

M6VLQ

Federal Communications Commission (F.C.C.) Statement

This device complies with Part 15 of the FCC Rules. Operation of this device 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.

Accessories: This device has been tested and found to comply with the limits of a Class B digital device, the accessories associated with this equipment are as follows:

1. Shielded serial cable. (Can be obtained from multiple retail outlets)
2. Shielded printer cable. (Can be obtained from multiple retail outlets)
3. Shielded video cable. (Can be obtained from multiple retail outlets)
4. Shielded power cord. (Provided by manufacturer)

These accessories are required to ensure compliance with FCC Rules. It is the responsibility of the user to provide and use these accessories properly.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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Canadian D.O.C. Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites appliquées aux appareils numériques de Class B prescrits dans le règlement du brouillage radioélectrique édicté par le ministre Des Communications du Canada.

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Introduction

System Overview

Congratulations on the purchase of your new system! This motherboard is designed to take advantage of the latest industry technology to provide you with the ultimate solution in data processing. In the tradition of its predecessors, this motherboard continues a commitment to reliability and performance and strives for full compliance and compatibility with industry software and hardware standards.

M6VLQ Highlights:

- Contains on board I/O facilities, which include one serial port, a parallel port, a monitor port, a PS/2 mouse port, a PS/2 keyboard port, audio ports, USB ports and a game port.
- Contains on board IDE facilities for IDE devices such as hard disks and CD-ROM Drives.
- Contains on board LAN (Optional).
- Supports the Socket 370.

1. Motherboard Description

1.1 Features

1.1.1 Hardware

CPU

- Supports the Celeron™ processor (FC-PGA & FC-PGA2) and the Pentium® !!! Micro-Processor (FC-PGA & FC-PGA2) and VIA C3 Samuel 2 for high-end workstations and servers.
- CPU Socket 370.

Speed

- Runing at 66/100/133 MHz Front Side Bus frequency.
- Supports up to 1.2 GHz CPU core speeds.
- The 33 MHz 32 bit PCI 2.2 compliant.

Chipset

- Chipset-VIA 8601T/82C686B.

DRAM Memory

- Supports two 64/128/256/512 MB DIMM module sockets.
- Supports Synchronous DRAM (3.3V).
- Supports a maximum memory size of 512 MB with SDRAM.
- 100/ 133Mhz Bus frequency.

Internal Accelerated Graphics Port (AGP) Controller

- AGP v1.0 compliant.
- Pipelined split-transaction long-burst transfers up to 533 MB/sec.
- Eight level read request queue.
- Four level posted-write request queue.
- Thirty-two level (quadwords) read data FIFO (128 bytes).
- Sixteen level (quadwords) write data FIFO(64 bytes).
- Intelligent request reordering for maximum AGP bus utilization.
- Supports Flush /Fence commands.
- Graphics Address Relocation Table (GART).
- One level TLB structure.
- Sixteen entry fully associative page table.
- LRU replacement scheme.
- Independent GART lookup control for host /AGP /PCI master accesses.
- Windows 95 OSR-2 VXD and integrated Windows 98/ NT5 miniport driver support.

Sophisticated Power Management Features

- Independent clock stop controls for CPU / SDRAM, Internal AGP and PCI bus.
- PCI and AGP bus clock run and clock generator control.
- Low-leakage I/O pads.

General Graphic Capabilities

- 64-bit Single Cycle 2D/3D Graphics Engine.
- Supports 2 to 8 Mbytes of Frame Buffer located in System Memory.
- Real Time DVD MPEG-2 and AC-3 Playback.
- Video Processor.
- I²C Serial Interface.
- Integrated 24-bit 230MHz True Color DAC.
- Extended Screen Resolutions up to 1600x1200.
- Extended Text Modes 80 or 132 columns by 25/30/43/60 rows.
- DirectX 6 and OpenGL ICD API.

High Performance rCADE3D™ Accelerator

- 32 entry command queue, 32 entry data queue.
- 4Kbyte texture cache with over 90% hit rates.
- Pipelined Single Cycle Setup / Texturing / Rendering Engines.
- DirectDraw™ acceleration.
- Multiple buffering and page flipping.

Setup Engine

- 32-bit IEEE floating point input data.
- Slope and vertex calculations.
- Back facing triangle culling.
- 1/16 sub-pixel positioning.

Rendering Engine

- High performance single pass execution.
- Diffused and specular lighting.
- Gouraud and flat shading.
- Anti-aliasing including edge, scene, and super-sampling.
- OpenGL compliant blending for fog and depth-cueing.
- 16-bit Z-buffer.
- 8/16/32 bit per pixel color formats.

Texturing Engine

- 1/2/4/8-bits per pixel quality non-palletized textures.
- 16/32-bits per pixel quality non-palletized textures.
- Pallet formats in ARGB 565, 1555, or 444.
- Tri-linear, bi-linear, and point-sampled filtering.
- Mip-mapping with multiple Level-Of-Detail (LOD) calculations and perspective correction.
- Color keying for translucency.

2D GUI Engine

- 8/15/16/24/32-bits per pixel color formats.
- 256 Raster Operations (ROPs).
- Accelerated drawing: BitBLTs, lines, polygons, fills, patterns, clipping bit masking.
- Panning, scrolling, clipping, color expansion, sprites.
- 32x32 and 64x64 Hardware Cursor.
- DOS graphics and text modes.

DVD

- Hardware-Assisted MPEG-2 Architecture for DVD with AC-3.
- Simultaneous motion compensation and front-end processing (parsing, decryption and decode).
- Supports full DVD 1.0, VCD 2.0 and CD-Karaoke.
- Microsoft DirectShow 2.x native support, backward compatible to MCI.
- No additional frame buffer requirements.
- Dynamic frame and field de-interlace filtering for high quality playback on VGA monitors (Bob and Weave).
- Tamper-proof software CSS implementation.
- Freeze, Fast-Forward, Slow Motion, Reverse.
- Pan-and-Scan support for 16:9 Sequence.

Super I/O Built-in onboard

- Support one multi-mode Parallel Port.
 - (1) Standard & Bidirection Parallel Port (SPP).
 - (2) Enhanced Parallel Port (EPP).
 - (3) Extended Capabilities Port (ECP).
- Supports one serial port, 16550 UART with 16 byte FIFO.
- UART data rates up to 1.5 Mbaud.
- Supports one Infrared transmission (IR) port.
- Supports PS/2 Mouse.
- Supports 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk drives.

Direct Sound Ready AC97 Digital Audio Controller

- Dual full-duplex Direct Sound channels between system memory and AC97 link.
- PCI master interface with scatter / gather and bursting capability.
- 32 byte FIFO of each direct sound channel.
- Host based sample rate converter and mixer.
- Standard v2.1 AC97 Codec interface for single or cascaded AC97 Codec's from multiple vendors.
- Loopback capability for re-directing mixed audio streams into USB and 1394 speakers.

- Hardware SoundBlaster Pro for Windows DOS box and real-mode Dos legacy compatibility.
- Plug and play with 4 IRQ, 4 DMA, and 4 I/O space options for SoundBlaster Pro and MIDI hardware.
- Hardware assisted FM synthesis for legacy compatibility.
- Direct two game ports and one MIDI port interface.
- Complete software driver support for Windows 95, Windows 98, Windows NT, Windows 2000, Windows XP and Windows ME.

Power Management

- Supports both ACPI (Advanced Configuration and Power Interface) and legacy (APM) power management.
- ACPI v1.0 Compliant.
- APM v1.2 Compliant.
- S3 (suspend to RAM) support

Dimensions (Micro ATX form-factor)

- 24.38cm x 20cm (WxL)

1.1.2 Software

BIOS

- Phoenix legal & user-friendly BIOS.
- Supports PnP functions.

Operating Systems

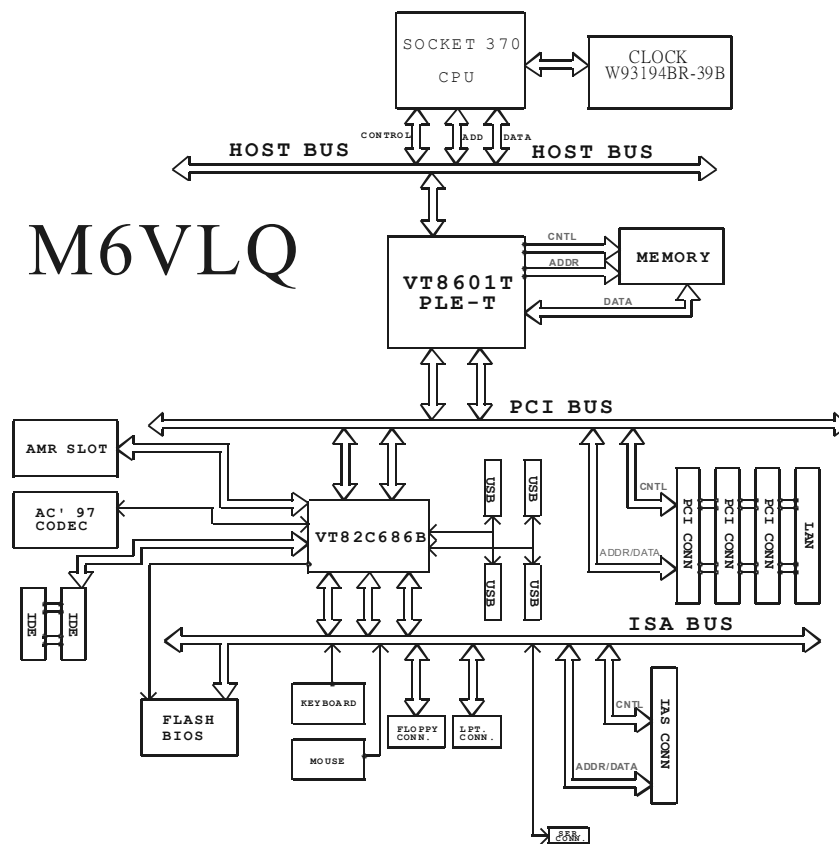
- Offers the highest performance for MS-DOS, Windows NT, Windows 2000, Windows 95/ 98, Windows ME, Windows XP, Novell, LINUX (Red hat 7.0), SCO UNIX.

