Chapter 1

INTRODUCTION

The 815EP Pro and 815EP Pro-R (MS-6337, V3.0B) ATX mainboards are high-performance computer mainboards based on Intel® 815EP chipset. The MS-6337 is optimized to support the Intel® Pentium® III (FC-PGA) and VIA Cynix III processors for high-end business/personal desktop markets.

The Intel 815EP chipset contains two components: the 82815EP Memory Controller Hub (MCH) and the 82801BA I/O Controller Hub 2 (ICH2). The MCH integrates a 66/100/133-MHz, P6 family system bus controller , AGP (2X/4X) discrete graphics card, 100/133-MHz SDRAM controller, and a high speed accelerated hub architecture interface for communication with the ICH2. The ICH2 integrates an UltraATA/100 controller, 2 USB host controllers with a total of 4 ports, LPC interface controller, FWH interface controller, PCI interface controller, AC'97 digital link, integrated LAN controller, and a hub interface for communication with the MCH.

Mainboard Features

CPU
- Support Socket370 for Intel® Pentium® III(FC-PGA)/VIA Cynix III processor.
- Support 500MHz, 550MHz, 600MHz, 633MHz, 667MHz, 700MHz, 733MHz, 800MHz, 866MHz, 933MHz, and 1GHz

Chipset
- Intel® 815EP chipset. (544 BGA)
    - AGP 4x/2x universal slot
    - Support 66/100/133MHz FSB
- Intel® ICH2 chipset. (241 BGA)
    - AC'97 Audio support
    - 2 full IDE channels, up to ATA100
    - Low pin count interface for SIO
    - 2 USB host controller/4USB ports

Main Memory
- Support four 168-pin DIMM sockets.
- Support a maximum memory size of 256MB or 512MB SDRAM.

Slots
- One CNR (Communication Network Riser).
- One AGP (Accelerated Graphics Port) 2x/4x slot
  (One AGP Pro slot for 815EP Pro-R)
- Six PCI 2.2 32-bit Master PCI Bus slots. All PCI slots can be used as master.
- Support 3.3v/5v PCI bus Interface.

On-Board IDE
- An IDE controller on the ICH2 chipset provides IDE HDD/CD-ROM with PIO, Bus Master and Ultra DMA 66/100 operation modes.
- Can connect up to four IDE devices.
    - ATA RAID 0.1 supported by Promise PDC20265R (815EP Pro-R only)

On-Board Peripherals
● On-Board Peripherals include:
      - 1 floppy port supports 2 FDD with 360K, 720K, 1.2M,
        1.44M and 2.88Mbytes.
      - 2 serial ports (COMA/COMB)
      - 1 parallel port supports SPP/EPP/ECP mode
      - 4 USB ports (Rear * 2 / Front * 2)
      Note: One front USB port provides USB PC to PC Network Function
              (815EP Pro-R only).
      - 1 VGA port

Audio
● ICH2 chip integrated
● Support 2 Channel Audio or 4 Channel Audio (for 815EP Pro-R)

BIOS
● The mainboard BIOS provides "Plug & Play" BIOS which detects the peripheral devices and expansion cards of the board automatically.
● The mainboard provides a Desktop Management Interface(DMI) function which records your mainboard specifications.
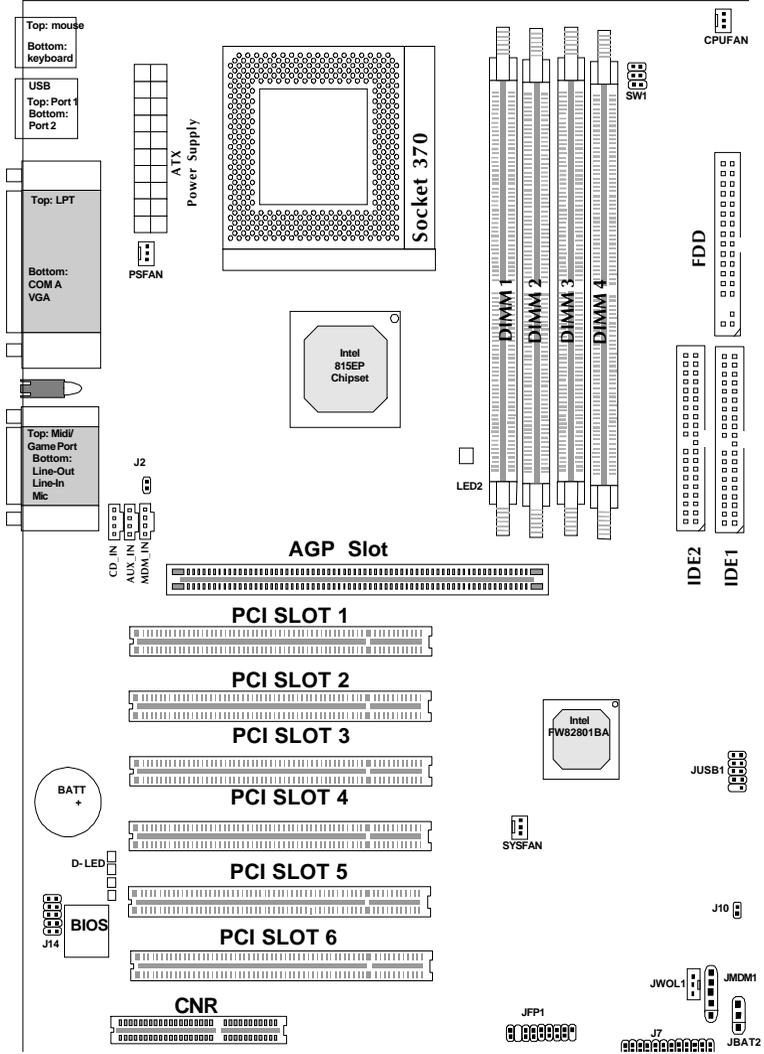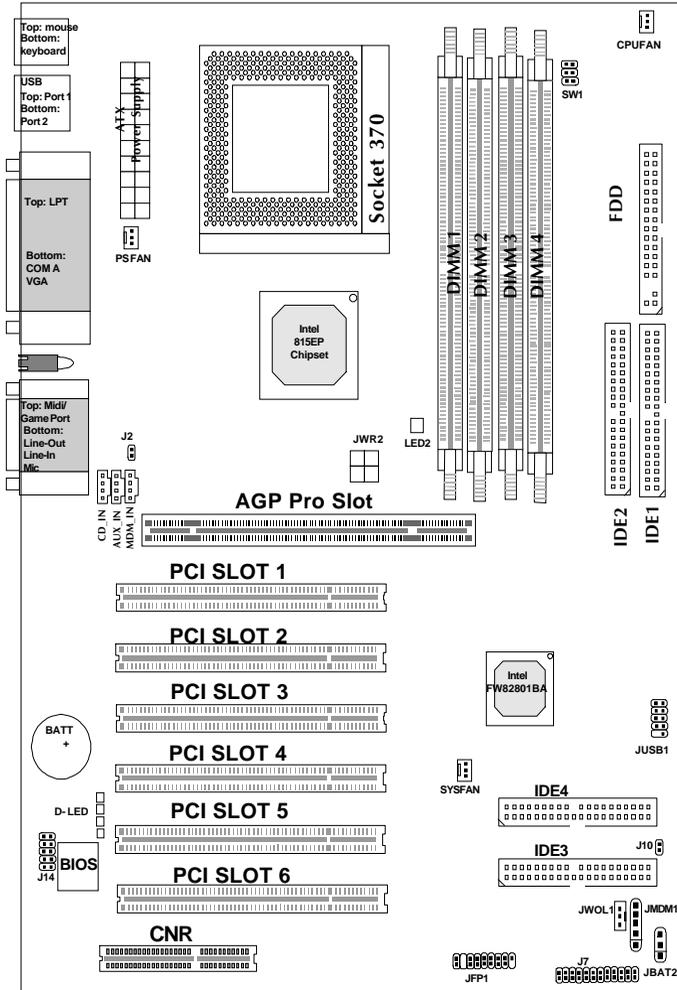
Dimension
● ATX Form Factor

Mounting
● 6 mounting holes.

Mainboard Layout

815EP Pro (MS-6337 V3.0B) ATX Mainboard

Top: mouse
Bottom:
keyboard

USB
Top: Port 1
Bottom:
Port 2

ATX Power Supply

Socket 370

CPUFAN

SW1

DIMM 1
DIMM 2
DIMM 3
DIMM 4

FDD

Top: LPT

Bottom:
COM A
VGA

PSFAN

Intel
815EP
Chipset

Top: Midi/
Game Port
Bottom:
Line-Out
Line-In
Mic

J2

JWR2

LED2

CD IN
AUX IN
MDM IN

IDE2
IDE1

AGP Pro Slot

PCI SLOT 1

PCI SLOT 2

PCI SLOT 3

Intel
FW82801BA

BATT
+

PCI SLOT 4

SYSFAN

JUSB1

IDE4

D-LED

PCI SLOT 5

IDE3

J10

J14   BIOS

PCI SLOT 6

JWOL1   JMDM1

CNR

JFP1

J7

JBAT2

# 815EP Pro-R (MS-6337 V3.0B) ATX Mainboard

Chapter 2

HARDWARE INSTALLATION

Central Processing Unit: CPU

The mainboard operates with **Intel® Pentium® III (FC-PGA)/VIA CynixIII processor.** The mainboard uses a CPU socket called Socket 370 for easy CPU installation. The CPU should always have a Heat Sink and a cooling fan attached to prevent overheating.

CPU Installation Procedures

1. Pull the lever sideways away from the socket. Then, raise the lever up to a 90-degree angle.

2. Locate Pin 1 in the socket and look for the white dot or cut edge in the CPU. Match Pin 1 with the white dot/cut edge. Then, insert the CPU. It should insert easily.

