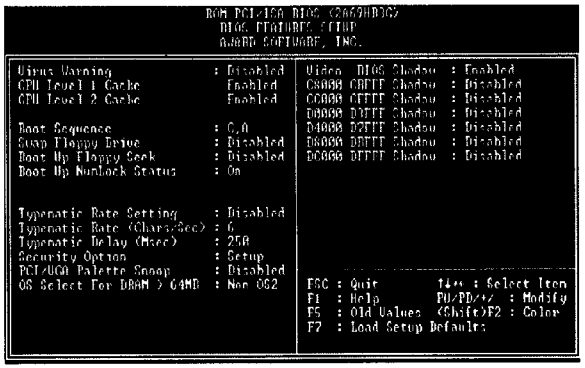


Figure 3

4.4.1 Virus Warning

When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an anti-virus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

NOTE: *Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.*

4.4.2 CPU Level 1/Level 2 Cache

Cache memory is additional memory that is much faster than conventional DRAM (system memory). Pentium II CPU has Level 1 and Level 2 build-in cache. These fields allow you to Enabled (Default) or Disabled to turn on or turn off the memory cache ability.

4.4.3 Boot Sequence

The original IBM PCs loaded the DOS operating system from drive A (floppy disk), so IBM PC-compatible systems are designed to search for an operating system first on drive A, and then on drive C (hard disk). However, the BIOS now offers 5 different boot sequence options of three drives each. In addition to the traditional drives A and C, options include IDE hard drives and CD-ROM drive.

4.4.4 Swap Floppy Drive

This field is effective only in systems with two floppy drives. Selecting Enabled assigns physical drive B to logical drive A, and physical drive A to logical drive B.

4.4.5 Boot Up Floppy Seek

When *Enabled,* the BIOS tests (seeks) floppy drives to determine whether they have 40 c tracks. Only 360-KB floppy drives have 40 tracks; drives with 720 KB, 1.2 MB, and 1.4 capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, w recommend that you set this field to *Disabled* to save time.

4.4.6 Boot Up NumLock Status

Toggle between *On* or *Off* to control the state of the NumLock key when the system boot When toggled *On,* the numeric keypad generates numbers instead of controlling cursor operations.

4.4.7 Typematic Rate Setting

When *Disabled,* the following two items (Typematic Rate and Typematic Delay) are irrelevant. Keystrokes repeat at a rate determined by the keyboard controller in your syst When *Enabled,* you can select a typematic rate and typematic delay.

4.4.8 Typematic Rate (Chars/Sec)

When the typematic rate setting is enabled, you can select a typematic rate (the rate at wh character repeats when you hold down a key) of 6, 8, 10,12, 15, 20, 24 or 30 characters p second.

4.4.9 Typematic Delay (Msec)

When the typematic rate setting is enabled, you can select a typematic delay (the delay be key strokes begin to repeat) of 250, 500, 750 or 1000 milliseconds.

4.4.10 Security Option

If you have set a password, select whether the password is required every time the Systen boots, or only when you enter Setup.

4.4.11 PCI/VGA Palette Snoop

Some display cards that are not standard VGA such as graphics accelerators or MPEG ca may not show the corect colors, the setting can correct this problem once you set it to En Te default setting leave at Disabled.

4.4.12 OS select for DRAM > 64MB

Select *OS2* only if you arc running OS/2 opcrating system with greater than 64 MB of R/ on your system.

4.4.13 Shadow

Software that resides in a read-only memory (ROM) chip on a device is called *firmware*. The Award BIOS permits *shadowing* of firmware such as the system BIOS, video BIOS, and similar operating instructions that come with some expansion peripherals, such as, for example, a SCSI adaptor.

Shadowing copies firmware from ROM into system RAM, where the CPU can read it through the 16-bit or 32-bit DRAM bus. Firmware not shadowed must be read by the system through the 8-bit X-bus. Shadowing improves the performance of the system BIOS and similar ROM firmware for expansion peripherals, but it also reduces the amount of high memory (640 KB to 1 MB) available for loading device drivers, etc.