1.1.3 Attachments

- HDD Cable.
- FDD Cable.
- USB2 Cable (Optional).
- Rear I/O Panel for Micro ATX Case (Optional).
- CD for sound, VGA, IDE drivers utilities.

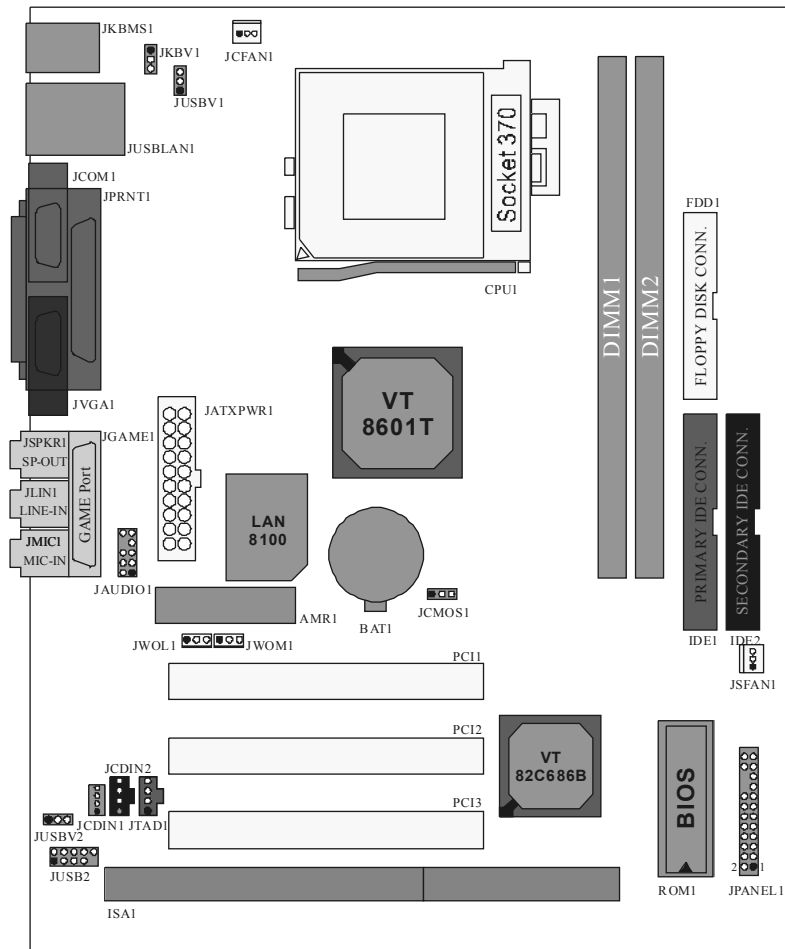
1.2 Motherboard Installation

1.2.1 System Block Diagram

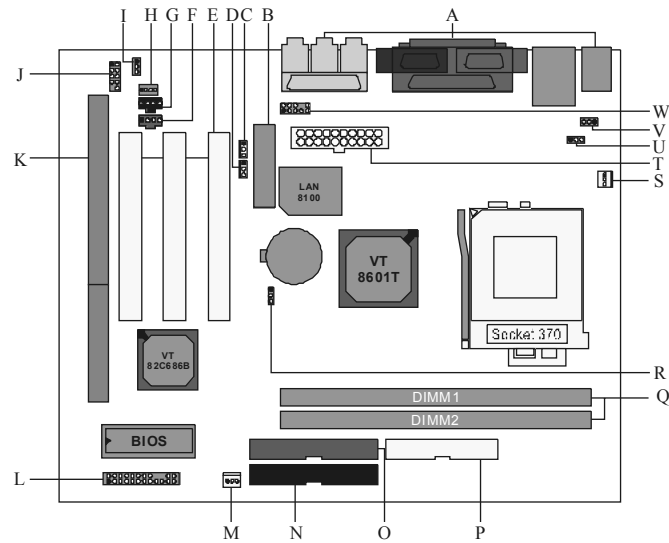


1.2.2 Layout of Motherboard

Model No.M6VLQ



1.2.3 Quick Reference

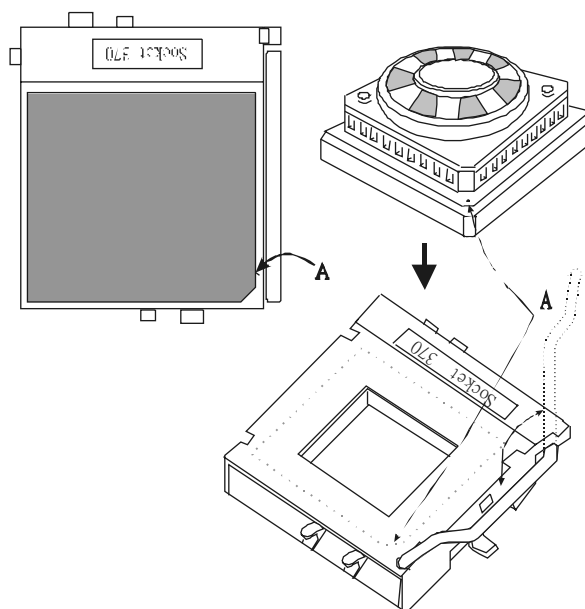


- | | |
|---|---|
| A. Back Panel I/O Connectors | L. Front Panel Connector (JPANEL1) |
| B. AMR Slot (AMR1) | M. System FAN Header (*JSFAN1) |
| C. Wake-On-LAN Header (JWOL1) | N. Secondary IDE Connector (IDE2) |
| D. Wake-On-Modem Header (*JWOM1) | O. Primary IDE Connector (IDE1) |
| E. PCI Slots (PCI1-3) | P. FDD Connector (FDD1) |
| F. Telephony Audio (JTAD1) | Q. DIMM Sockets (DIMM1-2) |
| G. CD-ROM Audio Header (JCDIN2) | R. Clear CMOS Header (JCMOS1) |
| H. CD-ROM Audio Header (JCDIN1) | S. CPU FAN Header (JCFAN1) |
| I. 5V/5VSB Selection for USB (*JUSBV2) | T. ATX Power Connector (JATXPWR1) |
| J. Front USB Header (JUSB2) | U. 5V/5VSB Selection for USB (*JUSBV1) |
| K. ISA Slot (ISA1) | V. 5V/5VSB Selection for KB (*JKBV1) |
| | W. Front Audio Header (JAUDIO1) |

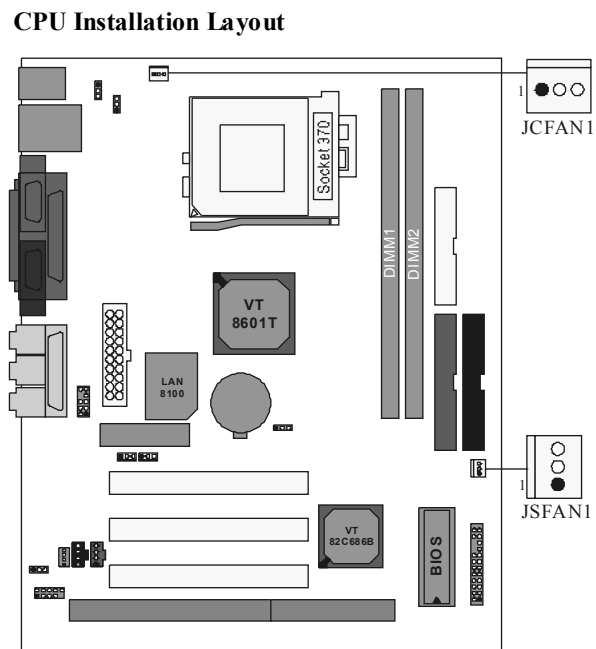
NOTE: The “*” mark represent the function is optional.

1.3 CPU Installation

1.3.1 CPU Installation Procedure: Socket 370



1. Pull the lever sideways away from the socket then raise the lever up to a 90-degree angle.
2. Locate Pin A in the socket and look for the white dot or cut edge in the CPU. Match Pin A with the white dot/cut edge then insert the CPU.
3. Press the lever down.
4. Put the fan on the CPU and buckle it and put the fan's power-port into the JCFAN1, then to complete the installation.



1.3.2 CPU Fan Header: JCFAN1

Pin No.	Assignment
1	Ground
2	+12V
3	Sense

1.3.3 System Fan Header: JSFAN1 (Optional)

Pin No.	Assignment
1	Ground

2	+12V
3	Sense

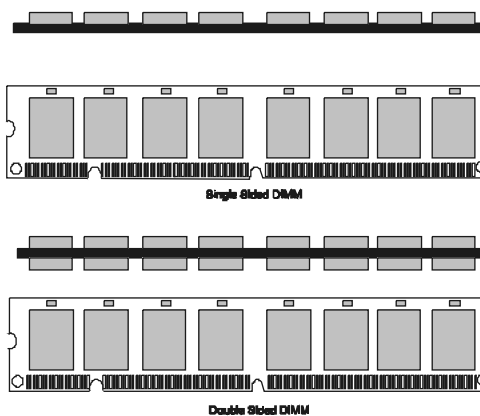
1.4 RAM Module Installation

1.4.1 DIMM

DRAM Access Time: 3.3V Unbuffered SDRAM PC100/133 Type required.
DRAM Type: 64MB/ 128MB/ 256MB/512MB DIMM Module (168 pin)

Total	Bank 0	Bank 1
Memory Size (MB)	DIMM1	DIMM2
64 M	64M x 1 pc	----
128 M	128M x 1 pc	----
256 M	256M x 1 pc	----
512 M	512M x 1 pc	----
128 M	64M x 1 pc	64M x 1 pc
192 M	128M x 1 pc	64M x 1 pc
320 M	256M x 1 pc	64M x 1 pc
576 M	512M x 1 pc	64M x 1 pc
192 M	64M x 1 pc	128M x 1 pc
256 M	128M x 1 pc	128M x 1 pc
384 M	256M x 1 pc	128M x 1 pc
640 M	512M x 1 pc	128M x 1 pc
320 M	64M x 1 pc	256M x 1 pc
384 M	128M x 1 pc	256M x 1 pc
512 M	256M x 1 pc	256M x 1 pc
768 M	512M x 1 pc	256M x 1 pc
576 M	64M x 1 pc	512M x 1 pc
640 M	128M x 1 pc	512M x 1 pc
768 M	256M x 1 pc	512M x 1 pc
1024 M	512M x 1 pc	512M x 1 pc

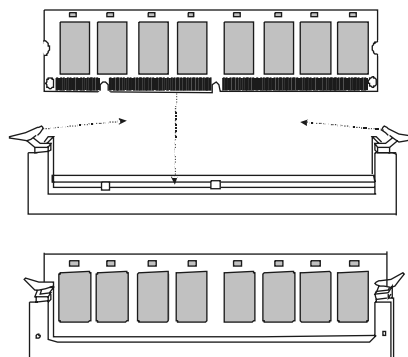
1.4.2 How to install a DIMM Module



1. The DIMM socket has a “Plastic Safety Tab” and the DIMM memory module has an asymmetrical notch”, so the DIMM memory module can only fit into the slot in one direction.