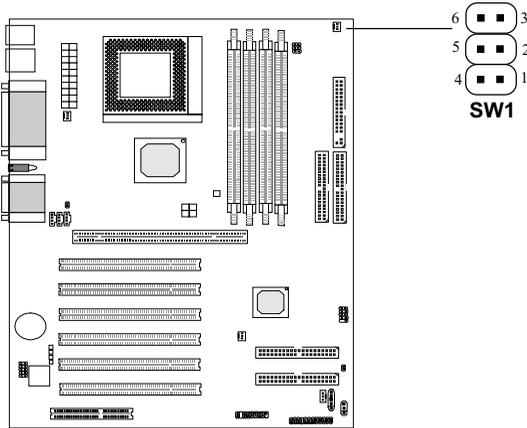3. Press the lever down to complete the installation.
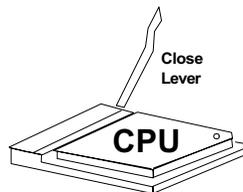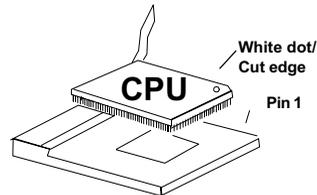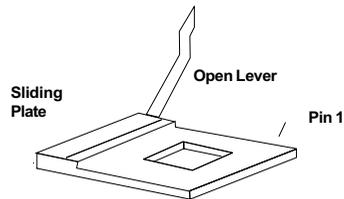
CPU Core Speed Derivation Procedure

The mainboard CPU Bus Frequency can be set through BIOS setup.

            If   CPU Clock   = 100MHz
                  Core/Bus ratio   =   7
       then   CPU core speed   = Host Clock x Core/Bus ratio
                             =   700MHz

Overclocking Jumper: SW1

Overclocking is operating a CPU/Processor beyond its specified frequency. SW1 jumper is used for overclocking.

SW1	Function
6 ▪ 3 / 5 ▪ 2 / 4 ▪ 1	**Auto**
6 ▪ 3 / 5 ▪ 2 / 4 ▪ 1	**66.6→100** **133→100**
6 ▪ 3 / 5 ▪ 2 / 4 ▪ 1	**133→66.6** **100→66.6**
6 ▪ 3 / 5 ▪ 2 / 4 ▪ 1	**100→133**

Note: If you used this jumper for overclocking, you also need to modify the CPU Bus ratio through BIOS.

Fan Power Connectors: CPUFAN, SYSFAN & PSFAN

These connector support system cooling fan with + 12V. It supports three pin head connector.   When connecting the wire to the connector, always take note that the red wire is the positive and should be connected to the +12V, the black wire is Ground and should be connected to GND. If your mainboard has System Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.
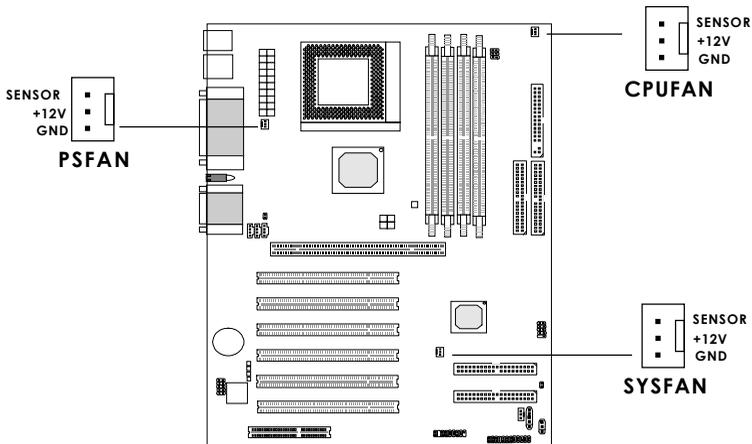
CPUFAN: Processor Fan
SYSFAN: System Fan
PSFAN: Power Supply Fan

For fans with fan speed sensor, every rotation of the fan will send out 2 pulses. System Hardware Monitor will count and report the fan rotation speed.

Note: **1.** Always consult vendor for proper CPU cooling fan.
         2. CPU FAN supports the FAN control. You can install PC Alert utility. This will automatically control the CPU FAN Speed according to the actual CPU temperature.

Clear CMOS Jumper: JBAT2

A battery must be used to retain the mainboard configuration in CMOS
RAM. Short 1-2 pins of JBAT2 to store the CMOS data.

JBAT2
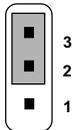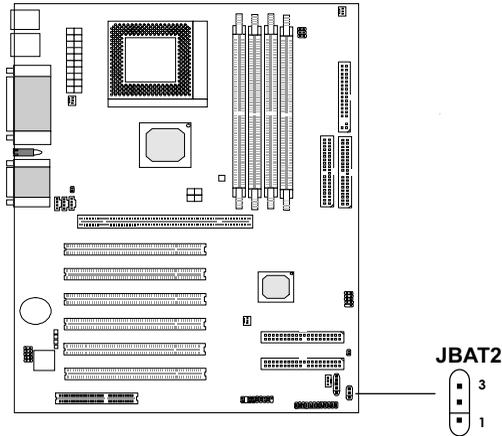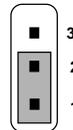
Clear Data

Save Data

Note: You can clear CMOS by shorting 2-3 pin, while the system is off.
Then, return to 1-2 pin position. Avoid clearing the CMOS while
the system is on, it will damage the mainboard. Always unplug
the power cord from the wall socket.

Memory Installation

Memory Bank Configuration

The mainboard supports a maximum memory size of 512MB: It provides
four 168-pin **unbuffered** DIMMs (Double In-Line Memory Module) sockets.
It supports 32MB to 512MB DIMM memory module.
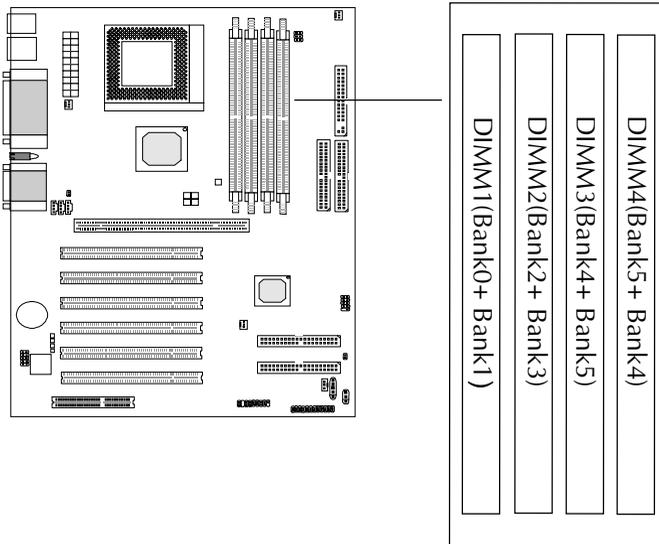
Memory Installation Procedures

A. How to install a DIMM Module
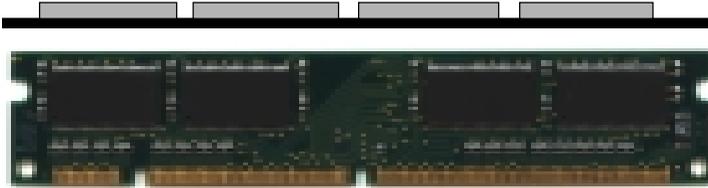
Single Sided DIMM
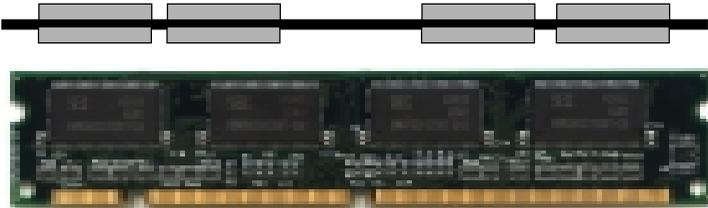
Double Sided DIMM

1. The DIMM slot has 2 Notch Keys "VOLT and DRAM", so the DIMM memory module can only fit in one direction.

2. Insert the DIMM memory module vertically into the DIMM slot. Then push it in.

DRAM   VOLT
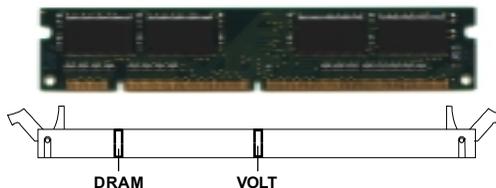
3. The plastic clip at the side of the DIMM slot will automatically close.

Memory Population Rules

1. Supports only SDRAM DIMM.

2. To operate properly, at least one 168-pin DIMM module must be installed.

3. This mainboard supports Table Free memory, so memory can be installed on DIMM1, DIMM2, DIMM3 or DIMM4 in any order.

4. Supports 3.3 volt DIMM.

5. The DRAM addressing and the size supported by the mainboard is shown at the next page.

Note: It is not recommended to install a Double Side DIMM module to DIMM 3 and DIMM 4 at the same time as this will not function properly. To make use of DIMM 3 and DIMM 4 at the same time, insert a Single Side DIMM module to each of them. Please use the same type or model of SDRAM. Moreover, you should always use DIMM 3 if you have only one Single Side DIMM module. Installing it on DIMM 4 is not allowed and this will not function properly. Refer to the table below for proper combination.

