TM-815EP
PCI/ AGP/CNR Mainboard

Version: 1.0

Warning: Never run the processor without the heatsink proper and firm installation. Permanent Damage Will result!

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Printed in Taiwan

Overview

The **TM-815EP** Intel's i815EP chipset removes i752 graphics in the current GMCH chip of 815E; the rest of the function are the same as of 815E. Both support PC 100/133 SDRAM, ultra ATA100 HDD and 4x USB ports. The cost-effective multiple network connectivity CNR (Communication and Networking Riser) expansion slot upgrades the computer system to a six-channel sound output. With an optionally purchased CNR interface Modem or Network card such as Home PNA or 10/100 Ethernet connection, it enables network functions and provides players with a great variety of choices.

In addition to complying with the new generation FCPGA-C CPU fan design and supporting Intel 100/133 MHz FSB (front side bus) Pentium III FCPGA processor to speed of 1GHz or higher, it also supports 66 MHz FSB Celeron FCPGA/PPGA processor. TM-815EP has three built-in 168-pin DIMM memory slots; the main memory can be expanded to a maximum of 1.5GB.

The ICH2 also has an enhanced AC'97 interface supporting full surround-sound for Dolby Digital audio found on DVD and simultaneously supports a soft modem connection. With two USB controllers, the ICH2 offers 24 Mbps of bandwidth across for ports, supporting Intel's push for a true "ease-of-use PC".

It also deliver comprehensive platform software for networking storage, security, audio and video to ensure platform stability and performance. ATA 100 IDE bus is available and added performance using Intel's storage driver.

CONTENTS

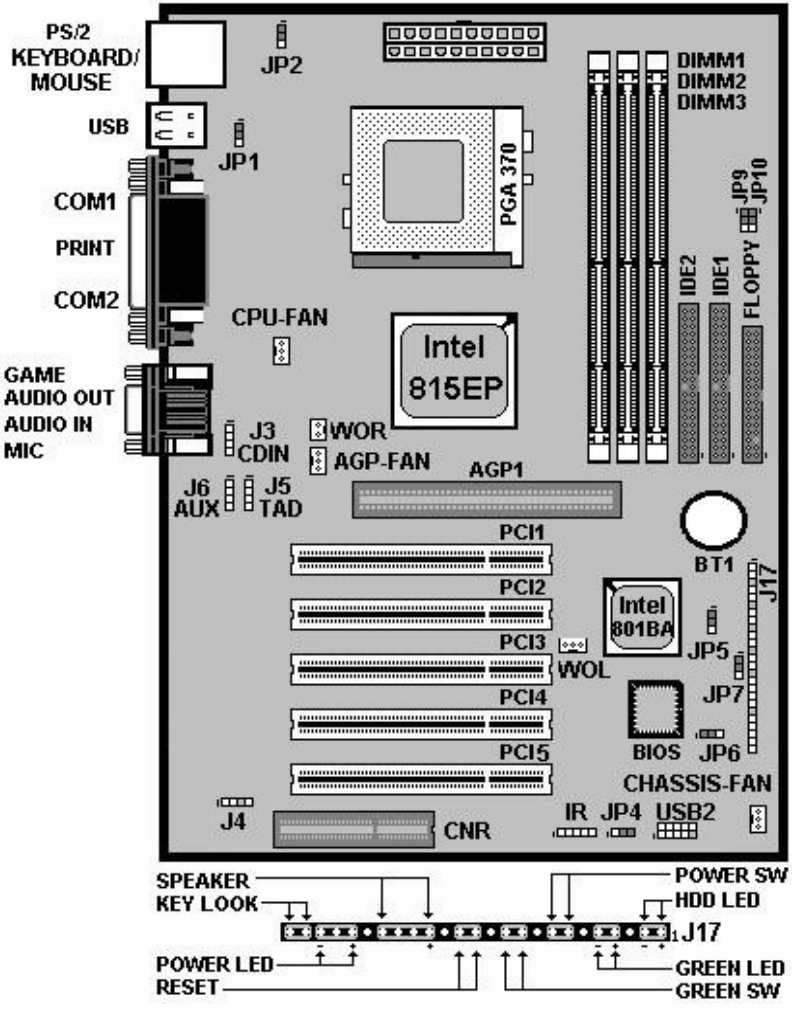
Introduction

A. Specifications

System Chipset	Intel i815EP chipset.
CPU	Intel PPGA-Celeron processors, support 300-766 MHz (Ex. Clk 66 MHz); CuMine FC-PGA 450-800MHz (Ex. Clk 100 MHz); CuMine FC-PGA 533-1 GHz (Ex.Clk 133 MHz) CPU.
Memory	Available with 32MB to 512MB unbuffered DIMMs expandable to 1.5GB (3 banks) with three 168-pin DIMM socket {support 3.3 V EDO (66MHz only) / SDRAM (66/100/133)}.
ATX Double Deck Ports	• 2 x USB ports • 2 x NS16C550A-compatible DB-9 serial ports • 1 x DB-25 Parallel Port support SPP/EPP/ECP mode. • 1 x mini-DIN-6 PS/2 Mouse Port • 1 x mini-DIN-6 PS/2 Keyboard Port • 1 x game/MIDI port • 3 x audio jacks: line-out, line-in and mic-in.
Connectors	• 1 x connector for 2 external USB ports • 1 x connector for IrDA or ASKIR interface • 2 x IDE connectors • 1 x FDD interface supports up to 2 x 2.88MB FDDs. • 1 x ATX P.S. connector • 1 x Wake-On-LAN connector • 1 x Wake-On-Ring connector • CPU, chassis and AGP fan connectors • 1 x opened chassis alarm connector • 3 x internal audio connectors(AUX-in, CD-in and TAD)
BIOS	Award Flash BIOS, Windows 95/98/2000/ME PnP compatible.
System Health Monitor	This mainboard is able to monitor following healthy status: • Monitors CPU/system temperature & overheat alarm • Monitors speed of CPU fan, chassis fan and AGP fan;