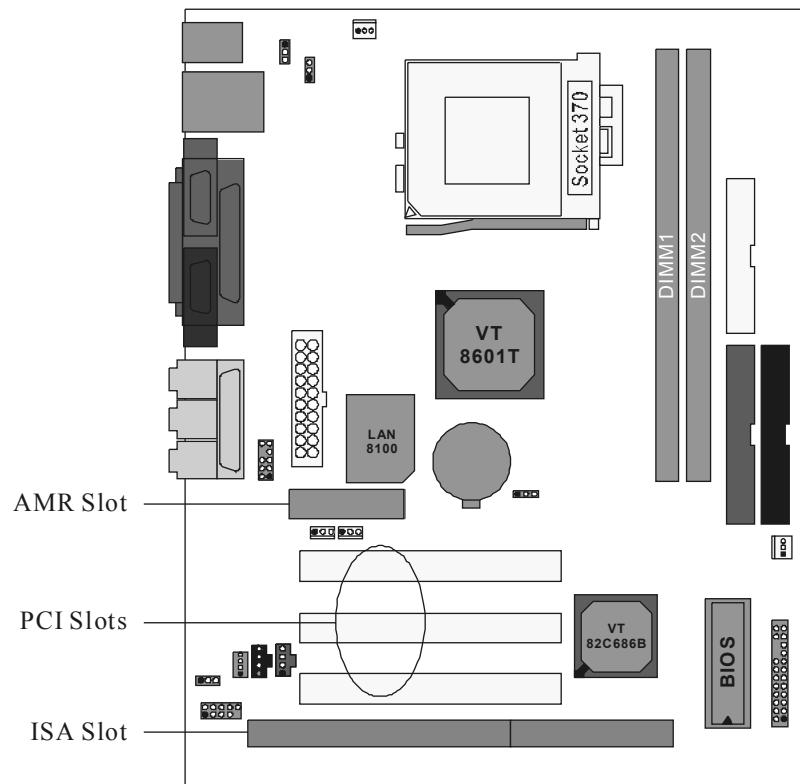
2. Push the tabs out. Insert the DIMM memory modules into the socket at a 90-degree angle then push down vertically so that it will fit into place.

3. The Mounting Holes and plastic tabs should fit over the edge and hold the DIMM memory modules in place.



1.5 Slots

The slots in this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



1.5.1 AMR (Audio Modem Riser) Slot (Only support slave card)

The AMR specification is an open Industry Standard Architecture and that defines a hardware scalable riser card interface, which supports audio and modem only.

1.5.2 PCI (Peripheral Component Interconnect) Slots

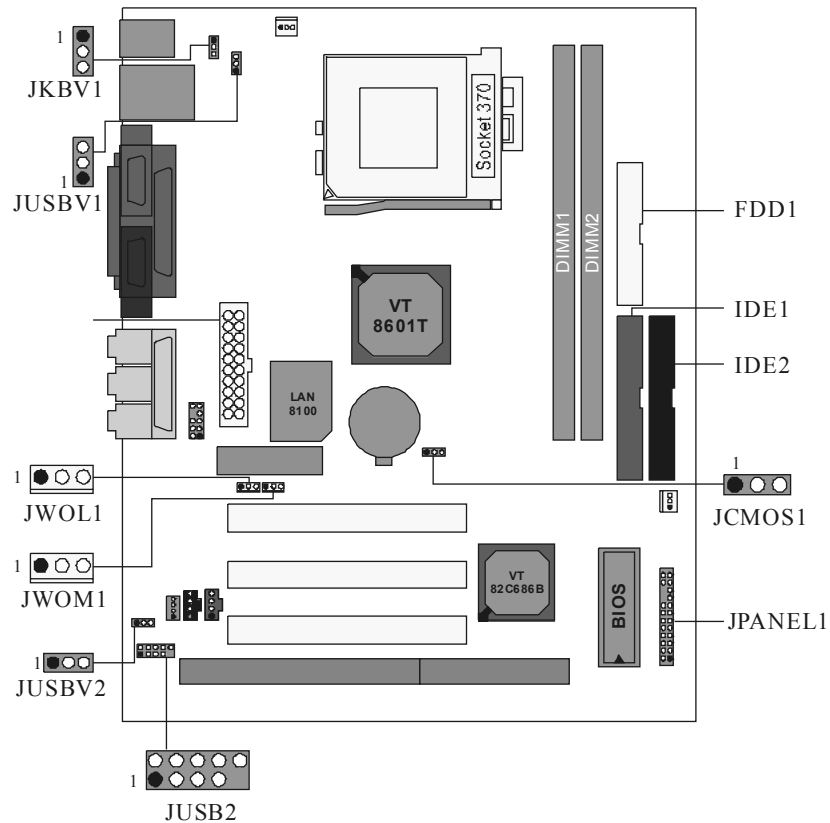
This motherboard is equipped with 3 standard PCI slots. PCI stands for peripheral Component Interconnect and is a bus standard for expansion cards, with has, for the most part, supplanted the older ISA bus standard. This PCI slot is designated as 32 bit.

1.5.3 ISA (Industry Standard Architecture) Slot

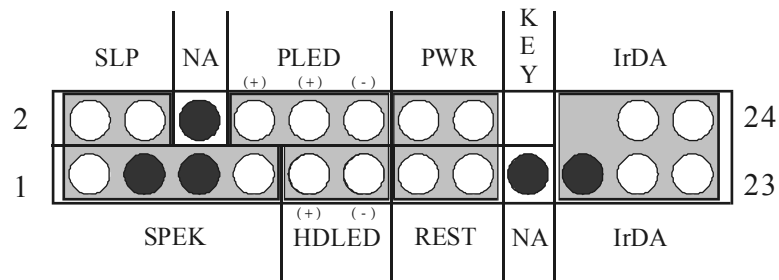
The motherboard is equipped with one standard ISA slot. ISA stands for Industry Standard Architecture and was designed as a bus standard for expansion cards in the early 90's for PC XT/AT machines. This motherboard retains backward compatibility with this older and slower bus architecture.

1.6 Connectors, Headers & Jumpers

The connectors, headers and jumpers introduced below provide you lots of capabilities such as power supply, front panel signal revelation, IDE hard disk connection, floppy disk connection, Wake On LAN function and Front USB connection. Noticeably, a jumper has two or more pins that can be covered by a plastic jumper cap, allowing you to select different system options.



1.6.1 Front Panel Connector: JPANEL1



Pin No.	Assignment	Function	Pin No.	Assignment	Function
1	Speaker	Speaker Connector	2	Sleep Control	Sleep Button
3	NC		4	Ground	Ground
5	Ground		6	NA	NA
7	+5V		8	Power LED (+)	POWER LED
9	HDD LED (+)	Hard Disk LED	10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground	Reset Button	14	Power Button	POWER Button
15	Reset Control		16	Ground	
17	NA	NA	18	KEY	KEY
19	NA	IrDA Connector	20	KEY	IrDA Connector
21	+5V		22	Ground	
23	IRTX		24	IRRX	

Speaker Connector

An offboard speaker can be installed on the motherboard as a manufacturing option. An offboard speaker can be connected to the motherboard at the front panel connector. The speaker (onboard or offboard) provides error beep code information during the Power On Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

Reset Button

This connector can be attached to a momentary SPST switch. This switch is usually open and when closed will cause the motherboard to reset and run the POST (Power On Self Test).

Power LED Connector

This connector can be attached to an LED on the front panel of a computer case. The LED will illuminate while the computer is powered on.

HDD LED (Hard Drive LED Connector)

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during disk activity. This disk activity only applies to those IDE drives directly attached to the system board.

IrDA (Infrared Connector)

This connector is used to attach to an infrared sensing device. After the IrDA interface is configured, connectionless data transfer to and from portable devices such as laptops, PDAs is possible.

Sleep Button (Green Button)

This connector is used to conserve energy by powering down the monitor and the hard disk when not in use. To configure this option, you need to connect a button from the front panel to this connector. Depressing the button will power down the monitor and hard drives until the system is invoked by any keyboard activity, mouse activity, modem activity or when the sleep button is depressed again. APM (Advanced Power Management) must be enabled in the system BIOS and the APM driver must be loaded.

Power Button

This connector can be attached to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off. (The time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.

1.6.2 ATX 20-pin Power Connector: JATXPWR1

This connector supports the power button on-board. Using the ATX power supply, function such as Soft Power Off is supported on this motherboard. This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board.