DIMM1	DIMM2	DIMM3	DIMM4
DS/SS	DS/SS	DS	X
DS/SS	DS/SS	SS	SS
DS/SS	DS/SS	X	DS
DS/SS	DS/SS	SS	X

DS: Double Side DIMM
SS: Single Side DIMM
X: None/Cannot be installed

Table 2.3-1 SDRAM Memory Addressing

DIMM Capacity	# of Devices/ DIMM	# of Sides	Dram Tech.	Front Side Population		Back Side Population		Row	Bank	Column
				Count	Config	Count	Config			
0		N/A		Empty		Empty		N/A	N/A	N/A
32MB	16	D S	16Mb	8-	2Mb x8	8-	2Mb x8	11	1	9
32MB	4	S S	64Mb	4-	4Mb x16			12	2	8
48MB	12	D S	64/16Mb	4-	4Mb x16	8-	2Mb x8	12	2/1	8
64MB	8	D S	64Mb	4-	4Mb x16	4-	4Mb x16	12	2	8
64MB	8	S S	64Mb	8-	8Mb x8			12	2	9
64MB	4	S S	128Mb	4-	8Mb x16			12	2	9
96MB	12	D S	64Mb	8-	8Mb x8	4-	4Mb x16	12	2	9/8
96MB	8	D S	128/64Mb	4-	8Mb x16	4-	4Mb x16	12	2	9/8
128MB	16	D S	64Mb	8-	8Mb x8	8-	8Mb x8	12	2	9
128MB	8	D S	128Mb	4-	8Mb x16	4-	8Mb x16	12	2	9
128MB	8	S S	128Mb	8-	16Mb x8			12	2	10
128MB	4	S S	256Mb	4-	16Mb x16			13	2	9
192MB	12	D S	128Mb	8-	16Mb x8	4-	8Mb x16	12	2	10/9
192MB	16	D S	128/64Mb	8-	16Mb x8	8-	8Mb x8	12	2	10/9
256MB	16	D S	128Mb	8-	16Mb x8	8-	16Mb x8	12	2	10
256MB	8	D S	256Mb	4-	16Mb x16	4-	16Mb x16	13	2	9
256MB	8	S S	256Mb	8-	32Mb x8			13	2	10
512MB	16	D S	256Mb	8-	32Mb x8	8-	32Mb x8	13	2	10

Case Connector: JFP1

The Keylock, Power Switch, Reset Switch, Power LED, Speaker and HDD LED are all connected to the JFP1 connector block.

JFP1
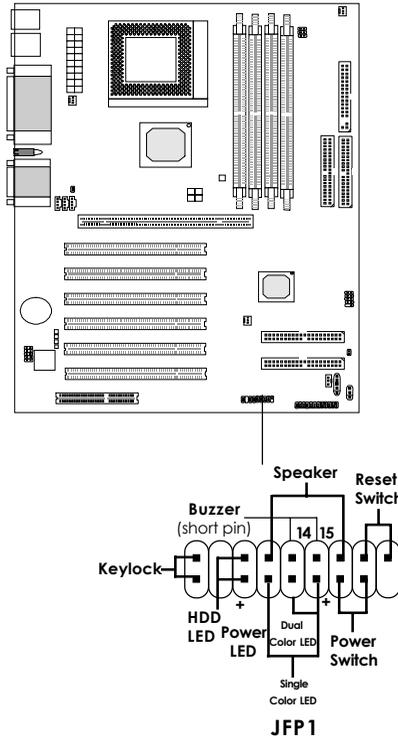
Power Switch

Connect to a 2-pin push button switch. This switch has the same feature with JRMS1.

Reset Switch

Reset switch is used to reboot the system rather than turning the power ON/ OFF. Avoid rebooting while the HDD LED is lit. You can connect the Reset switch from the system case to this pin.

Power LED

The Power LED is lit while the system power is on. Connect the Power LED from the system case to this pin. There are two types of LED that you can use: 3-pin single color LED or 2-pin dual color LED(ACPI request).

      a. 3 pin single color LED connect to pin 4, 5, & 6. This LED will lit
         when the system is on.
      b. 2 pin dual color LED connect to pin 5 & 6.

            GREENColor: Indicate the system is in full on mode.
            ORANGEColor: Indicate the system is in suspend mode.

Speaker

Speaker from the system case is connected to this pin.
If on-board Buzzer is available:
Short pin 14-15:   On-board Buzzer Enabled.
Open pin 14-15:   On-board Buzzer Disabled.

HDD LED

HDD LED shows the activity of a hard disk drive. Avoid turning the power off while the HDD led is lit. You can connect the HDD LED from the system case to this pin.

Keylock

Keylock allows you to disable the keyboard for security purposes. You can connect the keylock to this pin.

Floppy Disk Connector: FDD

The mainboard also provides a standard floppy disk connector FDD that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy disk types. This connector supports the provided floppy drive ribbon cables.
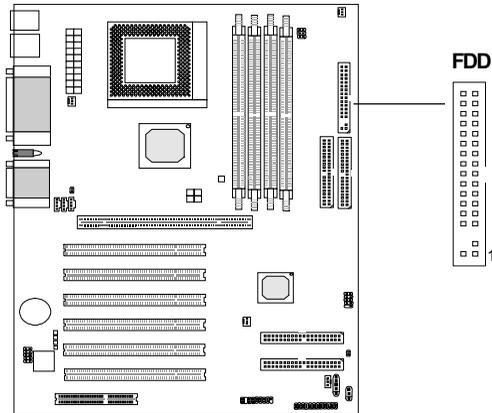
Hard Disk Connectors: IDE1 ~ IDE4

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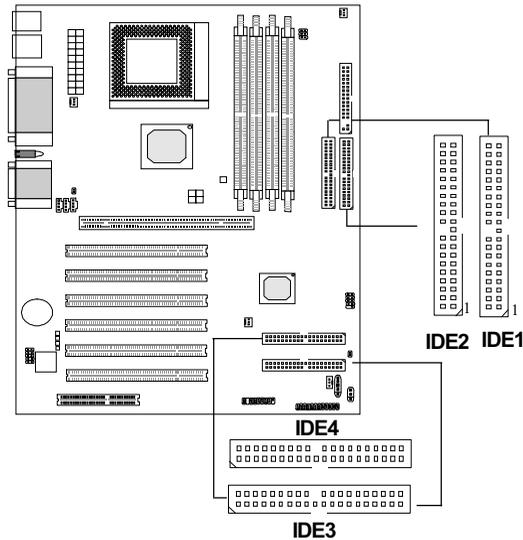
IDE2 IDE1

IDE4

IDE3

For 815EP-Pro
There are two HDD connectors (IDE1 & IDE2) on 815EP Pro mainboard.

For 815EP Pro-R
There are four HDD connectors (IDE1, IDE2, IDE3, IDE4) on 815EP Pro-R mainboard. IDE3 & IDE4 are provided for IDE RAID function. Please refer to IDE RAID user's manual for more information on IDE RAID function.

Power Supply

ATX 20-pin Power Connector: JWR

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported by this mainboard. This power connector supports instant power on function which means that system will boot up instantly when the power connector is inserted on the board.

ATX Power Connector
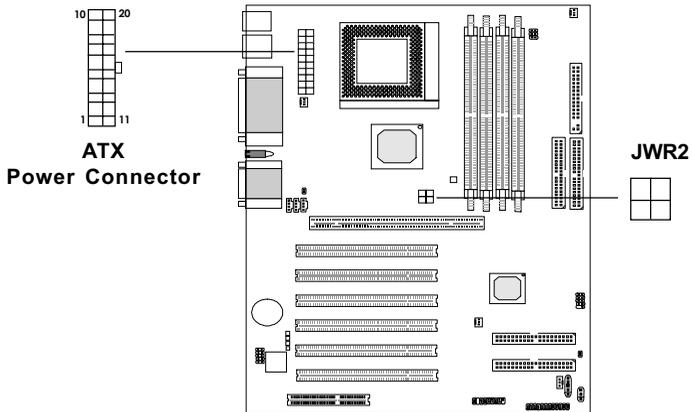
JWR2

Note: JWR2 is the power connector for AGP Pro card. Only for 815EP Pro-R.

PIN DEFINITION

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

Warning: Since the mainboard has the instant power on function, make sure that all components are installed properly before inserting the power connector to ensure that no damage will be done.

Serial Port Connectors: COM A and COM B

The mainboard has two 9-pin male DIN connectors for serial port COM A & COM B. These ports are 16550A high speed communication ports that send/receive 16 bytes FIFOs. These connectors are allowed to connected to mouse or modem cable.

COM A   COM B

Serial Port (9-pin Male)
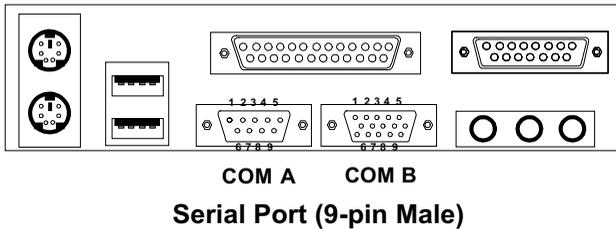
PIN DEFINITION

PIN	SIGNAL
1	**DCD**(Data Carry Detect)
2	**SIN**(Serial In or Receive Data)
3	**SOUT**(Serial Out or Transmit Data)
4	**DTR**(Data Terminal Ready)
5	**GND**
6	**DSR**(Data Set Ready)
7	**RTS**(Request To Send)
8	**CTS**(Clear To Send)
9	**RI**(Ring Indicate)

Parallel Port Connector: LPT1

The mainboard provides a 25 pin female centronic connector for LPT. A parallel port is a standard printer port that also supports Enhanced Parallel Port(EPP) and Extended capabilities Parallel Port(ECP). See connector and pin definition below:

Parallel Port (25-pin Female)

LPT 1
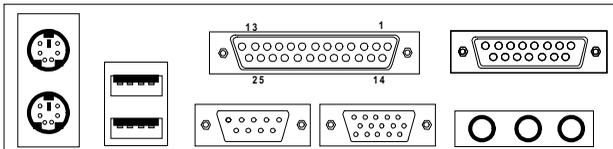
PIN DEFINITION

PIN	SIGNAL	PIN	SIGNAL
1	STROBE	14	AUTO FEED#
2	DATA0	15	ERR#
3	DATA1	16	INIT#
4	DATA2	17	SLIN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SELECT		

Mouse Connector: JKBMS1

The mainboard provides a standard PS/2® mouse mini DIN connector for attaching a PS/2® mouse. You can plug a PS/2® mouse directly into this connector. The connector location and pin definition are shown below:
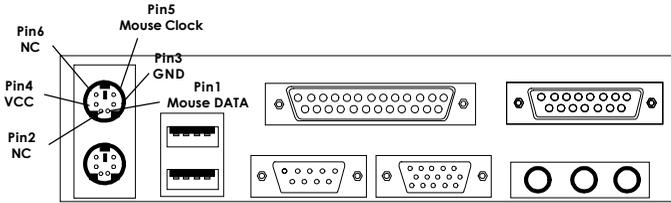
PS/2 Mouse (6-pin Female)

Keyboard Connector: JKBMS1

The mainboard provides a standard PS/2® keyboard mini DIN connector for attaching a keyboard. You can plug a keyboard cable directly to this connector.
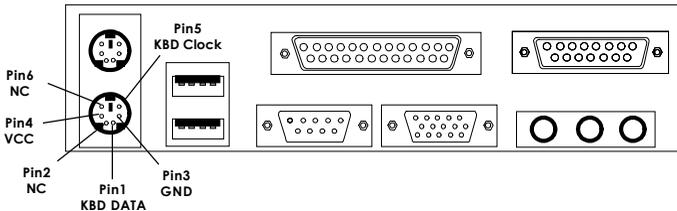
PS/2 Keyboard (6-pin Female)

Joystick/Midi Connectors

You can connect joystick or game pad to this connector.