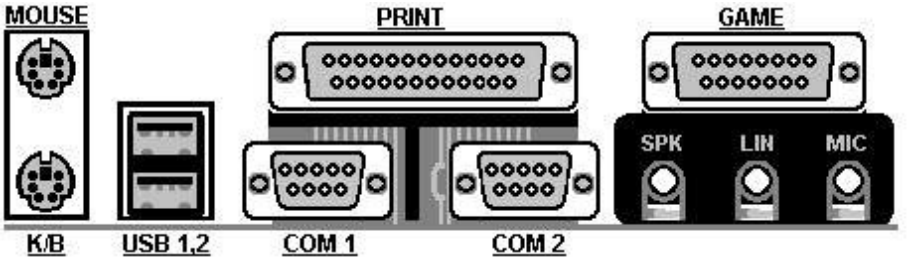
	controls the fan speed of the CPU and chassis fans; and failure alarm. • Automatic CPU and chassis fans on/off control • Opened chassis alarm • Monitors 5VSB/VBAT/1.5V/3/3V/5V/+-12V/CPU voltage and failure alarm • Read back capability that displays temperature, voltage and fan speed. • Supports Intel processor thermal diode output (real processor temperature) **If you want a warning message to pop-up or a warning alarm to sound when an abnormal condition occurs, you must install the Hardware Doctor utility available from the CD driver.**
Desktop Management Interface (DMI)	This mainboard comes with a DMI 2.0 built into the BIOS. The DMI utility in the BIOS automatically records various information about your system configuration and stores these information in the DMI pool, which is a part of the system board's PnP BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer system easier.
Expansion slots	X4 AGP x 1, 5x PCI and 1x CNR Slots.
Voltage	Automatically detects 1.3V to 2.05V.
Dimension	4-layer PCB, size (350mm x 220mm).
Others	Bus Master/ Ultra ATA100, ACPI, AGP Bus, KB Power On, Modem Ring On, LAN Wake Up, Wake On KB/Mouse, Wake On USB KB, AC'97 compliant Sound.

Setup Guide
Layout Diagram

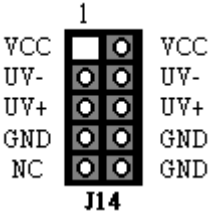


Connectors

I/O Connectors:



J14 . Universal Serial Bus Ports



J12 . IrDA Connector

1. VCC
2. CIRRX
3. IRRX
4. GND
5. IRTX

Jumper Setting

- **JP1 : Wake-On USB (1 & 2) Keyboard**

JP1	
1-2 On	Disable (default)
2-3 On	Enable

- **JP2: Wake-On Keyboard / Mouse**

JP2	
1-2 On	Disable (default)
2-3 On	Enable

- **JP4: Wake-On USB (3 & 4) Keyboard**

JP4	
1-2 On	Disable (default)
2-3 On	Enable

- **JP5 : Clear CMOS Data**

JP5	
1-2 On	Normal (default)
2-3 On	Clear CMOS Data

- **JP6 : Boot Block Lock / Unlock**

JP6	
1-2 On	Unlock Boot Block (default)
2-3 On	Lock Boot Block

- **JP7 : PC Speaker or Buzzer Select**

JP7	
1-2 On	**Buzzer (default)**
2-3 On	**PC Speaker**

- **JP9 / JP10: CPU Front Side Bus**

CPU/DIMM	JP9	JP10
Auto*	1-2 On	1-2 On
66/100 MHz	2-3 On	2-3 On
100/100 MHz	All Off	2-3 On
133/100 MHz	All Off	All Off
133/133 MHz	2-3 On	All Off

● Important Functions

CPU and Chassis Fan Automatic Off

The CPU and chassis fans will automatically turn off once the system Enters into Suspend Mode.

Dual Function Power Button

Depending on the setting in the "Soft-Off By PWR-BTTN" field of The Power Management Setup, this switch will allow the system to Enter the Soft-Off or Suspend mode.

Wake-On-Ring

This feature allows the system that is in the Suspend mode or Soft Power Off mode to wake-up upon the calls through an internal or external Modem.

※ **Notice:**
If you are using a Modem add-on card, the 5VSB power source of your power supply must support≧720mA.

Wake-On-LAN

The Wake-On-LAN function allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. Your LAN card must support the remote wakeup function.

※ **Notice:**
The 5VSB power source of your power supply must support≧720mA.

Wake-On-Keyboard / Wake-On-Mouse

This function allows you to use the keyboard or PS/2 mouse to power-on the system.

※ **Notice:**
The power button will not function once a keyboard password has been set in the "KB Power On Password" from the BIOS. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

Wake-On-USB Keyboard

This function allows you to use a USB keyboard to wake up a system that is in the S3 (STR – Suspend To RAM) state.

※ **Notice:**

•If you are using this function for 2 USB ports, the 5VSB power source of your power supply must support ≧1.5A.

•If you are using this function for 4 USB ports, the 5VSB power source of your power supply must support ≧2A.

ACPI STR

This board is designed to meet the ACPI specification. ACPI has energy saving Features that enables PCs to implement Power Management and PnP with operating systems support OS Direct Power Management. Currently, only Windows 98/2000 supports the ACPI function. When ACPI is enabled from Power Management, it allows you to use the Suspend to RAM function.

With the Suspend to RAM function enabled, you can power-off the system at Once by pressing the power button or selecting "Standby" when you shut down Windows 98/2000 without having to go through the sometimes tiresome process of closing files, applications and operating system. This is because the system is capable of storing all programs and data files during the entire operating session into RAM (Random Access Memory) when it powers-off. The operating session will resume exactly where you left off the next time you Power-on the system.

※ **Notice:**

The 5VSB power source of your power supply must support≧1A.

RTC Timer To Power-On The System:

The RTC installed on the system board allows your system to automatically power-on on the date and time.

AC Power Failure Recovery :

When power returns after an AC power failure, you may choose to either power-on the system manually or let the system power-on automatically and return to the state where you left off before power failure occurs.

How to use Suspend to RAM Function

1. Select "Power Management Setup" in the Main Menu.
2. Select "Enabled" in the "ACPI Function".
3. Select "S3(STR)" in the ACPI Suspend Type.
4. Press <ESC> to return to the Main Menu.
5. Select "Save & Exit Setup" and Press <Enter>. Type <Y> and press <Enter>.
6. Install Windows 98 by typing the following parameter. This is to ensure that the ACPI function is supported.

   [drive]:>setup /p j

   If you have previously installed Windows 98, you need to upgrade the System in order to support ACPI. Please contact Microsoft for upgrade information.