PIN	Assignment	PIN	Assignment
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	5V	14	PS_ON
5	Ground	15	Ground
6	5V	16	Ground
7	Ground	17	Ground
8	PW_OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

1.6.3 Hard Disk Connectors: IDE1/IDE2

The motherboard has a 32-bit Enhanced PCI IDE Controller that provides PIO Mode 0~4, Bus Master, and Ultra DMA / 33, Ultra DMA / 66, Ultra DMA / 100 functionality. It has two HDD connectors IDE1 (primary) and IDE2 (secondary). You can connect up to four hard disk drives, a CD-ROM, a 120MB Floppy (reserved for future BIOS) and other devices to IDE1 and IDE2. These connectors support the IDE hard disk cable provided.

- **IDE1 (Primary IDE Connector)**

The first hard drive should always be connected to IDE1. IDE1 can connect a Master and a Slave drive. You must configure the second hard drive on IDE1 to Slave mode by setting the jumper accordingly.

- **IDE2 (Secondary IDE Connector)**

The IDE2 controller can also support a Master and a Slave drive. The configuration is similar to IDE1. The second drive on this controller must be set to slave mode.

1.6.4 Floppy Disk Connector: FDD1

The motherboard provides a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.


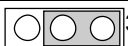
1.6.5 Wake On LAN Header: JWOL1

Pin No.	Assignment
1	5V SB
2	Ground
3	Wake up

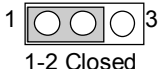
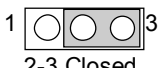
1.6.6 Wake-On MODEM Header: JWOM1 (Optional)

Pin No.	Assignment
1	5V_SB
2	Ground
3	Wake-Up

1.6.7 5V/ 5VSB Selection for USB: JUSBV1/ JUSBV2 (Optional)

JUSBV1/JUSBV2	Assignment
1  3 1-2 Closed	5V
1  3 2-3 Closed	5V_SB

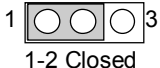
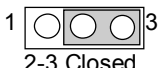
1.6.8 5V/ 5VSB Selection for KB: JKBV1 (Optional)

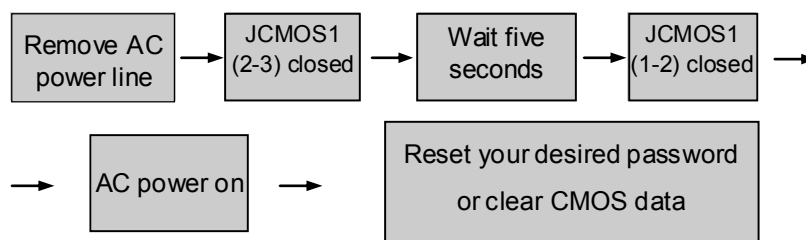
JKBV1	Assignment
 1-2 Closed	5V
 2-3 Closed	5V_SB

1.6.9 Front USB Headers: JUSB2

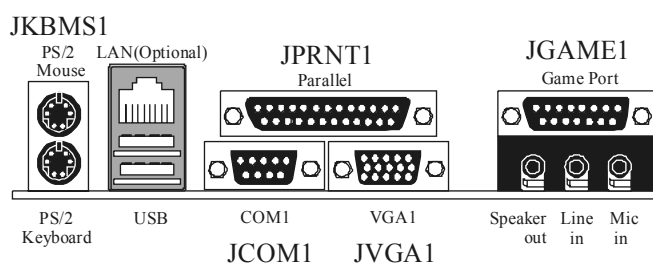
Pin	Assignment	Pin	Assignment
1	+5V	2	+5V
3	USB1 Data(-)	4	USB2 Data(-)
5	USB1 Data(+)	6	USB2 Data(+)
7	Ground	8	Ground
9	KEY	10	NA

1.6.10 Clear CMOS Jumper: JCMOS1

JCMOS1	Assignment
 1-2 Closed	Normal Operation (default)
 2-3 Closed	Clear CMOS Data

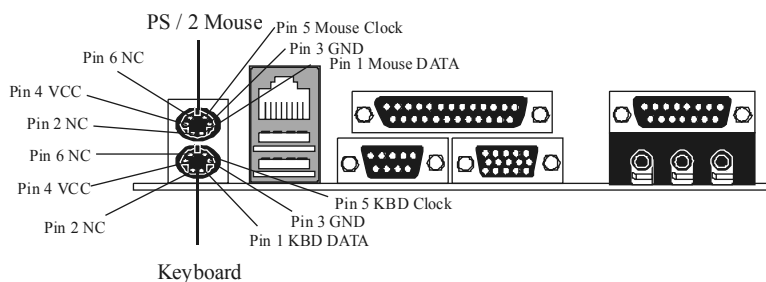


1.7 Peripheral Port



1.7.1 PS/2 Mouse / Keyboard Connector: JKBMS1

The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector. The connector location and pin definition are shown below:

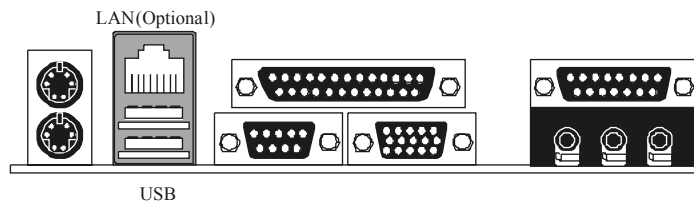


PS/2 Mouse / Keyboard Connectors

Pin	Assignment
1	Data
2	No connect
3	Ground
4	+5 V (fused)
5	Clock
6	No connect

1.7.2 USB & LAN Connector: JUSBLAN1 (Optional)

The motherboard provides an **OHCI (Open Host Controller Interface) Universal Serial Bus Roots** for attaching USB devices such as: keyboard, mouse and other USB devices. You can plug the USB devices directly into this connector.



1.7.2.1 Stacked USB Connectors

Pin	Assignment
1	+5 V
2	USBP0- [USBP1-]
3	USBP0+ [USBP1+]
4	Ground

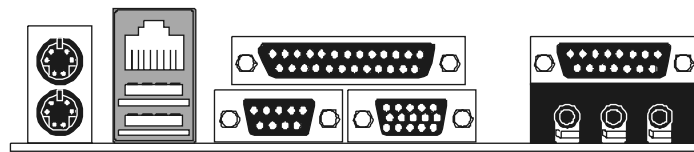
Signal names in brackets ([]) are for USB Port 1.

1.7.2.2 Stacked LAN Connector (Optional)

Pin	Assignment	Pin	Assignment
1	TDP	7	NC
2	TDN	8	NC
3	RDP	9	VCC3 SBY
4	NC	10	TX LED
5	NC	11	VCC3 SBY
6	RDN	12	RX LED

1.7.3 Monitor Connector: JVGA1

This motherboard has built in video facilities. Your monitor will attach directly to JVGA1 connector on the motherboard.



JVGA1

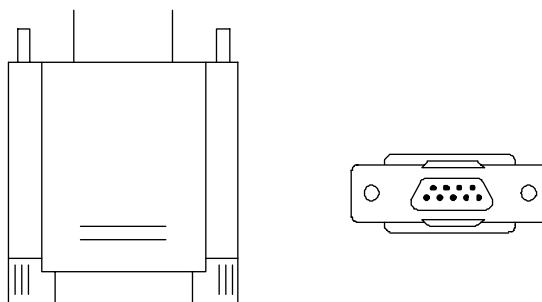
Pin No.	Assignment	Pin No.	Assignment
1	Red	2	Green
3	Blue	4	+5V
5	Ground	6	Ground
7	Ground	8	Ground
9	+5V	10	Ground
11	+5V	12	DDC/Data
13	HSYNC	14	VSYNC
15	DDC/CLK		

1.7.4 Serial and Parallel Interface Ports

This system comes equipped with two serial ports and one parallel port. Both types of interface ports will be explained in this chapter.

1.7.4.1 The Serial Interface: JCOM1

The serial interface port is sometimes referred to as an RS-232 port or an asynchronous communication port. Mice, printers, modems and other peripheral devices can be connected to a serial port. The serial port can also be used to connect your computer with another computer system. If you wish to transfer the contents of your hard disk to another system it can be accomplished by using each machine's serial port.



The serial ports on this system have one 9-pin connectors. Some older computer systems and peripherals used to be equipped with only one 25-pin connector. Should you need to connect your 9-pin serial port to an older 25-pin serial port, you can purchase a 9-to-25 pin adapter.

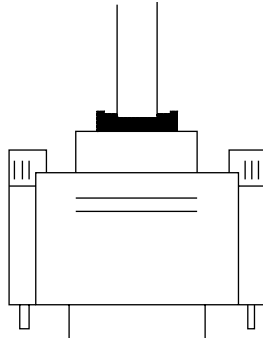
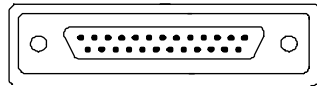
Connectivity

The serial ports can be used in many ways, and it may be necessary to become familiar with the pinout diagram. The following chart gives you the function of each pin on the 9-pin connector and some of the 25-pin connector. This information can be used when configuring certain software programs to work with the serial ports.

Signal	Name	DB9 PIN	DB25 PIN
DCD	Data Carrier Detect	1	8
RX	Receive Data	2	3
TX	Transmit Data	3	2
DTR	Data Terminal Ready	4	20
GND	Signal Ground	5	7
DSR	Data Set Ready	6	6
RTS	Request to Send	7	4
CTS	Clear to Send	8	5
RI	Ring Indicator	9	22

1.7.4.2 Parallel Interface Port: JPRNT1

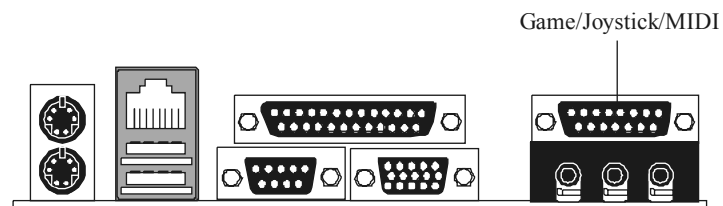
Unlike the serial ports, parallel interface port has been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system has a 25-pin, DB25 connector (see picture below). The pinout for the parallel port are shown in the table below.