Joystick/MIDI
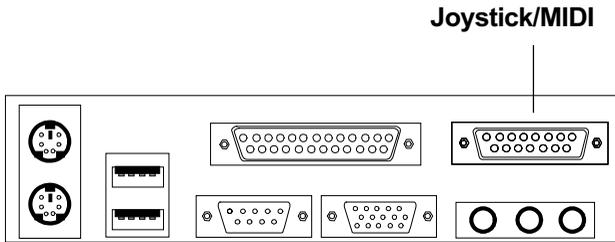
Audio Port Connectors

Line Out is a connector for Speakers or Headphones. **Line In** is used for external CD player, Tape player, or other audio devices. **Mic** is a connector for the microphones.

Line Out   Line In   Mic
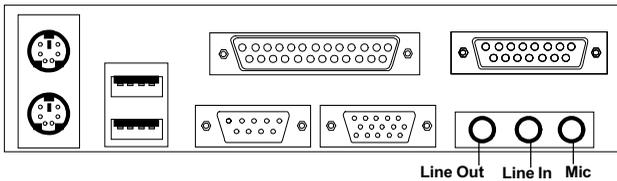
1/8" Stereo Audio Connectors

For 815EP Pro-R

815EP Pro-R supports Audio Multi-Channel function. This allows you to change the Line In to 3,4 channel output and Line Out to 1, 2 channel output.

USB Connectors

The mainboard provides a **UHCI(Universal Host Controller Interface) Universal Serial Bus root** for attaching USB devices like: keyboard, mouse and other USB devices. You can plug the USB device directly to this connector.
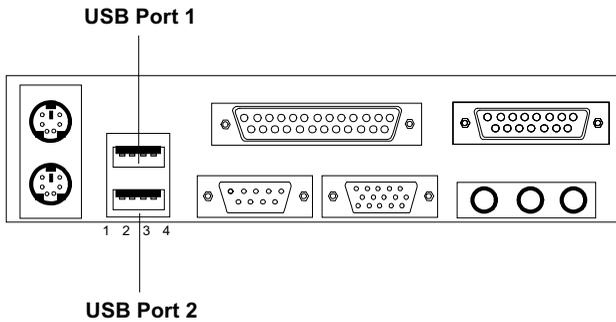
PIN	SIGNAL
1	VCC
2	-Data
3	+Data
4	GND

Wake-Up on LAN Connector: JWOL1

The JWOL1 connector is for use with LAN add-on cards that supports Wake Up on LAN function. To use this function, you need to set the "Wake-Up on LAN" to enable at the BIOS Power Management Setup.
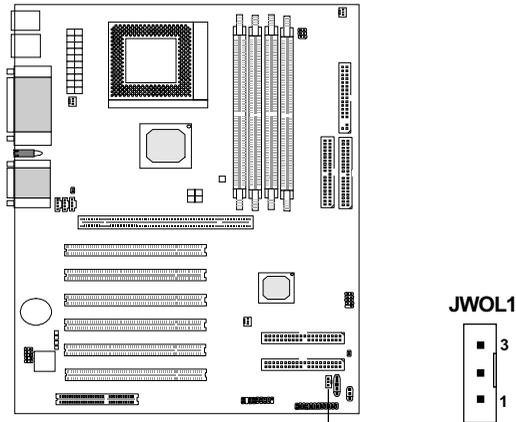
PIN	SIGNAL
1	5VSB
2	GND
3	MP_WAKEUP

Note: LAN wake-up signal is active "high".

Note: To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

Modem Wake Up Connector: JMDM1

The JMDM1 connector is for use with Modem add-on card that supports the Modem Wake Up function.
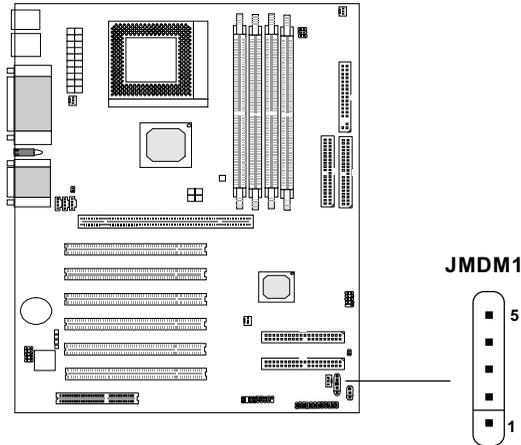
PIN	SIGNAL
1	NC
2	GND
3	MDM_WAKEUP
4	NC
5	5VSB

Note: Modem wake-up signal is active "low".

Note: To be able to use this function, you need a power supply that provide enough power for this feature. (Power supply with 750mA 5V Stand-by)

Modem-In: MDM_IN

The connector is for Modem with internal voice connector.

Mono_Out
GND
Phone_In

MDM_IN
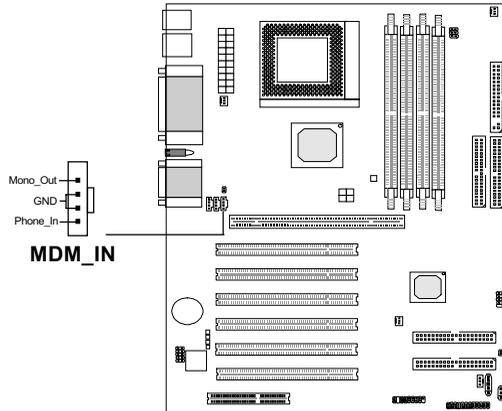
Mono_Out is connected to the Modem Speaker Out connector.
Phone_In is connected to the Modem Microphone In connector.

AUX Line In Connector: AUX_IN

This connector is used for DVD Add on Card with Line In connector.
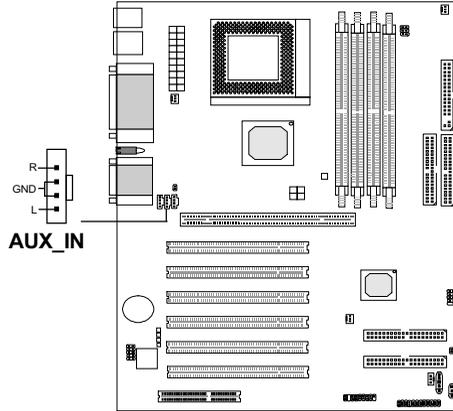
CD-In Connector: CD_IN

This connector is for CD-ROM audio connector.
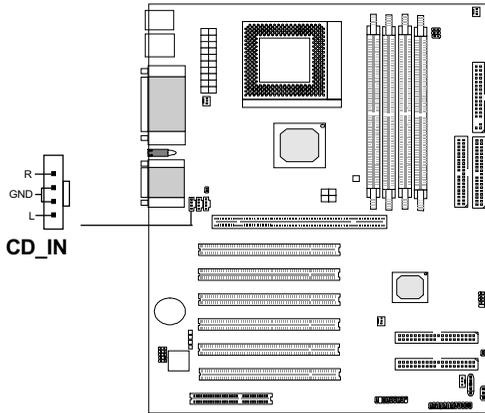
TOP TECH. III: J2

This is used to check the AGP chipset temperature on AGP card. The J2 is a 2-pin connector which can be inserted with a 20cm length thermistor. It is located near the chipset heatsink that monitors the chipset temperature. The BIOS setup for "TOP TECH III" should be set to enabled.

20CM length Thermistor

J2
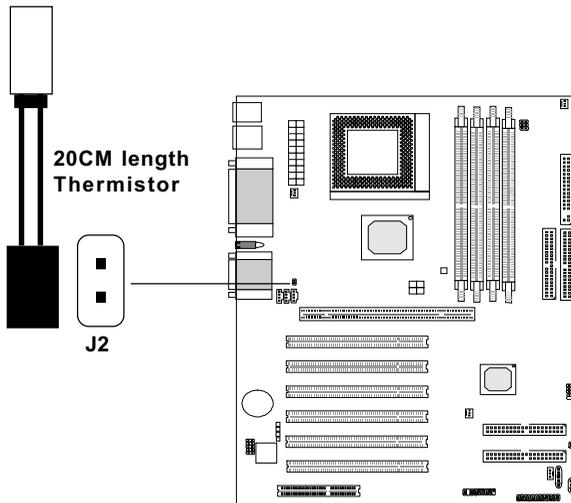
LED 2

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. LED 2 indicates the DIMM power. When LED 2 is powered on. Do not attempt to insert or remove the DIMM module.

LED 2
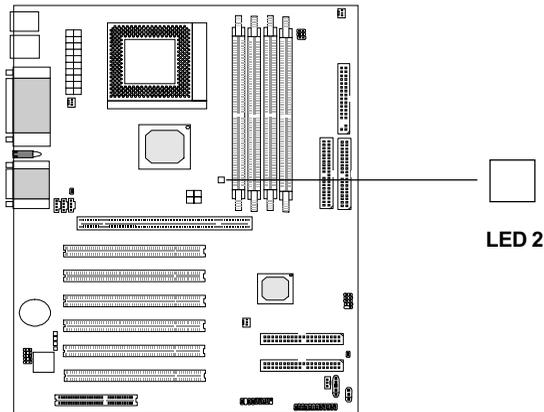
CNR (Communication Network Riser)

The Communication Network Riser specification is an open industry-standard specification that defines a hardware scalable Original Equipment Manufacturer (OEM) mainboard riser board and interface, which supports multi-channel audio, V.90 analog modem, phone-line based networking and 10/100 Ethernet based networking.