7. Boot Windows 98. In the Windows 98 desktop, click the Start button. Move the cursor to Settings, then click Control Panel.

   To check whether ACPI was properly installed, double-click the System Icon. In the System Properties dialog box, click the "Device Manager" Tab. In "View devices by type", click "System Devices".

8. Double-click the System icon. In the System Properties dialog box, click the performance tab.

9. Click File System. In the "Typical role of this computer" field, select "Mobile or docking system". Click Apply, then click OK. Restart the PC.

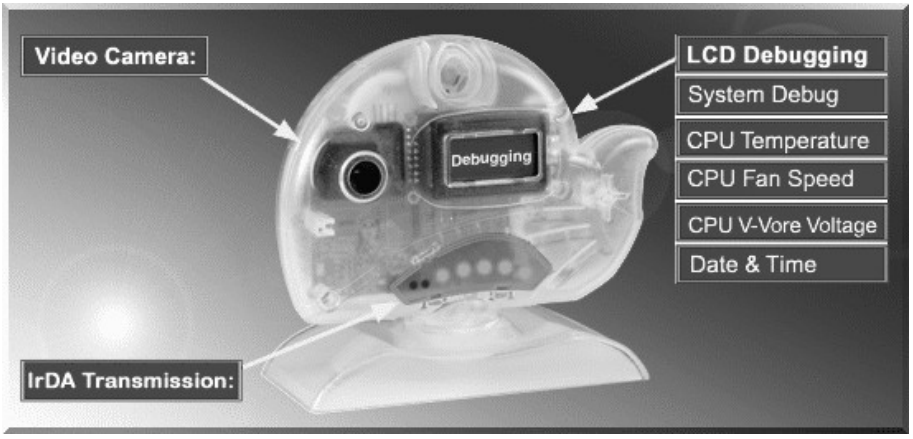
10. Repeat step 7 to open the Control Panel dialog box. Double-click the Power Management icon.

11. Click the Advanced tab. In the "When I press the power button on my computer" field, select "Standby".

12. After completing the steps above and you want to power-off the computer, you do not need to go through the process of closing files, applications and operating system. You can power-off the computer at once by pressing the power button or selecting "Standby" when you shut down Windows 98.

    To power-on the computer, just press the power button. The operating session where you left off when you power-off the computer will resume in not more than 8 seconds. However, the power button will not function if a keyboard password has been set in the "KB Power On Password" field of the integrated Peripherals submenu. You must type the password to power-on the computer.

    If you have changed the color or resolution (in the Display Properties Dialog box), do not apply the settings without restarting. You must re-start the computer.



It's so valuable that you don't have to pay thrice to buy three fashionable devices of PC Camera, Debugging and IrDA ware now because we have integrated them into our **EscoCAM** in the shape of a lovely whale to escort your system. The whale is the king of the sea and the symbol of all-mighty power. With PC camera, Debug, CPU heat monitor and IrDA device built into the **EscoCAM**, we offers you the unbeatable solution to upgrade the value of your PC system.

1. PC Camera:

As video and audio email is gaining popularity, PC cameras are making inroads into PC systems and it will increasingly become a standard PC peripheral. In view of this strong market demand, we has timely launched its state-of-the-art PC cameras. Besides, our PC Camera is allowed to adjust the Focus of Camera via Keyboard or mouse instead of wheel. It's a patent design in PC Camera. Hope you enjoy this new technology.

2. External Debug :

When initializing system, LCD will check the peripherals of CPU, Chipset, DRAM, BIOS, Keyboard, CMOS, VGA card, Devices, FDD, HDD and Cache…Once peripherals were not been properly installed or defective, the LCD display will show out the detective place. After system successfully booted up, Time & Date, CPU Temperature, CPU V-Core Voltage, CPU Fan Speed will take turn to show out on the LCD display.

3. Monitor CPU Temp. And FAN Working Status:

Audio, video and multi-tasking functions call for faster and faster CPUs to improve system efficiency. However, faster CPUs will generate more heat which must be dissipated in a timely manner. Therefore, a more efficient fans to dissipate heat is as important as watch-out of fan working situation. In this Internet era, people are using their computers for longer and longer time which can easily cause overheat and damage to the CPU. Prolonged use of the computer will increase CPU temperature. It is therefore necessary to have a device to constantly monitor the CPU temperature, CPU fan speed and V-Core voltage and timely remind user.

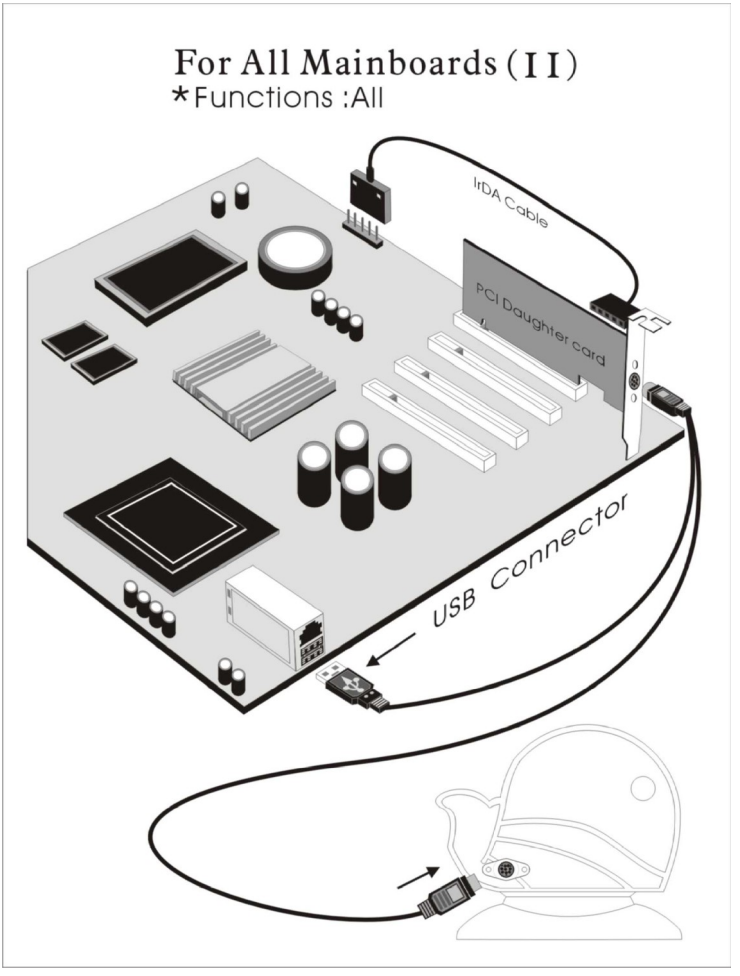
4. IrDA For Data Transmission :

As more and more computers, notebook, mobile phone and PDA are installed with the IrDA device for wireless transmission, we also developed its own IrDA device for this purpose.