Signal	Pin
-Strobe	1
Data 0	2
Data 1	3
Data 2	4
Data 3	5
Data 4	6
Data 5	7
Data 6	8
Data 7	9
-Ack	10
Busy	11
Paper Empty	12
+Select	13
-Auto FDXT	14
-Error	15
-Init	16
-SLCTN	17
Ground	18
Ground	19
Ground	20
Ground	21
Ground	22
Ground	23
Ground	24
Ground	25

1.7.5 Game (Joystick/MIDI) Port Connector: JGAME1

This connector allows you to connect a joystick or game pad for playing computer games. Also, you may play or edit professional music by connecting MIDI devices.

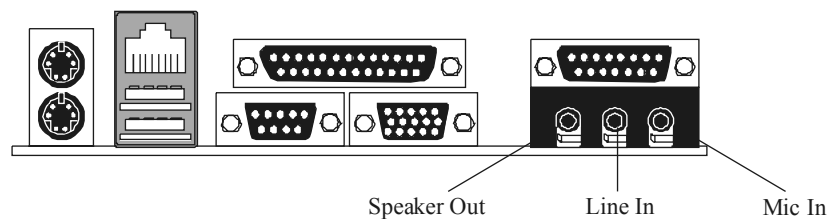


1.7.6 Audio Port Connectors: JSPKR1/JLIN1/JMIC1

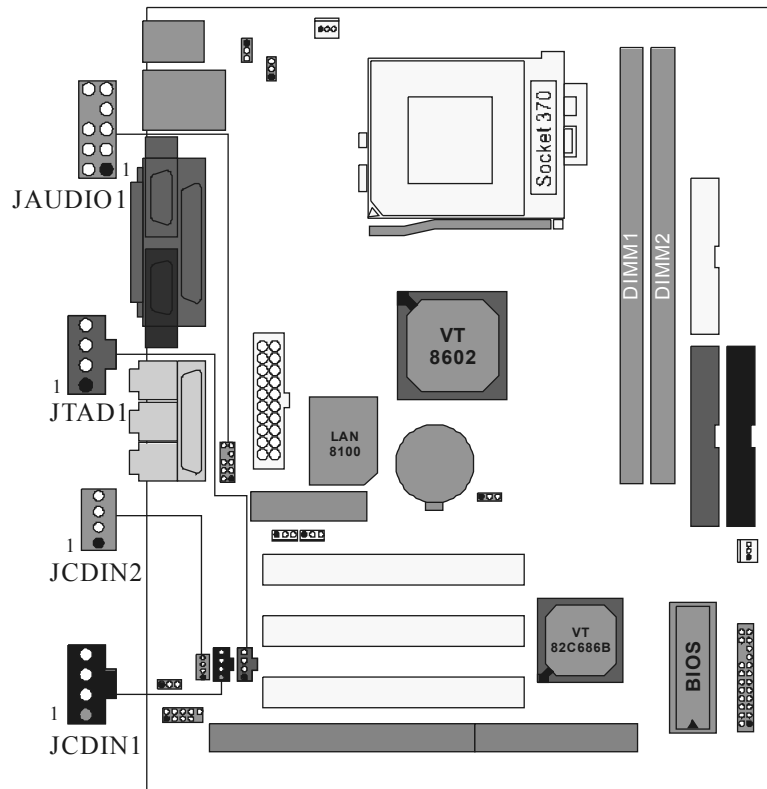
Speaker Out is used to connect speakers or headphones for audio output.

Line In can be connected to the external CD player, Tape player or other audio devices for audio input.

Mic In is used to connect a microphone, which allows you to input sounds and voices.



1.7.6 Audio Subsystem



1.7.6.1 CD-ROM Audio-In Header: JCDIN1

Pin No.	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

1.7.6.2 CD-ROM Audio-In Header: JCDIN2

Pin No.	Assignment
1	Left Channel Input
2	Ground
3	Right Channel Input
4	Ground

1.7.6.3 Front Audio Header: JAUDIO1

Pin No.	Assignment	Pin No.	Assignment
1	Mic In	2	Ground
3	Mic Power	4	Audio Power
5	RT Line Out	6	RT Line Out
7	Reserved	8	Key
9	LFT Line Out	10	LFT Line Out

1.7.6.4 Telephony Audio Header: JTAD1

Pin No.	Assignment
1	MONO_IN
2	Ground
3	Ground
4	MONO_OUT

2. BIOS Setup

Introduction

This manual discussed Award™ Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award BIOS™ installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel processors input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

Adding important has customized the Award BIOS™, but nonstandard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Plug and Play Support

These AWARD BIOS supports the Plug and Play Version 1.0A specification. ESCD (Extended System Configuration Data) write is supported.

EPA Green PC Support

This AWARD BIOS supports Version 1.03 of the EPA Green PC specification.

APM Support

These AWARD BIOS supports Version 1.1&1.2 of the Advanced Power Management (APM) specification. Power management features are implemented via the System Management Interrupt (SMI). Sleep and Suspend power management modes are supported. Power to the hard disk drives and video monitors can be managed by this AWARD BIOS.

PCI Bus Support

This AWARD BIOS also supports Version 2.1 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

DRAM Support

SDRAM (Synchronous DRAM) are supported.

Supported CPUs

This AWARD BIOS supports the Intel Pentium® 4 CPU.

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program by using the keyboard.

Keystroke	Function
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left (menu bar)
Right arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ Key	Increase the numeric value or make changes
- Key	Decrease the numeric value or make changes
Esc key	Main Menu – Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

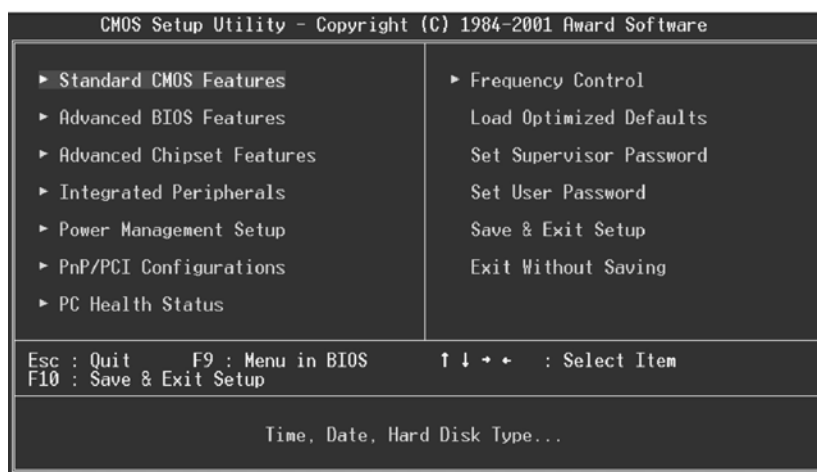
2.1 Main Menu

Once you enter Award BIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

!! WARNING !!

The information about BIOS defaults on manual (**Figure 1,2,3,4,5,6,7,8,9**) is just for reference, please refer to the BIOS installed on board, for update information.

■ **Figure 1. Main Menu**



Standard CMOS Features

This submenu contains industry standard configurable options.

Advanced BIOS Features

This submenu allows you to configure enhanced features of the BIOS.

Advanced Chipset Features

This submenu allows you to configure special chipset features.

Integrated Peripherals

This submenu allows you to configure certain IDE hard drive options and Programmed Input/ Output features.

Power Management Setup

This submenu allows you to configure the power management features.

PnP/PCI Configurations

This submenu allows you to configure certain “Plug and Play” and PCI options.

PC Health Status

This submenu allows you to monitor the hardware of your system.

Frequency Control

This submenu allows you to change CPU Vcore Voltage and CPU/PCI clock.
(However, this function is strongly recommended not to use. Not properly change the voltage and clock may cause CPU or M/B damage!)

Load Optimized Defaults

This selection allows you to reload the BIOS when the system is having problems particularly with the boot sequence. These configurations are factory settings optimized for this system. A confirmation message will be displayed before defaults are set.

A screenshot of a BIOS screen with a dark background and a light-colored border. The text "Load Optimized Defaults (Y/N)? N" is displayed in a monospaced font.

Load Optimized Defaults (Y/N)? N

Set Supervisor Password

Setting the supervisor password will prohibit everyone except the supervisor from making changes using the CMOS Setup Utility. You will be prompted with to enter a password.

A screenshot of a BIOS screen with a dark background and a light-colored border. The text "Enter Password:" is displayed in a monospaced font.

Enter Password:

Set User Password

If the Supervisor Password is not set, then the User Password will function in the same way as the Supervisor Password. If the Supervisor Password is set and the User Password is set, the “User” will only be able to view configurations but will not be able to change them.

A screenshot of a BIOS screen with a dark background and a light gray border. The text "Enter Password:" is displayed in a light gray, monospaced font.**Save & Exit Setup**

Save all configuration changes to CMOS(memory) and exit setup. confirmation message will be displayed before proceeding.

A screenshot of a BIOS screen with a dark background and a light gray border. The text "SAVE to CMOS and EXIT (Y/N)? Y" is displayed in a light gray, monospaced font.**Exit Without Saving**

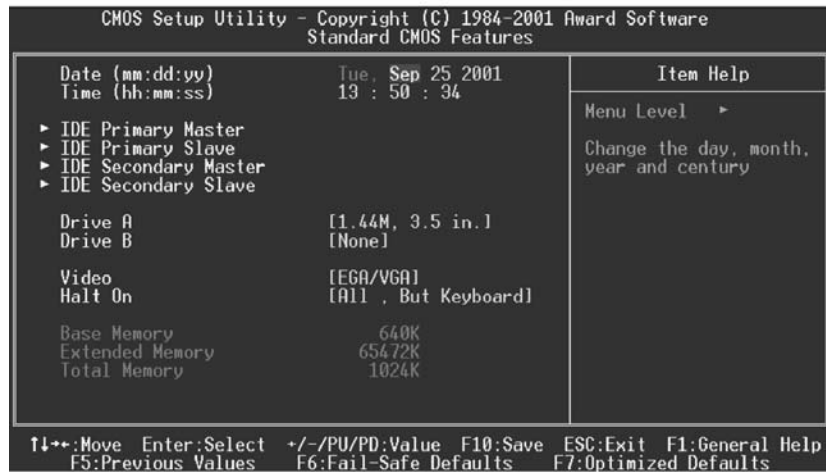
Abandon all changes made during the current session and exit setup. confirmation message will be displayed before proceeding.