Enable shadowing into each section of memory separately. Many system designers hardwire shadowing of the system BIOS and eliminate a System BIOS Shadow option.

Video BIOS shadows into memory area C0000-C7FFF. The remaining areas shown on the BIOS Features Setup screen may be occupied by other expansion card firmware. If an expansion peripheral in your system contains ROM-based firmware, you need to know the address range the ROM occupies to shadow it into the correct area of RAM.

4.5 Chipset Features Setup Menu

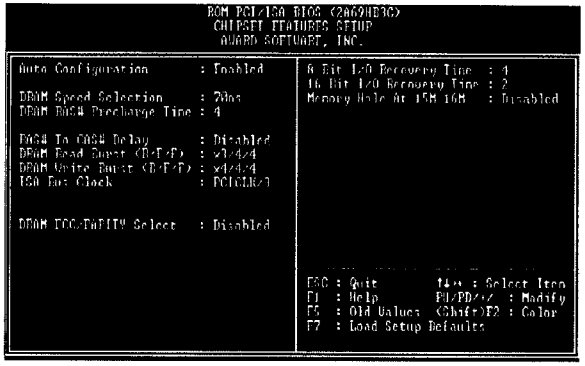


Figure 4

4.5.1 Auto Configuration

Auto Configuration selects predetermined optimal values of chipset parameters. When *Disabled*, chipset parameters revert to setup information stored in CMOS. Many fields ir screen are not available when Auto Configuration is *Enabled.*

4.5.2 DRAM Speed Selection

The value in this field must correspond to the speed of the DRAM installed in your syste **DO NOT** change the default setting of this field, as determined by the system board manufacturer for the installed DRAM. This value is *access* speed, so a lower value mean faster system.

4.5.3 DRAM RAS# Precharge Time

The precharge time is the number of cycles it takes for the RAS to accumulate its charge before DRAM refresh. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.

4.5.4 RAS# to CAS# Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, used w DRAM is written to, read from, or refreshed. *Disabled* gives faster performance; and *Enc* gives more stable performance.

4.5.5 DRAM Read Burst (B/E/F)

Set the timing for burst-mode reads from DRAM. The lower the timing numbers, the fast system addresses memory.

4.5.6 DRAM Write Burst (B/E/F)

Set the timing for burst-mode writes from DRAM. The lower the timing numbers, the faster the system addresses memory.

4.5.7 ISA Bus Clock

Set the speed of the ISA bus here. The settings are tied to the speed of the PCI bus. If the PCI bus operates at 33 MHz, a setting of PCICLK/4 (default) would yield an ISA bus speed of approximately 8 MHz, the standard speed of the ISA bus. While most devices operate at higher ISA bus speeds, try a slower bus speed if your ISA device does not function properly at a high bus speed.

4.5.8 DRAM ECC/Parity Select

Select *Parity, ECC,* or *Disabled,* depending on the type of DRAM installed in your system. Also you need install Pentium II CPU cartridge with ECC support for ECC function properly once you installed 36-bit SIMM.

4.5.9 8/16 Bit I/O Recovery Time

The I/O recovery mechanism adds bus clock cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is so much faster than the ISA bus. These two fields let you add recovery time (in bus clock cycles) for 16-bit and 8-bit I/O.

4.5.10 Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

4.6 Power Management Setup Menu

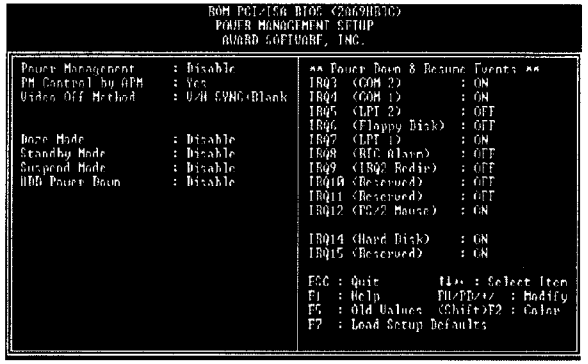


Figure 5

4.6.1 Power Management

This option allows you to select the type (or degree) of power saving for Doze, Standby, a Suspend modes. See the section *PM Timers* for a brief description of each mode. This tab describes each power management mode:

Disable	Global Power Management will be disabled
Max Saving	Maximum power savings. **Only Available for SL CPUs.** Inactiv period is 1 minute in each mode.
User Define	Set each mode individually. Select time-out periods in the *PM Time* section, following.
Min Saving	Minimum power savings. Inactivity period is 1 hour in each mo (except the hard drive).