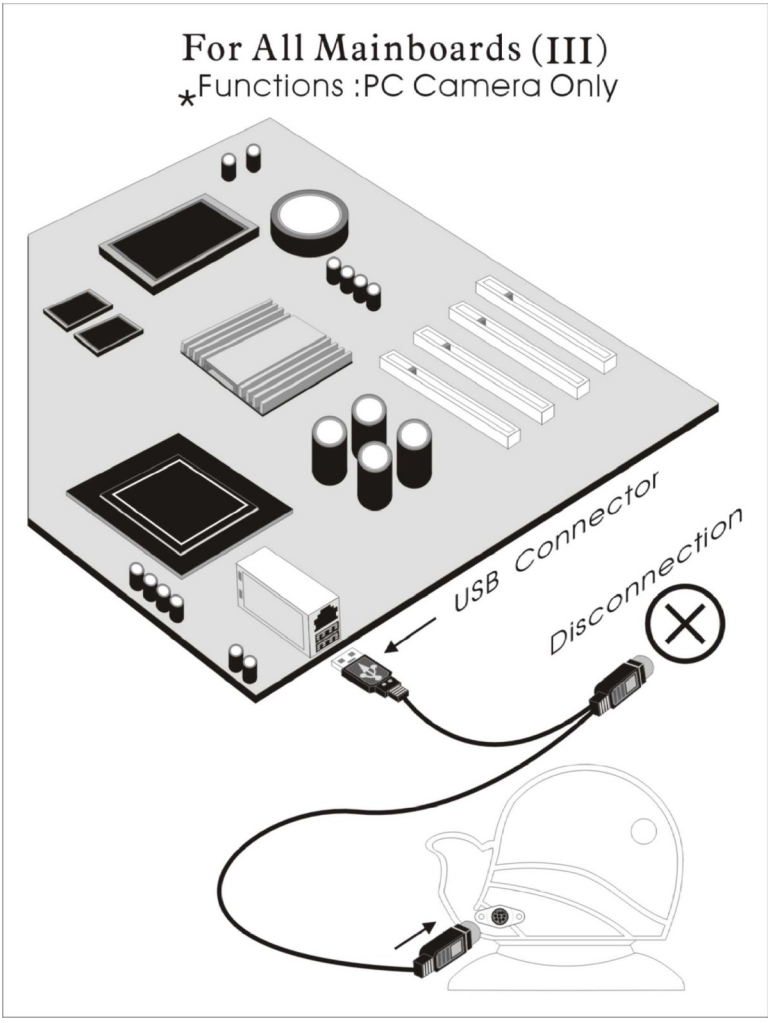
The Connection of EscoCAM

For Connecting All Mainboards:

A PCI daughter card is attached with EscoCAM to connect:



Or, if you just want use the function of PC Camera, the connection drawing as follows:



Driver & Software

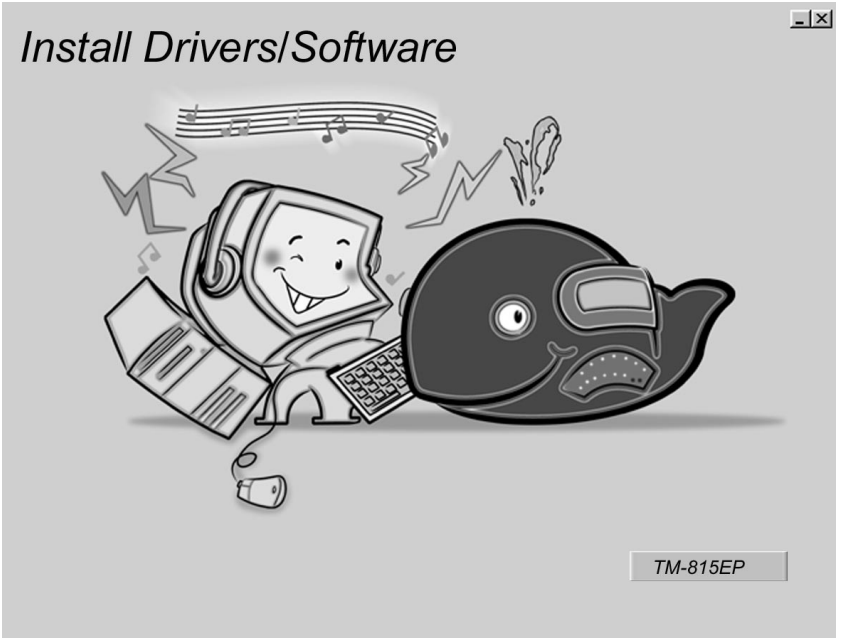
Installation Guide

1. This driver is for Windows 95/NT/2000 and Win. 98. Aside from the installation procedure differs from the Operating System used, the automatic installation is only available for Windows 98. For Windows 2000/ME/NT, you must manually install.

2. Improper driver installation may cause system unstable. Pls go to Totem's Web site at http://www.totem.com.tw for the latest version for drivers and Software applications, or you can also go to Chipset Vendors