A screenshot of a BIOS screen with a dark background and a light gray border. The text "Quit Without Saving (Y/N)? N" is displayed in a light gray, monospaced font.

2.2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

■ Figure 2. Standard CMOS Setup



Main Menu Selections

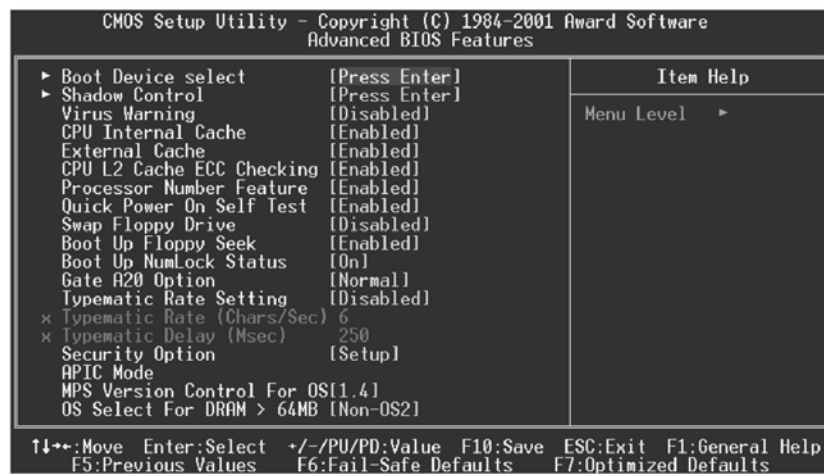
This table shows the selections that you can make on the Main Menu.

Item	Options	Description
Date	MM DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date.
IDE Primary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Master	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
IDE Secondary Slave	Options are in its sub menu.	Press <Enter> to enter the sub menu of detailed options.
Drive A Drive B	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in None	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.

Item	Options	Description
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/ Key	Select the situation in which you want the BIOS to stop the POST process and notify you.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

2.3 Advanced BIOS Features

■ Figure 3. Advanced BIOS Setup



Boot Device select

These BIOS attempts to load the operating system from the devices in the sequence selected in these items.

First/Second/Third Boot Device

The Choices: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, LAN, Disabled

Boot Other Device

The Choices: Enabled (default), Disabled

Shadow Control

If you highlight the literal “Press Enter” next to the “Shadow Control” label and then press the enter key, it will take you a submenu with the following options:

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM for faster execution.

Enabled (default)	Optional ROM is shadowed.
Disabled	Optional ROM is not shadowed.

C8000 - CFFFF Shadow / D0000 - DFFFF Shadow

Determines whether the optional ROM will be copied to RAM for faster execution.

Enabled	Optional ROM is shadowed.
Disabled (default)	Optional ROM is not shadowed.

Note : For C8000 - DFFFF option - ROM on PCI BIOS, BIOS will automatically enable the shadow RAM. User does not have to select the item.

Virus Warning

This option allows you to choose the VIRUS Warning feature that is used to protect the IDE Hard Disk boot sector. If this function is enabled and an attempt is made to write to the boot sector, BIOS will display a warning message on the screen and sound an alarm beep.

Disabled (default)	Virus protection is disabled.
Enabled	Virus protection is activated.

CPU Internal Cache

These fields allow you to Enable or Disable the CPU Internal Cache. Caching allow better performance.

Enabled (default)	Enable cache
Disabled	Disable cache

External Cache

This field allow you to Enable or Disable the CPU's "Level 2" secondary cache. Caching allows better performance.

Enabled (default)	Enabled cache
Disabled	Disabled cache

CPU L2 Cache ECC Checking

This item allows you to Enabled/ Disabled CPU L2 Cache ECC checking.

The Choices: **Enabled** (default), Disabled.

Processor Number Feature

The Intel processor serial number control option.

The Choices: **Enabled** (default), Disabled.

Quick Power On Self Test

Enabling this option will cause an abridged version of the Power On Self-Test (POST) to execute after you power up the computer.

Enabled (default)	Enable quick POST.
Disabled	Normal POST.

Swap Floppy Drive

For systems with two floppy drives, this option allows you to swap logical drive assignments.

The Choices: Enabled, **Disabled** (default).

Boot Up Floppy Seek

Enabling this option will test the floppy drives to determine if they have 40 or 80 tracks. Disabling this option reduces the time it takes to boot-up.

The Choices: **Enabled** (default), Disabled.

Boot Up NumLock Status

Selects the NumLock. State after power on.

On (default)	Numpad is number keys.
Off	Numpad is arrow keys.

Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

Normal	A pin in the keyboard controller controls Gate A20.
Fast (default)	Lets chipset control Gate A20.

Typematic Rate Setting

When a key is held down, the keystroke will repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be configured.

The Choices: **Disabled** (default), Enabled.

Typematic Rate (Chars/Sec)

Sets the rate at which a keystroke is repeated when you hold the key down.

The Choices: 6 (default), 8,10,12,15,20,24,30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The Choices: 250 (default), 500,750,1000.

Security Option

This option will enable only individuals with passwords to bring the system online and/or to use the CMOS Setup Utility.

System

A password is required for the system to boot and is also required to access the Setup Utility.

Setup (default)

A password is required to access the Setup Utility only.

This will only apply if passwords are set from the Setup main menu.

APIC Mode

Selecting Enabled enables ACPI device mode reporting from the BIOS to the operating system.

The Choices: Enabled (default), Disabled

MPS Version Control For OS

The BIOS supports versions 1.1 and 1.4 of the Intel multiprocessor specification.

Select the version supported by the operation system running on this computer.

The Choices: 1.4 (default), 1.1.

OS Select For DRAM > 64MB

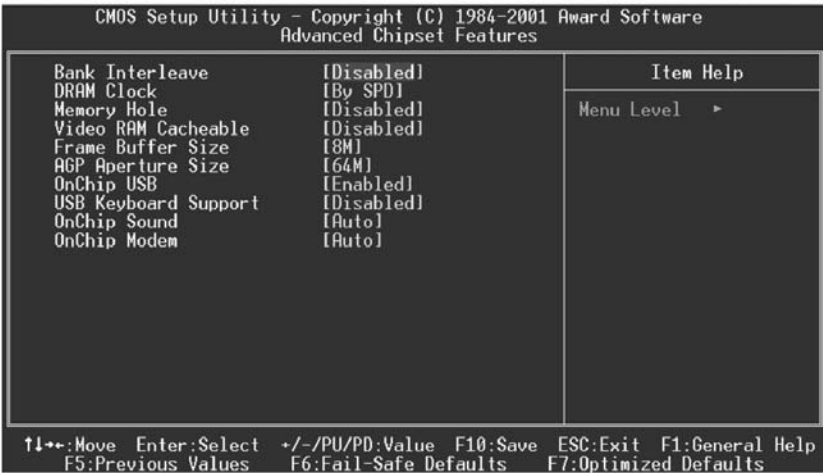
A choice other than Non-OS2 is only used for OS2 systems with memory exceeding 64MB.

The Choices: Non-OS2 (default), OS2.

2.4 Advanced Chipset Features

This submenu allows you to configure the specific features of the chipset installed on your system. This chipset manages bus speeds and access to system memory resources, such as DRAM and external cache. It also coordinates communications with the PCI bus. The default settings that came with your system have been optimized and therefore should not be changed unless you are suspicious that the settings have been changed incorrectly.

■ Figure 4. Advanced Chipset Setup



Bank Interleave

DRAM Clock

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

The Choices: By SPD (default), HCLK-33M, HCLK+33M, Host CLK.

Memory Hole

When enabled, you can reserve an area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. Refer to the user documentation of the peripheral you are installing for more information.

The Choices: **Disabled** (default), 15M-16M.

Video RAM Cacheable

Enabling this option allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The Choices: **Disabled** (default), Enabled.

Frame Buffer Size

This item allows you to control the VGA frame buffer size.

The Choices: **8M** (default), 4M, 2M.

AGP Aperture Size

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

The Choices: **64M** (default), 32M, 16M, 8M, 4M, 128M.

OnChip USB

This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The Choices: **Enabled** (default), Disabled.

USB Keyboard Support

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

The Choices: Enabled, **Disabled** (default).

OpChip Sound

The default setting of this item utilizes an onboard sound chip for audio output. There is no need to buy and insert a sound card. If sound card is installed, disable this item.

The Choices: **Auto** (default), Disabled.

OnChip Modem

This item allows you to control the onboard MC97 Modem controller.

The Choices: **Auto** (default), Disabled.

2.5 Integrated Peripherals

■ Figure 5. Integrated Peripherals



On-Chip IDE Control

The chipset contains a PCI IDE interface with support for two IDE channels. Select “Enabled” to activate the first and / or second IDE interface. Select “Disabled” to deactivate an interface, if you install a primary and / or secondary add-in IDE interface. If you highlight the literal “Press Enter” next to the “Onchip IDE Control” label and then press the enter key, it will take you a submenu with the following options:

OnChip IDE Channel0/1

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

The Choices: Enabled (default), Disabled.

IDE Prefetch

The onboard IDE drive interfaces supports IDE prefetching, for faster drive access. If you install a primary and/or secondary add-in IDE interface, set this field to Disabled if the interface does not support prefetching.

The Choices: Enabled (default), Disabled.

IDE Primary / Secondary Master / Slave PIO

The IDE PIO (Programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The Choices: Auto (default), Mode0, Mode1, Mode2, Mode3, Mode4.

IDE Primary / Secondary Master / Slave UDMA

Ultra DMA / 33 implementation is possible only if your IDE hard drive supports. Mode 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The Choices: Auto (default), Disabled.