4.6.2 PM Control by APM

If Advanced Power Management (APM) is installed on your system, selecting *Yes* gives b power savings.

4.6.3 Video Off Method

Determines the manner in which the monitor is blanked.

V/H SYNC+Blank	System turns off vertical and horizontal synchronization ports a writes blanks to the video buffer.
DPMS Support	Select this option if your monitor supports the Display Pow Management Signaling (DPMS) standard of the Video Electroni Standards Association (VESA). Use the software supplied for yo video subsystem to select video power management values.

Blank Screen	System only writes blanks to the video buffer.

4.6.4 Doze Mode

Defines the continuous idle time before the system entering DOZE mode. The range is from 1 min to 1 Hr. If any item defined is enabled & active, STANDBY timer will be reloaded

4.6.5 Standby Mode

After the selected period of system inactivity (1 minute to 1 hour), the fixed disk drive and the video shut off while all other devices still operate at full speed.

4.6.6 Suspend Mode

After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off.

4.6.7 HDD Power Down

After the selected period of drive inactivity (1 to 15 minutes), the hard disk drive powers down while all other devices remain active.

4.6.8 Power Down and Resume Events

You can disable monitoring of common interrupt requests so they do not awaken the system from, or reset activity timers for, Suspend mode.

IRQ3 (COM 2)

IRQ4 (COM 1)

IRQ5 (LPT 2)

IRQ6 (Floppy Disk)

IRQ7 (LPT 1)

IRQ8 (RTC Alarm)

IRQ9 (IRQ2 Redir)

IRQ10 (Reserved)

IRQ11 (Reserved)

IRQ12 (PS/2 Mouse)

IRQ14 (Hard Disk)

IRQ15 (Reserved)

4.7 PCI Configuration Setup Menu

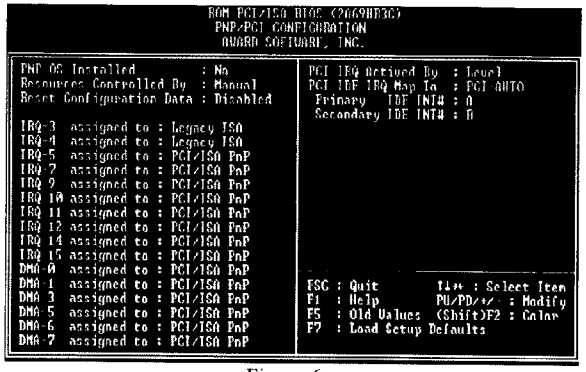


Figure 6

4.7.1 PNP OS Installed

The default settint is No When a non PNP OS installed or to prevent reassigning of interr setting for some of non PNP cards installed. Select Yes if the OS is PNP aware (e.g. Windows95)

4.7.2 Resources Controlled by

The Award Plug and Play BIOS can automatically configure all the boot and Plug and Pl compatible devices. If you select *Auto*, all the interrupt request (IRQ) and DMA assignme fields disappear, as the BIOS automatically assigns them.

4.7.3 Reset Configuration Data

Normally, you leave this field *Disabled*. Select *Enabled* to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and system reconfiguration has caused such a serious conflict that the operating system canno boot.

4.7.4 IRQ # Assigned to

When resources are controlled manually, assign each system interrupt as one of the follov types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a spe interrupt (such as IRQ4 for serial port 1).

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for P ISA bus architecture.

4.7.5 DMA # Assigned to

When resources are controlled manually, assign each system DMA channel as one of the following types, depending on the type of device using the interrupt:

Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel.