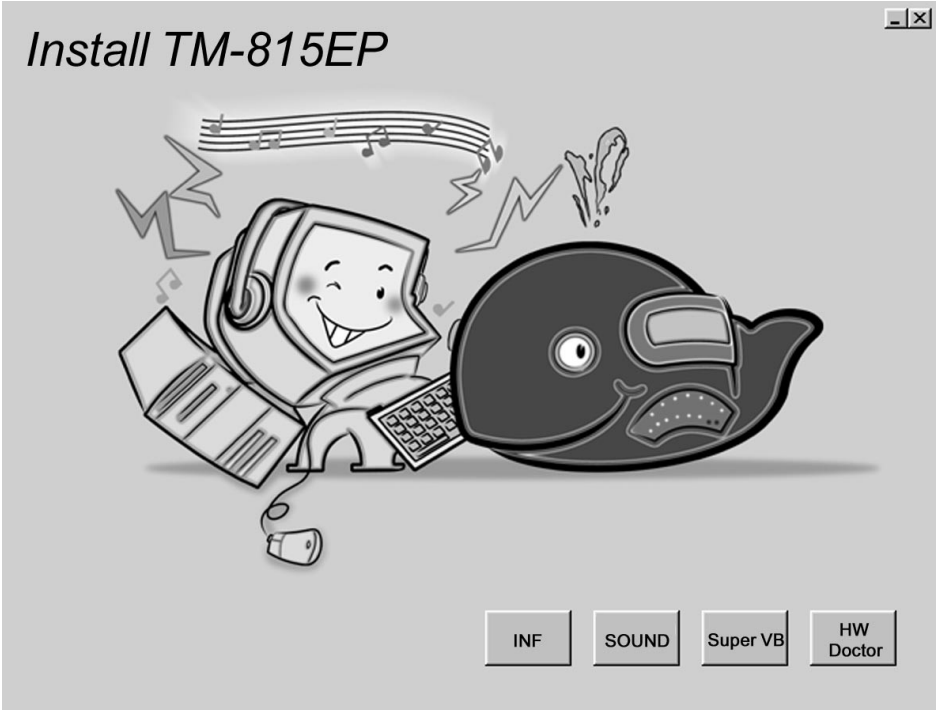
Quick Installation under Windows 98

When insert the CD-ROM disc in the system CD-ROM drive, the set up feature will automatically come up the screen with buttons for mainboard models name **as follows:**



Browse All The Drivers in CD

After selecting mainboard model name, all the available drivers will appears on the screen as follows:



How to install Windows 95/NT/ME/2000 ?

1. Insert the support CD-ROM disc in the CD-ROM drive.
   Just bypass the error message from PnP function.
2. Since **quick installation** is not supported by Windows 95/NT/ME/2000, you have to select correct drivers and **EXE** given file names as follows:

Bus Master IDE Driver

✔ \IDE\815EP\SETUP.EXE

USB Driver

✔ Win95 - \OTHERS\USB\EUSBSUPP\USBSUPP.EXE
✔ Win95(Chinese) - \OTHERS\USB\CUSBSUPP\CUSBSUPP.EXE

Audio Driver

✔ Windows 95 - \SOUND\815EP\WIN95\SETUP.EXE
✔ Windows 98 - \SOUND\815EP\WIN98\SETUP.EXE
✔ Windows ME - \SOUND\815EP\ME\SETUP.EXE
✔ Windows NT - \SOUND\815EP\WINNT\SETUP.EXE
✔ Windows 2000 - \SOUND\815EP\WIN2000\SETUP.EXE

BIOS Update

✔ \UTILITY\AWDFL779.EXE

Super VB Software

This software provides anti-virus protection PC.

✔ \SUPERVB\AUTO.EXE

Hardware Doctor

✔ Windows ✔ 9X - \UTILITY\HWDOCTOR\WIN9X\SETUP.EXE

All steps or procedure to install software drivers are subject to change without notice as the software are occassionally updated.

BIOS Update Note

Do not update the BIOS if no abnormalities occur. However, if BIOS update is needed, consult your dealer first. Prior to updating your BIOS, you are recommended to save the original BIOS values.

1. Download the AWARD BIOS Flash Utility file (**Awdflash.exe**)

2. Download the BIOS file used by your mainboard(**e.g., XXXXXXX.BIN**)

3. **Reboot** your system (but do not run **Himem.sys** and **Emm386.exe**) to execute the new BIOS program.

4. Execute these commands: **Awdflash XXXXXXX.BIN**

5. When this message displays: "**Do you want to save BIOS (Y/N)?**" Type "**N**"

6. When this message displays: "**Are you sure to program (Y/N)?**" Type "**Y**"

BIOS Setup

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

Entering Setup

To enter the BIOS Setup, press <Del> during POST (Power-On-Self-Test).

Control Keys

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

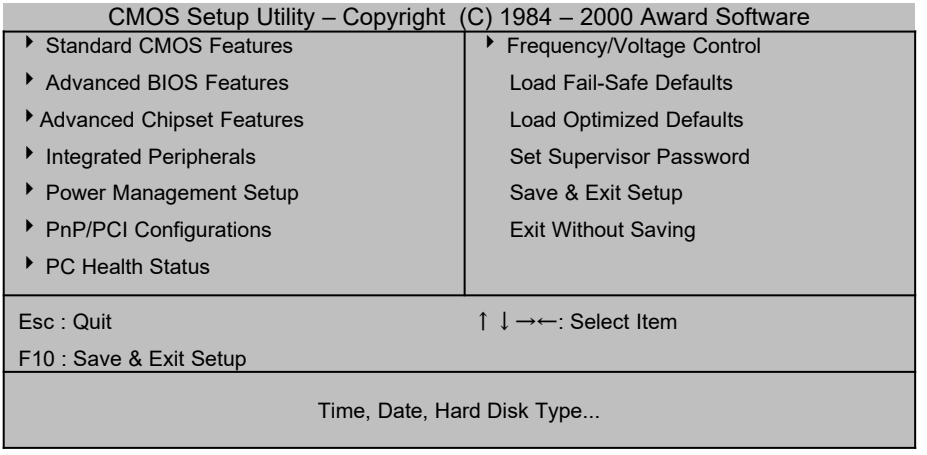
Getting Help

Main Menu
The online 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 highlighted item. To exit the Help Window press <Esc>.