CNR
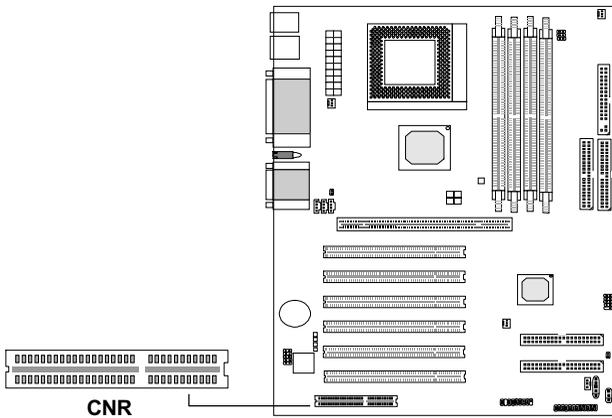
USB Front Connector: JUSB1

A. For 815EP Pro

The mainboard provides a **front Universal Serial Bus connector**.

JUSB1
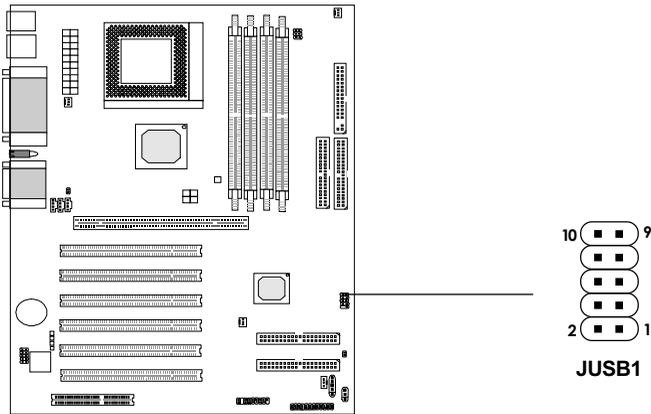
Pin	Description	Pin	Description
1	VCC	2	GND
3	USB2-	4	GND
5	USB2+	6	USB3+
7	GND	8	USB3-
9	GND	10	VCC

B. For 815EP Pro-R

The mainboard provides a **front Universal Serial Bus connector** with USB PC to PC Network Function. Two cables (**USB A to B Cable** & **USB Bracket Cable**) are provided for the function.
(Please refer to the Appendix for more information on USB PC to PC Network Function and driver installation..)

Follow the steps below to connect the cables:
1. Find the "B Type Connector" on the two cables.
2. Connect the "B Type Connector "on the "USB A to B Cable" to the same connector on the "USB Bracket Cable".
3. Connect the "A Type Connector" on the USB Bracket Cable to another computer's USB connector (without USB PC to PC function).
4. Connect the "A Type connector" on the USB Bracket Cable to the front pin header (JUSB1) on the mainboard. Pay attention to the orientation. The header has a special design for the wrong orientation.
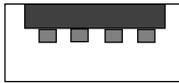
**USB Connector
A Type**
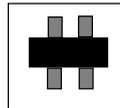
**USB Connector
B Type**
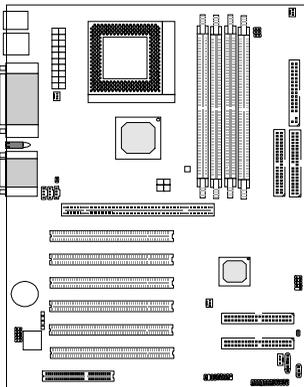
Pin	Description	Pin	Description
1	VCC		
3	USB2-	4	GND
5	USB2+	6	USB3+
7	GND	8	USB3-
9	GND	10	VCC
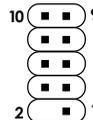
JUSB1

Diagnostic LED

The mainboard provides a Special Diagnostic LED for users to be aware of their mainboard conditions. The LED helps user determine the problem of the mainboard.
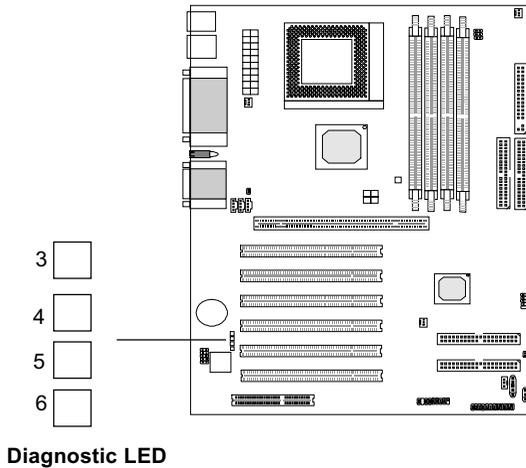
Diagnostic LED

Diagnostic LED Function

Diagnostic LED 6 5 4 3	Description	Possible Problem/ Solution
0 0 0 0	System Power ON. This will start BIOS Initialization	System D-LED will hang here The Processor might be damage or not installed properly Damage/Discharge Lithium Battery
0 0 0 1	Early Chipset Initialization	***
0 0 1 0	Memory Detection Test Testing Onboard memory size	System D-LED will hang here The Memory module might be damage or not installed properly.
0 0 1 1	Decompressing BIOS image to RAM for fast booting.	***
0 1 0 0	Initializing Keyboard Controller	***
0 1 0 1	Testing VGA BIOS This will start writing VGA sign-on messages to the screen.	System D-LED will produce Beep sound The VGA card might be damage or not inserted properly.
0 1 1 0	Processor Initialization This will show information regarding the processor (like brand name, system bus, etc...)	***
0 1 1 1	Testing RTC (Real Time Clock)	Low Lithium Battery
1 0 0 0	Initializing Video Interface This will start detecting CPU clock, checking type of video onboard. Then, detect and initialize the video adapter	***
1 0 0 1	BIOS Sign On This will start showing information about Logo, processor brand name, etc.....	***
1 0 1 0	Testing Base and Extended Memory Testing base memory from 240K to 640K and extended memory above 1MB using various patterns.	***
1 0 1 1	Assign Resource to all ISA	***
1 1 0 0	Initializing Hard Drive Controller This will initialize IDE drive and controller	Check IDE cable for proper installation
1 1 0 1	Initializing Floppy Drive Controller This will initialize Floppy Drive and controller	System D-LED will hang here The Floppy Drive Cable might not be installed properly
1 1 1 0	Boot Attempt This will set low stack and boot via INT19h.	***
1 1 1 1	Operating System Booting.	***

1 = GREEN 0 = RED   ***** Check local Vendor for possible internal mainboard problem.**

Front Panel Connector: J7

The mainboard provides a **Front Panel connector**.
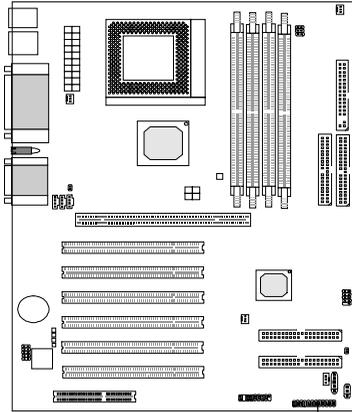
Pin Definition:

11-13 pin (optional)
Short 11-13 pin to disable Onboard Codec.

13-15 pin (optional)
Short 13-15 pin to enable Onboard Codec.

Speaker Output
Short 6-8 pin to activate AC97_SPKR
Short 8-10 pin to activate onboard Buzzer.
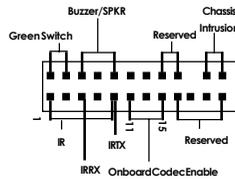
Chapter 3

AWARD® BIOS SETUP

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

Entering Setup

Power on the computer and press <Del> immediately to allow you to enter Setup. The other way to enter Setup is to power on the computer. When the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

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

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

PRESS <F1> TO CONTINUE, <CTRL-ALT-ESC> OR <DEL> TO ENTER SETUP

Getting Help

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

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

The Main Menu

Once you enter Award® BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility - Copyright(C) 1984-2000

```
STANDARD CMOS Feature      Frequency/Voltage Control

Advanced BIOS Feature      Load Fail-Safe Defaults

Advanced Chipset Feature   Load Optimized Defaults

Integrated Peripherals     Set Supervisor Password

Power Management Setup      Set User Password

PnP/PCI Configurations      Save & Exit Setup

PC Health Status           Exit Without Saving

Esc : Quit                 ↑↓→←   : Select Item
F10 : Save & Exit Setup    (Shift)F2 : Change Color

          Time, Date, Hard Disk Type...
```

Standard CMOS Setup
    Use this Menu for basic system configurations.

Advanced BIOS Features
    Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP/PCI Configuration

This entry appears if your system supports PnP/PCI.

PC Health Status

This entry shows your PC health status.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations.

Supervisor/User Password

Use this menu to set User and Supervisor Passwords.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The 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.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Standard CMOS Setup

```
 Date(mm:dd:yy):        Fri, Feb 28,1999
 Time(hh:mm:ss):        00:00:00                     Item Help


 IDE Primary Master     Press Enter 2557MB      Menu Level  >
 IDE Primary Slave      Press Enter None
 IDE Secondary Master   Press Enter None
 IDE Secondary Slave    Press Enter None


 Drive A                1.44M, 3.5in.
 Drive B                None


 Video                  EGA/VGA
 Halt On                All Errors


 Based Memory           640K
 Extended Memory        64512K
 Total Memory           65536K


↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
   F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults
```

Date

The date format is <day><month> <date> <year>.

Day	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
month	The month from Jan. through Dec.
date	The date from 1 to 31 can be keyed by numeric function keys.
year	The year, depends on the year of the BIOS

Time

The time format is <hour> <minute> <second>.

PrimaryMaster/PrimarySlave
SecondaryMaster/Secondary Slave

Press PgUp/<+> or PgDn/<-> to select Manual, None, Auto type. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Manual to define your own drive type manually.