Muti-Media setting

The multimedia setting submenu is used to configure various multimedia peripherals such as audio and game equipment. If you highlight the literal "Press Enter" next to the "Muti-Media setting" label and then press the enter key, it will take you a submenu with the following options:

Onboard Legacy Audio

The field controls the onboard legacy audio.

The Choices: Enabled (default), Disabled.

Sound Blaster

Hardware SoundBlaster Pro for Windows DOS box and real-mode DOS legacy compatibility.

The Choices: Enabled, Disabled (default).

SB I/O Base Address

Change the SoundBlaster Pro Base I/O Address settings.

The Choices: 220H(default), 240H, 260H, 280H.

SB IRQ Select

Change the SoundBlaster Pro interrupt signal.

The Choices: **IRQ5** (default), IRQ7, IRQ9, IRQ10.

SB DMA Select

Change the SoundBlaster Pro direct memory access setting.

The Choices: DMA0, **DMA1** (default), DMA2, DMA3.

MPU-401

Enable or Disable MPU-401 function.

The Choices: **Enabled** (default), Disabled.

MPU-401 I/O Address

Change the SoundBlaster Pro MPU-401 I/O address.

The Choices: 300-303H, 310-313H, 320-323H, **330-333H** (default).

Game Port (200-207H)

Change the joystick connect port address.

The Choices: **Enabled** (default), Disabled.

Init Display First

This item allows you to decide to active whether PCI Slot or on-chip VGA first.

The Choices: **PCI Slot** (default), AGP.

IDE HDD Block Mode

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

The Choices: **Enabled** (default), Disabled.

Onboard FDD Controller

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

The Choices: **Enabled** (default), Disabled.

Onboard Serial Port 1

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

The Choices: **Auto** (default), Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3.

Onboard IR Port

Select IR Address.

The Choices: Auto, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, **Disabled** (default).

UART 2 Mode

This item allows you to determine which Infrared (IR) function onboard I/O chip.

The Choices: **HPSIR** (default), ASKIR.

IR Function Duplex

This item allows you to decide to active IR transmission delay.

The Choices: **Half** (default), Full.

TX, RX inverting enable

This item allows you to determine the active of Rx,Tx.

The Choices: **No/Yes** (default), No/No, Yes/No, Yes/Yes.

IR Transmission Delay

This item allows you to enable/ disable IR transmission delay.

The Choices: **Enabled** (default), Disabled.

UR2 Duplex Mode

Select the value required by the IR device connected to the IR port. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time.

The Choices: **Half** (default), Full.

Onboard Parallel Port

This item allows you to determine access onboard parallel port controller with which I/O Address.

The Choices: **378/IRQ7** (default), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

The default value is SPP.

EPP

Using Parallel Port as Enhanced Parallel Port.

ECP

Using Parallel Port as Extended Capabilities Port.

ECP+EPP (default)

Using Parallel Port as ECP & EPP mode.

Normal

Supports EPP or ECP mode.

ECP Mode Use DMA

Select a DMA Channel for the port.

The Choices: 3 (default), 1.

Parallel Port EPP Type

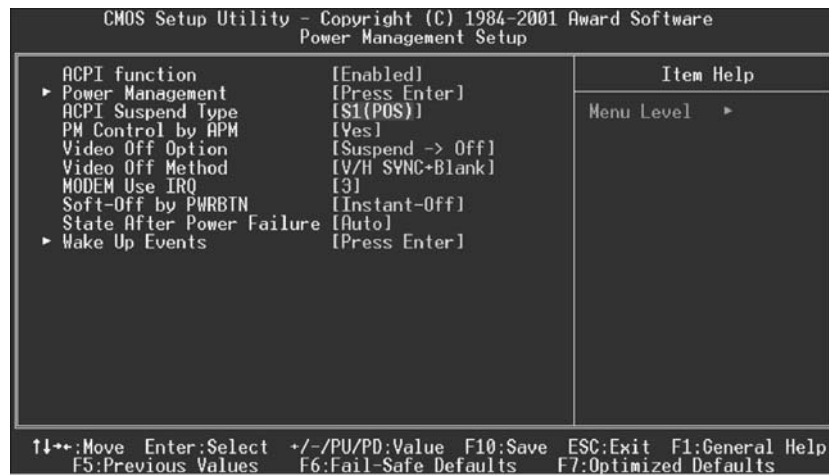
This option allows you to select a DMA Channel for the parallel port.

The Choices: EPP1.9 (default), EPP1.7.

2.6 Power Management Setup

The Power Management Setup Menu allows you to configure your system to utilize energy conservation and power up/power down features.

■ Figure 6. Power Management Setup



ACPI function

This item displays the status of the Advanced Configuration and Power Management (ACPI).

The Choices: Enabled (default), Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

- 1.HDD Power Down.
- 2.Doze Mode.
- 3.Suspend Mode.

There are four options of Power Management, three of which have fixed mode settings

Min. Power Saving

Minimum power management.
 Doze Mode = 1 hr.
 Standby Mode = 1 hr
 Suspend Mode = 1 hr.
 HDD Power Down = 15 min

Max. Power Saving

Maximum power management only available for sl CPU's.
 Doze Mode = 1 min
 Standby Mode = 1 min.
 Suspend Mode = 1 min.
 HDD Power Down = 1 min.

User Defined (default)

Allows you to set each mode individually.
 When not disabled, each of the ranges are from 1 min. to 1 hr. except
 for HDD Power Down which ranges from 1 min. to 15 min. and
 disable.

ACPI Suspend Type

This item allows you to select the suspend type under ACPI operating system.

S1 (POS) (default) Power on Suspend
S3 (STR) Suspend to RAM

PM Control by APM

No	System BIOS will ignore APM when Power Management is on.
Yes (default)	System BIOS will wait for ROM's prompt before it enters any PM mode.

Video Off Option

This determines the manner in which the monitor is blanked.

Suspend -> Off (default)	During Suspend mode, the monitor will be Turned off.
All Mode -> Off	During All modes, the monitor will be turn off.
Always On	During Always mode, the monitor will be Turn on.

Video Off Method

This option determines the manner in which the monitor is goes blank.

V/H SYNC+Blank (default)

This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen

This option only writes blanks to the video buffer.

DPMS Support (default)

Initial display power management signaling

MODEM Use IRQ

This determines the IRQ, which the MODEM can use.

The Choices: 3 (default), 4, 5, 7, 9, 10, 11, NA.

Soft-Off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has “hung.”

The Choices: Delay 4 Sec, **Instant-Off** (default).

37.5%, 25%, 12.5%.

State After Power Failure

This field determines the action the system will automatically take when power is restored to a system that had lost power previously without any subsequent manual intervention. There are 3 sources that provide current to the CMOS area that retains these Power-On instructions; the motherboard battery (3V), the Power Supply (5VSB), and the Power Supply (3.3V). While AC is not supplying power, the motherboard uses the motherboard battery (3V). If AC power is supplied and the Power Supply is not turned on, 5VSB from the Power Supply is used. When the Power Supply is eventually turned on 3.3V from the Power Supply will be used.

The Choices: Auto (default), On, Off.

Wake Up Events

If you highlight the literal “ Press Enter” next to the “Wake Up Events” label and then press the enter key, it will take you a submenu with the following options:

VGA	When set to on, any event occurring at a VG A port will awaken a system which has been powered down. The Choices: Off (default), On.
LPT&COM	When set to On , any event occurring at a LPT/COM Port will awaken a system which has been powered down. The Choices: LPT/COM (default), COM, LPT, NONE.
HDD&FDD	When set to On (default), any event occurring at a hard or floppy drive will awaken a system which has been powered down. The Choices: On (default), Off.
PCI MASTER	When set to On, any event occurring at PCI will awaken a system which has been powered down. The Choices: Off (default), On.
PowerOn by PCI Card	The Choices: Disabled (default), Enabled.
Wake Up On LAN/Ring	To use this function, you need a LAN add-on card which support power on function. It should also support the wake-up on LAN jump. The Choices: Disabled (default), Enabled.
RTC Alarm Resume	When “Enabled”, you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode. The Choices: Disabled (default), Enabled.

Date (of Month)

You can choose which month the system will boot up.

Resume Time (hh: mm: ss)

You can choose the hour, minute and second the system will boot up.

IRQs Activity Monitoring

When set to ON (default), any event occurring at Primary INTR will awaken a system which has been powered down.

The following is a list of IRQ, Inter ReQuest, which can be exempted much as the COM ports and LPT ports above can. When an I/P device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the services.

As above, the choices are On and Off. Off is the default.

When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

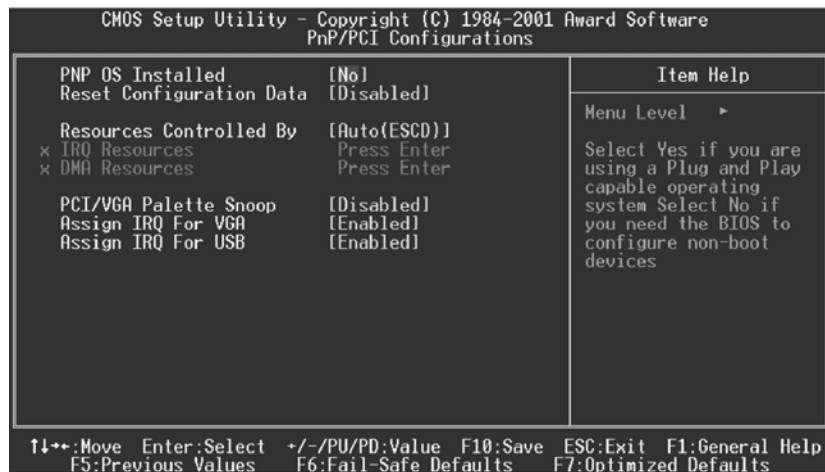
Primary INTR

IRQ3	(COM2)
IRQ4	(COM1)
IRQ5	(LPT2)
IRQ6	(Floppy Disk)
IRQ7	(LPT1)
IRQ8	(RTC Alarm)
IRQ9	(IRQ2 Redir)
IRQ10	(Reserved)
IRQ11	(Reserved)
IRQ12	(PS2/Mouse)
IRQ13	(Coprocessor)
IRQ14	(Hard Disk)
IRQ15	(Reserved)

2.7 PnP/PCI Configurations

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

■ Figure 7. PnP/PCI Configurations



PNP OS Installed

When set to “Yes”, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating systems, like WindowsTM95. When set to “No”, BIOS will initialize all the PnP cards. Therefore for non-PnP operating system (DOS, NetwareTM), this option must be set to “No”.