The Main Menu

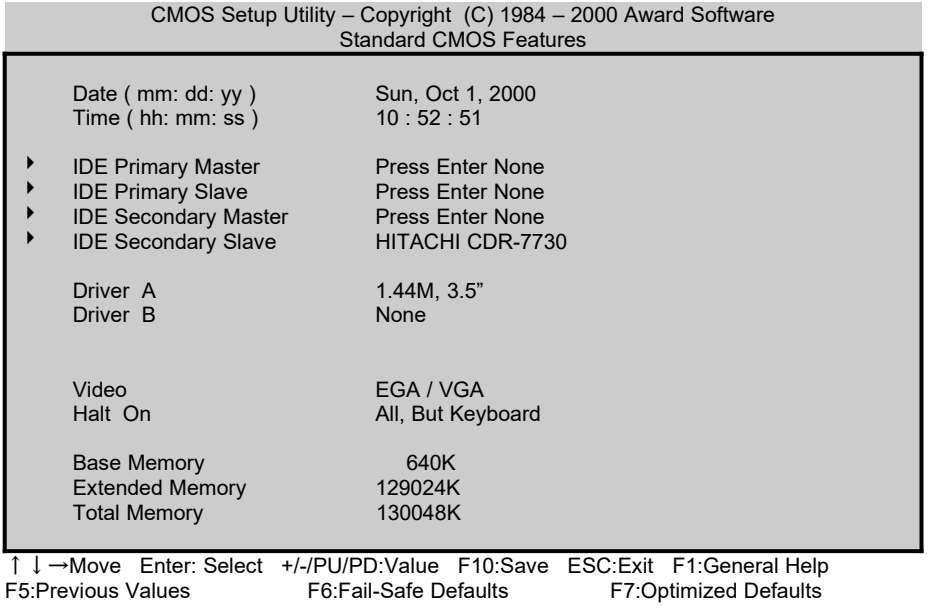
Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the Screen.. Use arrow keys to select the desired items, press <Enter> to select or enter a submenu.



Standard CMOS Setup

BIOS Setup

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



The settings on the screen are for reference only. Your version may not be identical to this one.

Date & Time	Use these items to set the system date and time
Pri Master **Pri Slave** **Sec Master** **Sec Slave**	If the hard disk Promary Master/Slave and Secondary Master/Slave are set to Auto, then the hard disk size and model will be auto-detcted. If the *Auto* setting fails to find a hard disk drive, set it to *User*, and then type in the hard disk .
Floppy Drive A **Floppy Drive B**	Use these items to set the size and capacity of the floppy diskette drive(s) installed in the system. Note: Floppy 3 Mode support is a mode used to support a special 3.5” drive used in

	Japan. This is a 3.5” disk that stores only 1.2MB, the default setting is **Disabled.**
Halt On	This field is used to determine when to halt the system by the BIOS if an error occurs.

BIOS Features Setup

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

Virus Warning	: Disabled	
CPU L1 Cache	: Enabled	

CPU L2 Cache	: Enabled
CPU L2 Cache ECC Checking	: Enabled
CPU L2 ECC Checking	: Enabled
Processor Serial Number	: Disabled
Quick Power On Self Test	: Enabled
First Boot Device	: Floppy
Second Boot Device	: HDD-0
Third Boot Device	: LS/ZIP
Boot Other Device	: Enabled
Swap Floppy Drive	: Disabled
Boot Up Floppy Seek	: Disabled
Boot Up NumLock Status	: Off
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

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

The settings on the screen are for reference only. Your version may not be identical to this one.

Virus Warning	During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive, BIOS will show a warning message on screen and alarm beep. Keep in ming that this feature protects only the boot sector, not the entire hard drive. To Enable or Disable the built-in virus protection.
CPU L1 Cache	Use this item to control the status of CPU's L1 (internal) Cache. When this item is Enabled, the CPU performance will be increased.
CPU L2 Cache	Use this item to control the status of CPU's L2 (external) Cache. When this item is Enabled, the CPU performance will be increased.
CPU L2 ECC Checking	This item control if the CPU's L2 Cache will support Error Checking and Correcting (ECC). When Enabled, the CPU performance will decrease 2%-4%. Enabled is recommended.
Quick Power On	When Enabled this item, system will shorten or skip of

Self Test	the items checked during POST and to speeds up the Power On Self Test. When you are sure that your system hardware is smooth and stable enough, we recommend to enable this item for speeding up POST.
1st /2nd /3rd/ and Other Boot Device	The BIOS trys to load the operating system from the devices in the sequence of 1st, 2nd, 3rd and other devices. The choice : HDD, FDD, CD-ROM, LS120, SCSI.
Swap Floppy Drive	This will swap your physical drive letters A & B when you are using two floppy disks. The default is Disabled.
Boot Up Floppy Seek	During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. Only 360K type is 40 tracks while 760K, 1.2MB and 1.44MB are all 80 tracks. The default is Disabled.
BootUp Num-Lock	This item control the NumLock key is active or inactive when system boots. On: The keypad Acts as a 10-key pad. Off: The keypad acts like the cursor keys.
Typematic Rate Setting	Use this item to determine to keystrokes repate rate. Default is Disabled. Enabled: Allows typematic rate and typematic Delay programming. Disabled: The typematic rate and delay will be Controlled by the keyboard controller.
Typematic Rate (Chars/Sec.)	The number of characters will be repeated by a keyboard press. The default is 6. 6: 10 characters per second. 24: 24 characters per second.
Typematic Delay (Msec)	Setting controls the time between the first and the second character displayed by typematic auto-repeat. The default is 250. 250: 250 msec. 750: 750 msec.

Security Option	This allows you to limit access to the System and Setup, or just to Setup. The default is Setup. **System:** The system will not boot and the access To the Setup will be denied if entered password is Incorrect. **Setup:** The system will boot; but the access to Setup will be denied if entered password is incorrect.
OS Select for DRAM > 64MB	Use this option only if system has greater than 64MB. Default is Non-OS2. **OS2:** Select this if you are running the OS/2 operating system with greater than 64MB.

Advanced Chipset Features

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

SDRAM CAS Latency Time	: 3
SDRAM Cycle Time Tras/Trc	: 6/8
SDRAM RAS-to-CAS Delay	: 3
SDRAM RAS Precharge Time	: 3
System BIOS Cacheable	: Disabled
Video RAM Cacheable	: Disabled
Delayed Transaction	: Enabled
System Memory Frequency	: 100 MHz

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

The settings on the screen are for reference only. Your version may not be identical to this one.