If you select Manual, related information is asked to be entered to the following items. Enter the information directly from the keyboard. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is SCSI, the selection shall be
"None".
If the controller of HDD interface is CD-ROM, the selection shall be
"None".

Access Mode	The settings are Auto, Normal, Large,LBA.
Cylinder	number of cylinders
Head	number of heads
Precomp	write precom
Landing Zone	landing zone
Sector	number of sectors

Advanced BIOS Features

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced BIOS Features

```
┌─────────────────────────────────────────────┬──────────────────────┐
│ Anti-Virus Protection        Disabled        │                      │
│ CPU Internal Cache           Enabled         │      Item Help       │
│ External Cache               Enabled         │                      │
│ CPU L2 Cache ECC Checking    Enabled         ├──────────────────────┤
│ Processor Number Feature     Enabled         │                      │
│ Quick Power On Self Test     Enabled         │ Menu Level   >       │
│ First Boot device            Floppy          │                      │
│ Second Boot device           HDD-0           │                      │
│ Third Boot device            LS120           │                      │
│ Fourth Boot device           Disabled        │                      │
│ Swap Floppy Drive            Disabled        │                      │
│ Boot Up Floppy Seek          Enabled         │                      │
│ Boot Up Numlock Status       On              │                      │
│ Gate A20 Option              Fast            │                      │
│ Typematic Rate Setting       Disabled        │                      │
│ Typematic Rate (Chars/Sec)   6               │                      │
│ Typematic Delay (Msec)       250             │                      │
│ Security Option              Setup           │                      │
│ OS Select for DRAM > 64MB    Non-OS2         │                      │
│ HDD S.M.A.R.T. Capability    Disabled        │                      │
│ Report No FDD for Win 95     No              │                      │
│ Full Screen LOGO Show        Enabled         │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help │
│   F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults     │
└─────────────────────────────────────────────────────────────────────┘
```

Anti-Virus Protection

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Disable(default)	No warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Enable	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

CPU Internal Cache

The default value is Enabled.

Enabled (default)   Enable cache
Disabled   Disable cache

Note: The internal cache is built in the processor.

External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

CPU L2 Cache ECC Checking

Choose Enabled or Disabled. This option enables the level 2 cache memory ECC(error check correction).

Processor Number Feature

This option is for Pentium® III processor. During Enabled, this will check the CPU Serial number. Disabled this option if you don't want the system to know the Serial number.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If this is set to Enabled, BIOS will shorten or skip some check items during POST.

Enabled   Enable quick POST
Disabled (default)   Normal POST

First/Second/Third/Fourth Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items. The settings are Floppy, LS120, HDD-0/HDD-1/HDD-2/HDD-3, SCSI, CDROM, LAN, ZIP100, and Disabled.

Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Boot Up NumLock Status

The default value is On.

On (default)   Keypad is numeric keys.
Off   Keypad is arrow keys.

Gate A20 Option

Normal   The A20 signal is controlled by keyboard controller or chipset hardware.
Fast(default)   The A20 signal is controlled by port 92 or chipset specific method.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected. The settings are: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down. The settings are: 6, 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 settings are: 250, 500, 750, 1000.

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System   The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup(default)   The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

OS Selection for DRAM > 64MB

Allows OS2® to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2®.

HDD S.M.A.R.T Capability

This item allows you to Enabled or Disabled the HDD S.M.A.R.T (Self-Monitoring Analysis and Reporting Technology) Capability. The default setting is Disabled.

Report No FDD For Win 95

Whether report no FDD for Win 95 or not. The settings are: Yes, No.

Full Screen LOGO Show

This allows you to enable or disable the Full Screen LOGO Show capability. The default setting is Enabled.

Advanced Chipset Features

The Advanced Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the "ADVANCED CHIPSET FEATURES" from the Main Menu and the following screen will appear.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Advanced Chipset Features

```
┌─────────────────────────────────────────────┬───────────────────────┐
│ SDRAM CAS Latency Time       Auto            │                       │
│ SDRAM Cycle Time Tras/Trc    7/9             │      Item Help        │
│ SDRAM RAS-to-CAS Delay       3               │                       │
│ SDRAM RAS Precharge Time     3               │                       │
│ System BIOS Cacheable        Disabled        ├───────────────────────┤
│ Video BIOS Cacheable         Disabled        │ Menu Level  >         │
│ Memory Hole at 15M-16M       Disabled        │                       │
│ CPU Latency Timer            Enabled         │                       │
│ Delayed Transaction          Enabled         │                       │
│ AGP Graphics Aperture Size   64MB            │                       │
│ System Memory Frequency      Auto            │                       │
│ On-Chip Video Window Size    64MB            │                       │
│                                              │                       │
│ *Onboard Display Cache Setting*              │                       │
│ CAS# Latency                 3               │                       │
│ Paging Mode Control          Open            │                       │
│ RAS-to-CAS Override          by CAS#LT       │                       │
│ RAS# Timing                  Fast            │                       │
│ RAS# Precharge Timing        Fast            │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
├─────────────────────────────────────────────┴───────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
│   F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults       │
└──────────────────────────────────────────────────────────────────────┘
```

Note: Change these settings only if you are familiar with the chipset.

SDRAM CAS latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.   The settings are: 2, 3 and Auto.

SDRAM Cycle Time Tras/Trc

Select the number of SCLKs for an access cycle. The settings are: 5/7 and 7/9.

SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The settings are: 2 and 3.

SDRAM RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. *Fast* gives faster performance; and *Slow* gives more stable performance. This field applies only when synchronous DRAM is installed in the system.   The settings are: 2 and 3.

System BIOS Cacheable

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

Video BIOS Cacheable

Select Enabled allows caching of the video BIOS , resulting in better system performance. However, if any program writes to this memory area, a system error may result. The settings are: Enabled and Disabled.

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. The settings are: Enabled and Disabled.

CPU Latency Timer

During Enabled, A deferrable CPU cycle will only be Deferred after it has been in a Snoop Stall for 31 clocks and another ADS# has arrived. During Disabled, A deferrable CPU cycle will be Deferred immediately after the GMCH receives another ADS#.

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1. The settings are: Enabled and Disabled.

On-Chip Video Window Size

This option allows the user to set the on-chip video window size for VGA driver use.

AGP Graphics Aperture Size

This option determines the effective size of the graphics aperture used in the particular PAC configuration. The AGP aperture is memory-mapped, while graphics data structure can reside in a graphics aperture. The aperture range should be programmed as not cacheable in the processor cache, accesses with the aperture range are forwaded to the main memory, then PAC will translate the original issued address via a translation table that is maintained on the main memory. The option allows the selection of an aperture size of 32MB, 64MB.

System Memory Frequency

Select the Onboard Display Cache frequency.   The settings are 100MHz, 133MHz or Auto.

Onboard Display Cache Setting (optional)

CAS# Latency

The number of clock cycles of CAS# Latency depends on the Onboard Display cache timing. The settings are: 2 and 3.

Paging Mode Control

Select the paging mode control. The settings are:Open and Close.

RAS-to-CAS Override

This item allows you to insert a timing delay between the CAS and RAS strobe signals, used when Onboard display cache is written to, read from, or refreshed. During by CAS# LT, this will depend on the Onboard Display Cache CAS# Latency setting. During Override (2), RAS-to-CAS time=2.

RAS# Timing

This option controls RAS# active to Precharge, and refresh to RAS# active delay (in local memory clocks).

Slow   RAS# to precharge (t_{RAS}) =7, refresh to RAS# act (t_{RC}) = 10
Fast   RAS# to precharge (t_{RAS}) =5, refresh to RAS# act (t_{RC}) = 8

RAS# Precharge Timing

This item controls RAS# precharge (in local memory clocks)
Slow   RAS# Precharge Time=3
Fast   RAS# Precharge Time=2

Integrated Peripherals

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Integrated Peripherals

```
OnChip Primary PCI IDE        Enabled
OnChip Secondary PCI IDE      Enabled              Item Help
IDE Primary Master PIO        Auto
IDE Primary Slave PIO         Auto
IDE Secondary Master PIO      Auto        Menu Level   >
IDE Secondary Slave PIO       Auto
IDE Primary Master UDMA       Auto
IDE Primary Slave UDMA        Auto
IDE Secondary Master UDMA     Auto
IDE Secondary Slave UDMA      Auto
USB Controller                Enabled
USB Keyboard Support          Disabled
Init Display First            PCI Slot
AC97 Audio                    Auto
AC97 Modem                    Auto
IDE HDD Block Mode            Enabled
Keyboard Power On             Disabled
POWER ON Function             Button Only
KB Power On Password          Enter
Hot Key Power On              Ctrl-F1
Onboard FDC Controller        Enabled
Onboard Serial Port 1         3F8/IRQ4
Onboard Serial Port 2         2F8/IRQ3
```

↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
     F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

```
UART Mode Select              Normal
RxD, TxD Active               Hi, Lo
IR Transmition Delay          Enabled
UR2 Duplex Mode               Half
USE IR Pins                   IR-Rx2Tx2
Onboard Parallel Port         378/IRQ7
Parallel Port Mode            SPP
EPP Mode Select               EPP 1.7
ECP Mode use UDMA             3
PWRON After PWR-Fail          Off
Game Port Address             201
Midi Port Address             290
Midi Port IRQ                 10
Power Status LED              Single
```

OnChip 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. The settings are: Enabled and Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four 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 settings are: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33, Ultra DMA/66 and Ultra DMA/100 select Auto to enable BIOS support. The settings are: Auto, Disabled.

USB Controller

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals. The settings are: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard. The settings are: Enabled, Disabled.

Init Display First

This item allows you to decide to activate whether PCI Slot or on-chip VGA first. The settings are: PCI Slot, Onboard.

AC97 Audio/Modem

This item allows you to decide to enable/disable the 815 chipset family to support AC97 Audio/Modem.

IDE HDD Block Mode

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

Keyboard Power on Function

This function allows you to Enabled or Disabled the Keyboard Power On. The default setting is Disabled.