PCI/ISA PnP Devices compliant with the Plug and Play standard, whether designed for PCI or ISA bus architecture.

4.7.6 PCI IRQ Activated by

Leave the IRQ trigger set at *Level* unless the PCI device assigned to the interrupt specifies *Edge*-triggered interrupts.

4.7.7 PCI IDE IRQ Map To

This field lets you select PCI IDE IRQ mapping or PC AT (ISA) interrupts. If your system does not have one or two PCI IDE connectors on the system board, select values according to the type of IDE interface(s) installed in your system (PCI or ISA). Standard ISA interrupts for IDE channels are IRQ14 for primary and IRQ15 for secondary.

4.7.8 Primary/Secondary IDE INT#

Each PCI peripheral connection is capable of activating up to four interrupts: INT# A, INT# B, INT# C and INT# D. By default, a PCI connection is assigned INT# A. Assigning INT# B has no meaning unless the peripheral device requires two interrupt services rather than just one. Because the PCI IDE interface in the chipset has two channels, it requires two interrupt services. The primary and secondary IDE INT# fields default to values appropriate for two PCI IDE channels, with the primary PCI IDE channel having a lower interrupt than the secondary.

4.8 Integrated peripherals Menu

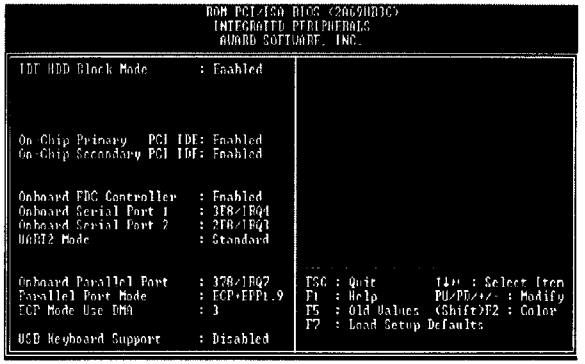


Figure 7

4.8.1 IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/wr your IDE hard drive supports block mode (most new drives do), select Enabled for auto detection of the optimal number of block read/writes per sector the drive can support.

4.8.2 On-Chip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

4.8.3 Onboard FDC Controller

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the system and you wish to use it. If you install an add-in FDC or the system has no floppy drive, s *Disabled* in this field.

4.8.4 Onboard Serial Port 1/2

Select an address and corresponding interrupt for the first and second serial ports.

4.8.5 UART2 Mode

Select the UART2 mode, there are 2 option Standard or IrDA.

4.8.6 Onboard Parallel Port

Select a logical LPT port name and matching address for the physical parallel (printer) p

4.8.7 Onboard Parallel Mode

Select an operating mode for the onboard parallel (printer) port. Select *Normal*unless your hardware and software require one of the other modes offered in this field.

SPP	Standard parallel port mode (Default)
EPP	Bi-directional mode
ECP	Fast, buffered
ECP+EPP	Bi-directional and buffered

4.8.8 ECP Mode Use DMA

Select a DMA channel for the port.

4.8.9 USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

4.9 IDE HDD Auto Detection

BIOS setup will display all possible modes that supported by the HDD including NORM LBA & LARGE.

if HDD does not support LBA modes, no 'LBA' option will be shown.

if no of cylinders is less than or equal to 1024, no 'LARGE' option will be show

Users can select a mode which is appropriate for them

4.10 Password Setting

When you select this function, a message appears at the center of the screen:

ENTER PASSWORD:

Type the password, up to eight characters, and press Enter. Typing a password clears any previously entered password from CMOS memory. Now the message changes:

CONFIRM PASSWORD:

Again, type the password and press Enter.

To abort the process at any time, press Esc.

In the *Security Option* item in the **BIOS Features** Setup screen, select *System* or *Setup*:

System Enter a password each time the system boots and whenever you enter Setup.

Setup Enter a password whenever you enter Setup.

NOTE: *To clear the password, simply press Enter when asked to enter a password. The password function is disabled.*