SDRAM CAS Latency Time	This setting defines the CAS timing parameter of the SDRAM in terms of clocks. Default is 3. 2: Provides faster memory performance. 3: Provides better memory compatibility.
SDRAM Cycle Time trans/Trc	Select the numbers of SCLKs for an access cycle. Default is 6/8.
SDRAM RAS-to-CAS Delay	This field allows you insert a timing delay between the RAS and the CAS strobe signals. Used when DRAM is written to, read from, or refreshed. "Fast" give faster performance; and "slow" give stable performance. This filed applies when Synchronous SDRAM is intsalled. Defualt value is 3.
SDRAM RAS precharge Time	If an insufficient number of cycle is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be complete and DRAM may fail to retain Data. "Fast" gives faster performance and "Slow" gives more stable performance. This filed applies when Synchronous SDRAM is intsalled. Defualt value is 3.
System BIOS Cacheable	This allows to copy BIOS code from slow ROM to fast RAM. Default is Disabled. **Enabled** : This option will improve system performance. However, if any program writes to this memory area, a system error may result.
Video BIOS Cacheable	This allows to copy the video ROM BIOS to fast RAM (C000h to C7FFFh). Default is Disabled.

	Enabled : Enabled the Video BIOS Cacheable to speed up the VGA performance.
AGP 4X Mode	This allows to copy BIOS code from slow ROM to fast RAM. Default is Enabled. **Enabled** : This option will improve system performance. However, if any program writes to this memory area, a system error may result.
Delayed Transaction	The chipset has an embedded 32-bit posted write buffer to delay tranactions cycles. Select "Enabled" to support compliance with PCI specification version 2.1. Default is **Enabled.**
System Memory Frequency	100 MHz of System Memory is defaulted.

Integrated Peripherals

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Integrated Peripherals

OnChip Primary PCI IDE	: Enabled
OnChip Secondary PCI IDE	: Enabled
IDE Primary Master PIO	: AUTO
IDE Primary Slave PIO	: AUTO
IDE Secondary Master PIO	: AUTO
IDE Secondary Slave PIO	: AUTO
IDE Primary Master UDMA	: Disable
IDE Primary Slave UDMA	: Disable
IDE Secondary Master UDMA	: Disable
IDE Secondary Slave UDMA	: Disable
USB Controller	: Enabled
USB Keyboard Support	: Disabled
Init Display First	: PCI Slot
AC 97 Audio	: Auto

AC 97 Modem	: Auto
IDE HDD Block Mode	: Enabled
KB/Mouse Power On	: Disabled
KB Power On Password	: Enter
KB Power On Hot Key	: Ctrl-F1
Onboard FDC Controller	: Enabled
Onboard Serial Port 1	: 3F8/IRQ4
Onboard Serial Port 2	: 2F8/IRQ3
UART2 Mode Select	: Normal
RxD, TxD Active	: Hi, Lo
IR Trnasmission Delay	: Enabled
Onboard Parallel Mode	: 378/IRQ7
Parallel Port Mode	: ECP+EPP
EPP Mode Select	: EPP1.7
ECP Mode Use DMA	: 3
PWR Lost Resume State	: Keep Off
Game Port Address	: 201
Midi Port Address	: Disabled
Mid Port IRQ	: 10

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

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The settings on the screen are for reference only. Your version may not be identical to this one.

On-Chip Primary PCI IDE	Channel 0 is to enable On Chip IDE Primary port.
On-Chip Secondary PCI IDE	Channel 1 is to enable On Chip IDE Secondary Port.
Primary/ Secondary Master/Slave PIO	This item allows you to assign which kind of PIO is used by IDE devices. Default is Auto. **Auto:** BIOS will automatically detect the Onboard PCI IDE Accessing mode. **Mode 0-4:** Manually set the IDE Programmed interrupt mode.
Primary/ Secondary Master/ Slave UDMA	This item allows you to set Ultra DMA for faster access to IDE HDD which support Ultra DMA function. You may need to install UDMA driver. Default is Auto. **Auto:** The system will select the optimal

	setting. **Disabled:** The HDD will run in normal mode.
USB Controller	Enabled this item when your system contains a Universal Serial Bus (USB) and you have a USB keyboard. Default is **Enabled.**
USB Keyboard Support	Enabled this item when your system contains a Universal Serial Bus (USB) and you have a USB keyboard. Default is **Disabled.**
Init Display First	If two graphic devices used (1xAGP, 1x PCI), this specifies which one will be the primary display. The default is PCI Slot. **PCI Slots :** PCI graphic will be Primary. **AGP :** AGP graphic will be Primary.
AC97 Audio/Modem	These items allow you to decide to enable or disable the support of AC97 Audio or Modem. Default is **Auto**
IDE HDD Block Mode	This item allows IDE controller to access blocks of sectors rather than a single sector at a time providing higher HDD transfer rates. Default is Enabled.
Onboard FDC Controller	This item controls the state of Onboard floppy controller. Default is Enabled. **Enabled:** Enable Onboard VIA686A Chip's FDD interface controller.
OnBoard Serial Port 1, 2	This items allow user to configure the 1st and 2nd serial ports. Default is Auto. Atuo: Enable Onboard Serial Port 1 and address is auto adjusted. COM1: Enable Onboard Serial Port 1 or 2 and address is 3F8H/IRQ4. COM2: Enable Onboard Serial Port 1 or 2 and address is 2F8H/IRQ3. COM3: Enable Onboard Serial Port 1 or 2 and address is 3E8H/IRQ4. COM4: Enable Onboard Serial Port 1 or2 and

	address si 2E8H/IRQ3.
UATR2 Mode Select	This field is available only if Onboard Serial Port 2 is Disabled. UART mode enables you to select the Infrared protocol – **Normal (default),** HPSIR or ASKIR. HPSIR is HP's IR protocol with a maximum baud rate up to 115.2Kbps. ASKIR is Sharp's IR protocol with a maximum baud rate up to 57.6Kbps.
RxD, TxD Active	Defines the voltage level in accordance to the IR module RxD(receive) and TxD(transmit) mode.
OnBoard Parallel Port	This item allows user to configure the LPT port. Default is 378H/IRQ7. **378H:** Enable Onboard LPT and address is 378H/IRQ7. **278H:** Enable Onboard LPT and address 278H/ IRQ5. **3BCH:** Enable Onboard LPT and address is 3BCH/IRQ7. **Disabled:** Disable Onboard I/O chip's LPT port.
Onboard Parallel Port Mode	Use this item to set the parallel port mode. You can select SPP (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or ECP + EPP. Default is Normal. **Normal:** Standard mode. IBM PC/AT Compatible bidirectional parallel port.
EPP Mode Select	The onboard parallel is EPP spec. compliant, so if you select on parallel port mode with EPP function, the "EPP Mode Select" will display on The screen. At this time, either EPP 1.7 spec. or EPP 1.9 spec. can be choosen.
ECP Mode Use DMA	The ECP mode has to use DMA channel, so choose on board Parallel port with ECP feature. After selecting, the "ECP Mode Use DMA" will appear and allow the user to select DAM1 or

	DMA3 for the ECP mode. Default is **3.**
PWR Lost Resume State	Default is Keep Off
Game Port Address	This determine which Address of Game Port will use. Default Value is **201.**
Midi Port Address	This determine w hich Address of Midi Port will use. Default Value is **Disabled.**
Midi Port IRQ	Default is 10.