Power On Function

This function allows you to select the item to power on the system. The settings are : Button Only, Mouse Left, Mouse Right, Password, Hotkey, keyboard 98.

Onboard FDC Controller

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

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports. The settings are: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART Mode Select

This item allows you to determine which InfraRed(IR) function of the onboard I/O chip, this functions uses.

Onboard Parallel Port

Disabled (3BCH/IRQ7)/ (278H/IRQ5)/ (378H/IRQ7)	There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

Disable

3BCH/IRQ7	Line Printer port 0
278H/IRQ5	Line Printer port 2
378H/IRQ7	Line Printer port 1

Onboard Parallel Mode

SPP : Standard Parallel Port
EPP : Enhanced Parallel Port
ECP : Extended Capability Port

SPP/EPP/ECP/ ECP+EPP	To operate the onboard parallel port as Standard Parallel Port only, choose "SPP." To operate the onboard parallel port in the EPP modes simultaneously, choose "EPP." By choosing "ECP", the onboard parallel port will operate in ECP mode only. Choosing "ECP + EPP" will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel, so choose the onboard parallel port with the ECP feature. After selecting it, the following message will appear: "ECP Mode Use DMA" At this time, the user can choose between DMA

channels 3 or 1. The onboard parallel port is EPP Spec. compliant, so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: "EPP Mode Select." At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

PWRON After PWR-FAIL

This option will determine how the system will power on after a power failure.

Game Port Address/Midi Port Address

This will determine which Address the Game Port/Midi Port will use.

Power Status LED

This item determines which state the Power LED will use. The settings are Blinking, Dual, and Single. During blinking, the power LED will blink when the system enters the suspend mode. When the mode is in Dual, the power LED will change its color. Choose the single and the power LED will always remain lit.

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Power Management Setup

```
┌─────────────────────────────────────────────┬──────────────────────┐
│ ACPI Function              Enabled           │                      │
│ ACPI Suspend Type          S1(POS)           │      Item Help       │
│ Power Management           User Define       │                      │
│ Video Off Method           DPMS              ├──────────────────────┤
│ Video Off In Suspend       Yes               │                      │
│ Suspend Type               Stop Grant        │ Menu Level  >        │
│ Modem Use IRQ              3                  │                      │
│ Suspend Mode               Disabled          │                      │
│ HDD Power Down             Disabled          │                      │
│ Soft-Off by PWR-BTTN       Instant-Off       │                      │
│ Wake-Up by PCI Card        Disabled          │                      │
│ Power On by Ring           Enabled           │                      │
│ Wake-Up on LAN             Enabled           │                      │
│ USB KB Wake-Up From S3     Disabled          │                      │
│ CPU Thermal-Throtting      50.0%             │                      │
│ Resume By Alarm            Disabled          │                      │
│ Date(of Month) Alarm       0                 │                      │
│ Date(hh:mm:ss)             0 0 0             │                      │
│                                              │                      │
│ **Reload Global Timer Events**               │                      │
│ Primary IDE 0              Disabled          │                      │
│ Primary IDE 1              Disabled          │                      │
│ Secondary IDE 0            Disabled          │                      │
│ Secondary IDE 1            Disabled          │                      │
│ FDD, COM, LPT Port         Disabled          │                      │
│ PCI PIRQ[A-D]#             Disabled          │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
│    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults    │
└─────────────────────────────────────────────────────────────────────┘
```

ACPI Function

This item allows you to Enabled/Disabled the Advanced Configuration and Power Management (ACPI). The settings are Enabled and Disabled.

ACPI Suspend Type

This item will set which ACPI suspend type will be used.

S1 (POS)

The S1 sleeping state is low wake-up latency sleeping state. In this state, no system context is lost(CPU or chip set) and hardware maintains all system context.

S3 (STR)

The S3 state is a low wake-up latency sleeping sate where all system context is lost expect system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context.

Power Management

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

　　　　　1.　Suspend Mode
　　　　　2.　HDD Power Down

There are three selections for Power Management, two of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management — Suspend Mode = 1 min., and 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.

Video Off Method

This determines the manner in which the monitor is blanked.

V/HSYNC+Blank	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 (default)	Initial display power management signaling.

Video Off In Suspend

This determines the manner in which the monitor is blanked.
The settings are: Yes and No.

Suspend Type

Select the Suspend Type. The settings are: PWRON Suspend, Stop Grant.

Modem Use IRQ

This determines the IRQ in which the MODEM can use.
The settings are: 3, 4, 5, 7, 9, 10, 11, NA.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off. The settings are: 1/2/4/8/12/20/30/40 Min, 1 Hour, and Disabled.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
The settings are: 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15Min and Disabled.

Soft-Off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state. The settings are: Delay 4 Sec, Instant-Off.

Wake-Up by PCI Card

This will enable the system to wake up through PCI Card peripheral.
The settings are : Enabled and Disabled.

Power On by Ring
During Disabled, the system will ignore any incoming call from the modem. During Enabled, the system will boot up if there's an incoming call from the modem.

Wake-Up on LAN
To use this function, you need a LAN add-on card which support power on functions. It should also support the wake-up on LAN jumper (JWOL1).

Enabled	Wake up on LAN supported.
Disabled	Wake up on LAN not supported.

USB KB Wake-Up From S3
This option is used to Enabled/Disabled USB keyboard wake up with suspend to RAM.

CPU Thermal-Throttling
Select the CPU THRM-Throttling rate. The settings are: 12.5%, 25.0%, 37.5%, 50.0%, 62.5%, 75.0%, 87.5%.

Resume by Alarm
This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

Date(of month) Alarm	You can choose which month the system will boot up. Set to 0, to boot every day.
Time(hh:mm:ss) Alarm	You can choose what hour, minute and second the system will boot up.

Note: If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

Reload Global Timer Events

Reload Global Timer events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled* , even when the system is in a power down mode.

> **Primary IDE 0**
> **Primary IDE 1**
> **Secondary IDE 0**
> **Secondary IDE 1**
> **FDD, COM, LPT Port**
> **PCI PIRQ[A-D] #**

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed 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.

```
            CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
                         PnP/PCI Configuration Setup
 ┌───────────────────────────────────────────┬─────────────────────────────┐
 │ PNP OS Installed            No             │                             │
 │ Reset Configuration Data    Disabled       │         Item Help           │
 │                                            │                             │
 │ Resources Controlled By     Auto           ├─────────────────────────────┤
 │ IRQ Resources               Press Enter    │                             │
 │ DMA Resources               Press Enter    │ Menu Level  >               │
 │                                            │                             │
 │ PCI/VGA Palette Snoop       Disabled       │                             │
 │ INT Pin 1 Assignment        Auto           │                             │
 │ INT Pin 2 Assignment        Auto           │                             │
 │ INT Pin 3 Assignment        Auto           │                             │
 │ INT Pin 4 Assignment        Auto           │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 │                                            │                             │
 ├────────────────────────────────────────────┴────────────────────────────┤
 │ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help   │
 │    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults         │
 └──────────────────────────────────────────────────────────────────────────┘
```

PNP OS Installed
        This item allows you to determine whether the PnP OS is installed or not. The settings are Yes or No.

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 the system reconfiguration has caused such a serious conflict that the operating system can not boot.

The settings are: Enabled and Disabled .

Resource Controlled By

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95/98. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "➢"). The settings are: Auto (ESCD), Manual.

IRQ Resources

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

DMA Resources

This sub menu can let you control the DMA resource.

PCI/VGA Palette Snoop

Leave this field at *Disabled*. The settings are Enabled, Disabled.

PC Health Status

This section shows the Status of your CPU, Fan, Warning for overall system status.

```
        CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
                          PC Health Status
┌─────────────────────────────────────────┬──────────────────────────┐
│ CPU Warning Temperature      Disabled    │                          │
│ Current System Temp          39⁰C/102⁰F  │        Item Help         │
│ Current CPU Temperature      66⁰C/150⁰F  │                          │
│ Current Top Tech. III Temp.  32⁰C/89⁰F   │                          │
│ Current System Fan           0RPM        ├──────────────────────────┤
│ Current Power Fan            0RPM        │ Menu Level  >            │
│ Current CPU FAN    5532RPM               │                          │
│ Vcore              1.96V                 │                          │
│ VTT                1.48V                 │                          │
│ 3.3V               3.24V                 │                          │
│ +5V                4.89V                 │                          │
│ +12V               11.79V                │                          │
│ -12V               12.19V                │                          │
│ -5V                -4.53V                │                          │
│ VBAT(V)            3.10V                 │                          │
│ 5VSB(V)            5.37V                 │                          │
│ Chassis Intrusion Detect    Disabled     │                          │
│ Shutdown Temperature   Disabled          │                          │
│                                          │                          │
│                                          │                          │
│                                          │                          │
├──────────────────────────────────────────┴─────────────────────────┤
│↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
│   F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults     │
└─────────────────────────────────────────────────────────────────────┘
```

CPU Warning Temperature
During Enabled, this will warn the user when the CPU temperature reach a certain temperature.

Current System Temp/Current CPU Temperature/Current Top Tech. III Temp/Current System Fan (optional)/Power Fan (optional)/Cpu Fan/Vcore/VTT/3.3V/+5V/+12V/-12V/-5V/ VBAT(V)/5VSB(V)

This will show the CPU/FAN/System voltage chart and FAN Speed.

Chassis Intrusion Detect

Set this option to Enabled, Reset, or Disabled the chassis intrusion detector. During Enabled, any intrusion on the system chassis will be recorded. The next time you turn on the system, it will show a warning message. To be able to clear those warning, choose reset. After clearing the message it will go back to Enabled.

Shutdown Temperature

This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system.

Frequency/Voltage Control

This section is for setting CPU Frequency/Voltage Control.