The Choices: No (default), Yes.

Reset Configuration Data

The system BIOS supports the PnP feature which requires the system to record which resources are assigned and protects resources from conflict. Every peripheral device has a node, which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved in the system BIOS. If the Disabled (default) option is chosen, the system's ESCD will update only when the new configuration varies from the last one. If the Enabled option is chosen, the system is forced to update ESCDs and then is automatically set to the "Disabled" mode.

IRQ-3	assigned to: PCI / ISA PnP
IRQ-4	assigned to: PCI / ISA PnP
IRQ-5	assigned to: PCI / ISA PnP
IRQ-7	assigned to: PCI / ISA PnP
IRQ-9	assigned to: PCI / ISA PnP
IRQ-10	assigned to: PCI / ISA PnP
IRQ-11	assigned to: PCI / ISA PnP
IRQ-12	assigned to: PCI / ISA PnP
IRQ-14	assigned to: PCI / ISA PnP
IRQ-15	assigned to: PCI / ISA PnP

The above settings will be shown on the screen only if "Manual" is chosen for the resources controlled by function.

Legacy is the term, which signifies that a resource is assigned to the ISA Bus and provides non-PnP ISA add-on cards. PCI / ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

The Choices: Disabled (default), Enabled.

Resources Controlled By

By Choosing "Auto(ESCD)" (default), the system BIOS will detect the system resources and automatically assign the relative IRQ and DMA channel for each peripheral. By Choosing "Manual", the user will need to assign IRQ & DMA for add-on cards. Be sure that there are no IRQ/DMA and I/O port conflicts.

IRQ Resources

This submenu will allow you to assign each system interrupt a type, depending on the type of device using the interrupt. When you press the "Press Enter" tag, you will be directed to a submenu that will allow you to configure the system interrupts. This is only configurable when "Resources Controlled By" is set to "Manual".

DMA Resources

When you press the “Press Enter” tag, you will be directed to a submenu that will allow you to make configuration changes the system DMA channels. This is only configurable when “Resources Controlled By” is set to “Manual”.

When resources are controlled manually, assign each system DMA channel a type, depending on the type on device using the DMA channel.

PCI / VGA Palette Snoop

Choose Disabled or Enabled. Some graphic controllers which are not VGA compatible take the output from a VGA controller and map it to their display as a way to provide boot information and VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Write.

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

Disabled (default)	Disables the function.
Enabled	Enables the function.

Assign IRQ For USB

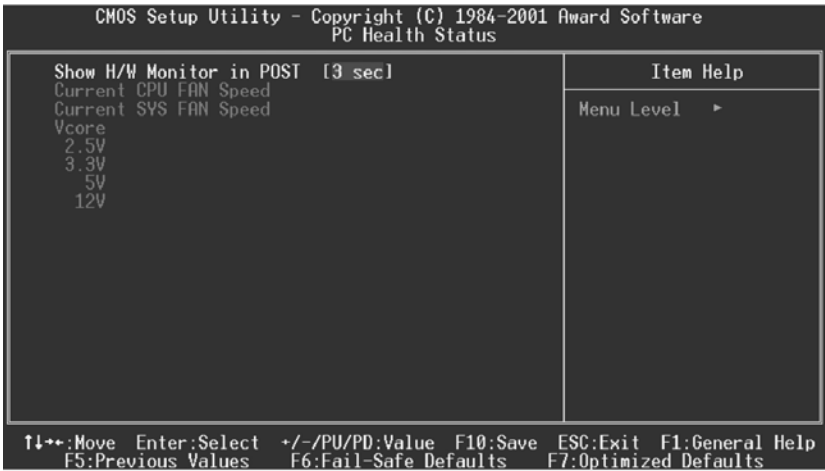
Lets the user choose which IRQ to assign for USB.

Assign IRQ For VGA

Lets the user choose which IRQ to assign for the VGA.

2.8 PC Health Status

■ Figure 8. PC Health Status



Show H/W Monitor in Post

If you computer contain a monitoring system, it will show PC health status during POST stage. The item offers several delay time to select you want.
The Choices: 3 sec (default), 2 sec, 1 sec, None.

Current SYSFAN Speed

This field displays the current SYSFAN speed.

Current CPUFAN Speed

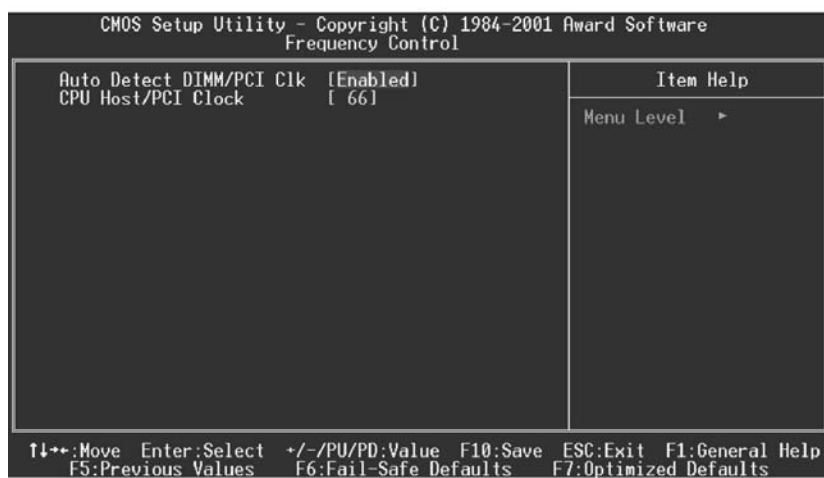
This field displays the current CPUFAN speed.

CPU Vcore/+2.5V/+3.3V/+5V/+12V

Detect the system's voltage status automatically.

2.9 Frequency Control

■ Figure 9. Frequency Control



Auto Detect DIMM/PCI Clk

This item allows you to enable/ disable auto Detect DIMM/PCI Clock.

The Choices: Enabled (default), Disabled.

CPU Host/PCI Clock

The item allows you select CPU Host/PCI clock.

3. Trouble Shooting

PROBLEM

No power to the system at all. Power light does not illuminate, fan inside power supply does not turn on. Indicator light on keyboard does not turn on.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Power cable is unplugged.	Visually inspect power cable.	Make sure power cable is securely plugged in.
Defective power cable.	Visually inspect the cable; try another cable.	Replace cable.
Power supply failure.	Power cable and wall socket are OK, but system is still dead.	Contact technical support.
Faulty wall outlet; circuit breaker or fuse blown.	Plug in device known to work in socket and test	Use different socket, repair outlet, reset circuit breaker or replace fuse.

PROBLEM

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is spinning.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Memory DIMM is partially dislodged from the slot on the motherboard.	Turn off computer. Take cover off system unit. Check the DIMM to ensure it is securely seated in the slot.	Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

PROBLEM

System does not boot from hard disk drive, can be booted from CD-ROM drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Connector between hard drive and system board unplugged.	When attempting to run the FDISK utility you get a message, INVALID DRIVE SPECIFICATION.	Check cable running from disk to disk controller board. Make sure both ends are securely plugged in; check the drive type in the standard CMOS setup.
Damaged hard disk or disk controller.	Format hard disk; if unable to do so the hard disk may be defective.	Contact technical support.
Hard disk directory or FAT is scrambled.	Run the FDISK program, format the hard drive. Copy data that was backed up onto hard drive.	Backing up the hard drive is extremely important. All hard disks are capable of breaking down at any time.

PROBLEM

System only boots from CD-ROM. Hard disk can be read and applications can be used but booting from hard disk is impossible.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Hard Disk boot program has been destroyed.	A number of causes could be behind this.	Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

PROBLEM

Error message reading “SECTOR NOT FOUND” or other error messages not allowing certain data to be retrieved.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
A number of causes could be behind this.	Use a file by file backup instead of an image backup to backup the hard disk.	Back up any salvageable data. Then low level format, partition, and high level format the hard drive. Re-install all saved data when completed.

PROBLEM

Screen message says “Invalid Configuration” or “CMOS Failure.”

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Incorrect information entered into the configuration (setup) program.	Check the configuration program. Replace any incorrect information.	Review system's equipment . Make sure correct information is in setup.

PROBLEM

Screen is blank.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
No power to monitor.		Check the power connectors to monitor and to system. Make sure monitor is connected to display card.
Monitor not connected to computer.		See instructions above.

PROBLEM

No screen.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Memory problem.		Reboot computer. Reinstall memory, make sure that all memory modules are installed in correct sockets.
Computer virus.		Use anti-virus programs to detect and clean viruses.

PROBLEM

Screen goes blank periodically.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Screen saver is enabled.		Disable screen saver.

PROBLEM

Keyboard failure.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keyboard is disconnected.		Reconnect keyboard. Check keys again, if no improvement replace keyboard.

PROBLEM

No color on screen.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Faulty Monitor.		If possible, connect monitor to another system. If no color replace monitor.
CMOS incorrectly set up.		Call technical support.

PROBLEM

C: drive failure.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Hard drive cable not connected properly.		Check hard drive cable.

PROBLEM

Cannot boot system after installing second hard drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Master/slave jumpers not set correctly. Hard drives not compatible / different manufacturers.		Set master/slave jumpers correctly. Run SETUP program and select correct drive types. Call drive manufacturers for compatibility with other drives.

PROBLEM

Missing operating system on hard drive.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
CMOS setup has been changed.		Run setup and select correct drive type.

PROBLEM

Certain keys do not function.

PROBABLE CAUSE	DIAGNOSIS	SOLUTION
Keys jammed or defective.		Replace keyboard.

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