CMOS Setup Utility - Copyright(C) 1984-2000 Award Software
Frequency/Voltage Control

```
┌─────────────────────────────────────────┬─────────────────────┐
│ Auto Detect DIMM/PCI Clk      Enabled    │                     │
│ Spread Spectrum               Enabled    │     Item Help       │
│ Clock By Slight Adjust        66         │                     │
│ CPU Internal Freq Will Be     198 Mhz    │                     │
│ CPU Clock Ratio               Auto       │ Menu Level  >       │
│ Vcore Adjust                  1.30V      │                     │
│ (May be dangerous if Vcore Adjust ovr 10%)│                    │
│ Vio Voltage Adust             3.4V       │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
│                                          │                     │
├─────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help│
│    F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults │
└────────────────────────────────────────────────────────────────┘
```

Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI Clock. The settings are: Enabled, Disabled.

Spread Spectrum

This item allows you to set the Spread Spectrum.

Clock By Slight Adjust

This item allows you to select the CPU clock from 133MHz to 166MHz or 100MHz to 133MHz depending on the CPU host clock.

CPU Clock Ratio

This item allows you to select the CPU clock ratio.

Load Fail-Safe/Optimized Defaults

Load Fail-Safe Defaults
When you press <Enter> on this item, you get a confirmation dialog box
with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-
performance system operations.

Load Optimized Defaults
When you press <Enter> on this item, you get a confirmation dialog box
with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal
performance system operations.

Set Supervisor/User Password

You can set either supervisor or user password, or both of them. The differences are:

Supervisor password :　Can enter and change the options of the setup menus.

User password :　Can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

　　　ENTER PASSWORD:

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

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

　　　PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

Appendix: USB PC to PC Network Function

Overview

USB PC to PC is the best solution for providing the easiest network connection service to you. By connecting multiple PCs through USB PC to PC port, you can build up a local area network without any network adapter. We give this Ethernet emulation environment a name — USB PC to PC. USB PC to PC supports TCP/IP, NetBEUI and IPX protocols. These features make your PCs can share their resources such as files or printers to each other. Further more, USB PC to PC also give you the ability of connecting to your existing Home or Office LAN for network resource or Internet sharing.

GeneLink™ LAN Driver Installation Procedure

Before you use the function, you need to install the GeneLink™ LAN Driver

to all the PCs connected via USB PC to PC.

Step 1. Install driver

1. Insert the driver CD and click "USB PC to PC" button to install the driver.
2. The welcome dialog box appears and click Next > button.
3. Choose the destination folder, and click Next > button.
4. Select components that you want to install, then click Next > button. (GeneLink™ LAN Driver is used to make all PCs are connected via USB PC to PC port, so it is just for resource sharing; GeneLink™ Software Router can make your PC connect to another existing Home/Office LAN, for network resource or Internet sharing.)
5. The Setup Program will install all necessary components automatically.
6. Setup complete. Then select 'Yes, I want to restart my computer now' and click "fInish" button to reboot your computer for updating your driver configuration.

After you complete the installation procedures, you'll find Setup Program has installed GeneLink™ network driver in your computer. It binds TCP/IP, NetBEUI and IPX protocols to GeneLink™ device

Step 2 – Connect your PCs via the USB PC to PC port

Step 3 - Network Login

When you restart your computer, you will be prompted for a user name and password to login your network. Please enter an unique name for your PCs.

Step 4 – Sharing your resource and Connecting to Internet

You need to manually share your resources (files, folders, drives and printers) to make them accessible for other computers; For Internet accessing, you must define which computer(That has already been connected to Internet) should install GeneLink™ Software Router; And all clients accessing Internet resources through GeneLink™ USB port should have installed GeneLink™ LAN driver.

Notice:
1. *You should use the same network protocol (TCP/IP, NetBEUI or IPX) for connecting GeneLink™ LAN to existing Home/Office LAN*
2. *If you've already configured your [IPX/SPX] and [Client for Netware Networks] before install GeneLink™ driver, we strongly recommend that you should also install **Software Router** as installing GeneLink™ driver into your system.*

Use the USB PC to PC Network Function

How to share your files, folders, drives and printers

a.   Go to the file, folder, drive or printer that you want to share.
b.   Right click your mouse pointer on the resource you want to share,
     you'll see a POP-UP Menu.

c.   Select " Sharing", and you'll see another Pop-Up Menu.

d. In "Sharing" tag, select "Share As".
e. Enter a name to help others recognize your sharing file or device (optional).
f. Select "Access Type". If you select " Depend on Password", your need to assign an access password for this device.
g. Click "OK" button.

How to check if you have already shared your resource?

Go to the resource and check if Windows had added a hand   on its icon or not. If yes, it means you've successfully shared your resource and you can access it through USB PC to PC; if not, you need to repeat "***Sharing your files, folders, drives and printers"*** to complete your sharing processes and make your resources available on USB PC to PC.

-   **Connecting to your existing Home or Office LAN**

To connect your USB PC to PC to another existing Home of Office LAN via USB PC to PC USB port, you need to install GeneLink™ Software Router in addition to GeneLink™ LAN driver. GeneLink™ Software Router is responsible for handling all network packets between USB PC to PC and your Home/Office LAN. So only the computer that is physically connected to both LANs needs to install GeneLink™ Software Router (i.e., this computer should install both GeneLink™ LAN and one network adapter for Home/Office LAN). For those computers on USB PC to PC, you only need to follow install procedure on manual to install GeneLink™ LAN driver for them. Following procedures will show you how to install drivers to the computer that will link both PC and your existing Home/Office LAN:

Notice: **if you want to connect your GeneLink™ LAN to your existing Home/Office LAN, you should use the same protocol for these two LANs.** For example, if your Home/Office LAN uses TCP/IP protocol, you should also use TCP/IP protocol for your GeneLink™ LAN. Otherwise, these two LANs cannot communicate to each other. The Setup Program installs TCP/IP, NetBEUI and IPX protocols for GeneLink™ LAN by default. If your Home/Office LAN uses other protocol, please install the same protocol for those computers within GeneLink™ LAN.

- **Connecting to Internet through USB PC to PC**

If you would like to access Internet resources through USB PC to PC, here are something you should notice:

    a.   You must define which computer should install GeneLink™ Software Router;

    b.   The computer which had installed GeneLink™ Software Router should have already been connected to internet;

    c.   All clients which would like to access Internet resources through USB cable should have installed GeneLink™ driver.

Now we need to do some network configurations on the Desktop/Notebook which connect to GeneLink™ Software Router to make your Internet access possible (maybe you need to consult you Network Administrator for doing that):

    a.   If your existing HOME/OFFICE network is NOT using DHCP to assign client's IP address, your need to:

    - Move your mouse pointer on Network Neighborhood icon and right click on it. You'll see a pop-up menu.
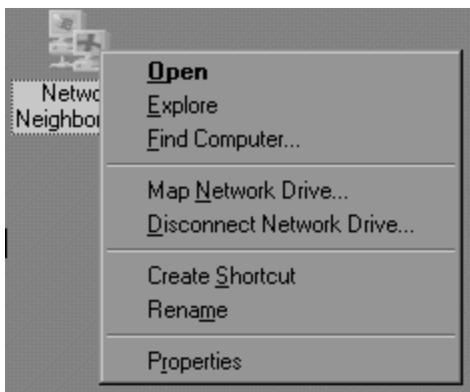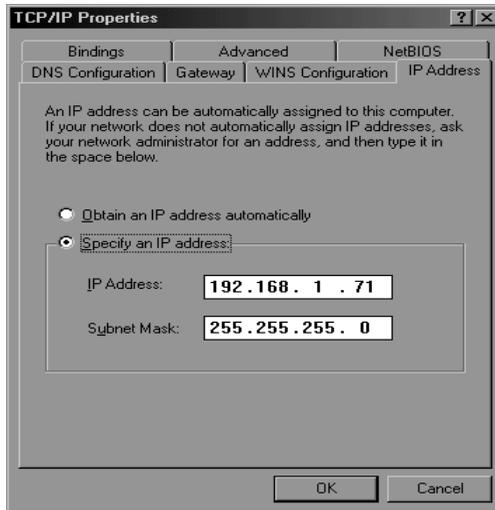
- Click on "Properties", you'll see another menu.

- Choose TCP/IP in Configuration tag, and then press "Properties" button. You'll see "TCP/IP Properties" menu.

-Now you need to navigate between "IP Address", "Gateway", and "DNS Configuration" tags to specify "IP Address", "Subnet Mask", "Gateway" and "DNS Server". If you don't know their value, pleases consult your Network Administrator.

-Press "OK" button to go backward to "Network" pop-up menu. Choose "Identification" tag. Specify a unique name for your computer if it doesn't have and fill the name of your workgroup. If you are not sure what's the name of your computer or Workgroup, please consult your Network Administrator.
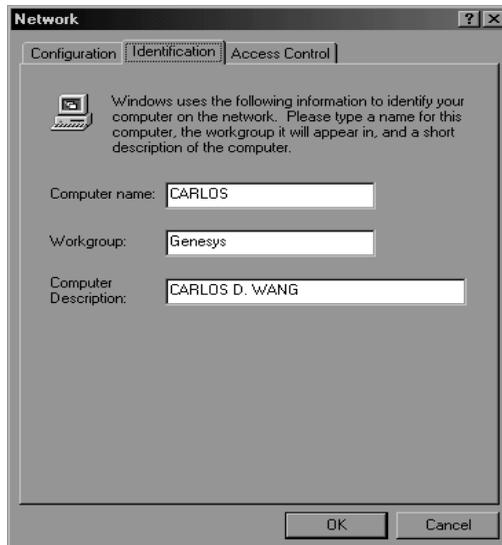
- Press "OK" to complete your network configuration. Restart your computer and you'll be ready to connect to Internet.

b. If your existing HOME/OFFICE network IS using DHCP to assign client's IP address, your Network Sever will configure your network configuration automatically. So you can skip those procedures described in previous session.

SPECIAL NOTICE for those users who have already installed Network Adapter in their system:

If you've already configured your [IPX/SPX] and [Client for Netware Networks] before install GeneLink™ driver, we strongly recommend that you should also install *Software Router* when you installing GeneLink™ driver into your system. If you decide not to install *Software Router*, then the OS will not allow two IPX/SPX configurations co-exist in the same system. This will cause GeneLink™ Driver Install Program overwrite your original IPX/SPX configuration and make your original network configuration malfunction.