Power Management

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Power Management Setup

ACPI Function	Enabled
ACPI Suspend Type	S1(POS)
Power Management	User Define
Video Off Method	DPMS
Video Off In Suspend	Yes
Suspend Mode	Disabled
HDD Power Down	Disabled
Soft-Off By PWR-BTTN	Instant-Off
Resume on PCI Event	Disabled
Resume on Ring	Disabled
USB KB Wake-Up From S3	Disabled
Resume on LAN	Disabled
Resume on Alarm	Disabled
X Date (of Month) Alarm	0
X Time (hh:mm:ss) Alarm	0 : 0 : 0

BIOS Setup

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

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ACPI Function	This field allows you to select ACPI function. **Enabled :** Support ACPI function for new O.S. **Disabled:** No support ACPI function. You can only change the content of Doze, Standby and Suspend Mode when the PM is set to “User Define”. **User Define :** Allows user to define PM Timers parameters to control power saving mode.
ACPI Suspend Type	This item allows to select S1(POS), S3(STR).nutes. If the setup time passes without any system activity, the computer will enter into power-saving.Suspend mode.
Power Management	This option shows weather or not you want to set up Power Management.
Video Off Method	This item shows how the video will be disabled by PM. The default is V/H Sync + Blank. **V/H Sync + Blank :** System turns off vertical and horizontal synchroniztion ports and writes blanks to the video buffer. **DPMS** is defaulted Select this option if your monitor supports the Display Power Managemetn Signaling (DPMS). Use the software supplied for your video subsystem to select video PM value. Blank Screen : System only writes blanks to the video buffer.
Video Off In Suspend	This determins the manner in which the monitor is blanked. Default is Yes.
Suspend Mode	This allows to select Suspend type. The settings are PWRON Suspend, Stop Grant.

	Default is **disabled.**
HDD Power Down	When this item is Enabled and after the set time of system inactivity, the HDD will be Powered Down when other Drives are remain active. The setttings are /2/3/4/5/6/7/8/9/10/11/12/13/14/15 Min. Default is **Disabled.**
Soft-Off By PWR BTTN	Use this item to select soft-off function. Default is Delay 4 sec. **Instant Off :** Turns off the system instantly. **Delay 4 Second :** Turns off the system after 4 seconds delay (by holding the power button down for 4 seconds). If momentary press of button, the system will go into Suspend Mode. Press the power button again to take system out of Suspend Mode.
Resume On PCI Event	This will enable the system to wake up via PCI card peripheral. Default is **Disabled.**
Resume On Ring	This enables system to boot up if there is an incoming call from the modem. Default is **Disabled.**
USB KB Wake-Up From S3	This item allows to use USB Keyboard to wake-up system with Suspend To RAM.
Resume On LAN	To use this function, you need a LAN add-on card which support power on functions. It also Supports wake LALN on jumper. Default is **Disabled.**
Resume On Alarm	This item is for setting time and date for your system to boot up. You could set the **date (of month) Alarm :** You can choose which month will boot up. When set to “0”, system can boot up everyday. **time (hh:mm:ss) Alarm:** You can choose which hour, minute and second the system will boot up. Note: Once the setting is changed, you must let the system boot up untill it goes to operating system before this function will work.

PNP/PCI Configuration Setup

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PnP/ PCI Configurations

Reset Configuration Data	: Disabled
Resources Controlled By	: Auto (ESCD)
▸ IRQ Resources	: Press Enter
PCI/VGA Palette Snoop	: Disabled
* PCI IRQ Assignment *	
Slot 1, 5	: Auto
Onboard AC97/Slot 2	: Auto
Slot 3	: Auto
Onboard USB/Slot 4	: Auto

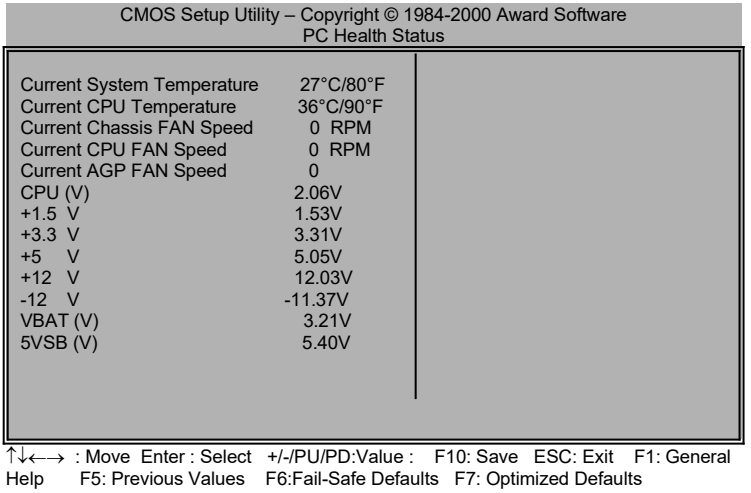
↑ ↓ →Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

The settings on the screen are for reference only. Your version may not be identical to this one.

Reset Configuration Data	This item allows you to clear ESCD (Extended System Configuration Data). Default is Disabled. If you have plugged in some Legacy cards to the system and they were recorded into ESCD, you can set here Enabled in order to clear ESCD.
Resources Controlled By	Who Controlled the system PNP/PCI resources. The default is Auto. **Manual :** PnP card's resources will be controlled manually. You can set which IRQ-X and DMA-X are assigned to PCI/ISA or Legacy ISA cards. **Auto(ESCD):** If you ISA card and PCI card are all PnP cards, BIOS will assign the interrupt resource automatically.
PCI/VGA Palette Snoop:	This item is set for some non-standard VGA cards. However most of cards include this built-in VGA system do not require palette Snoop so that leave it **disabled.**

PC Health Status

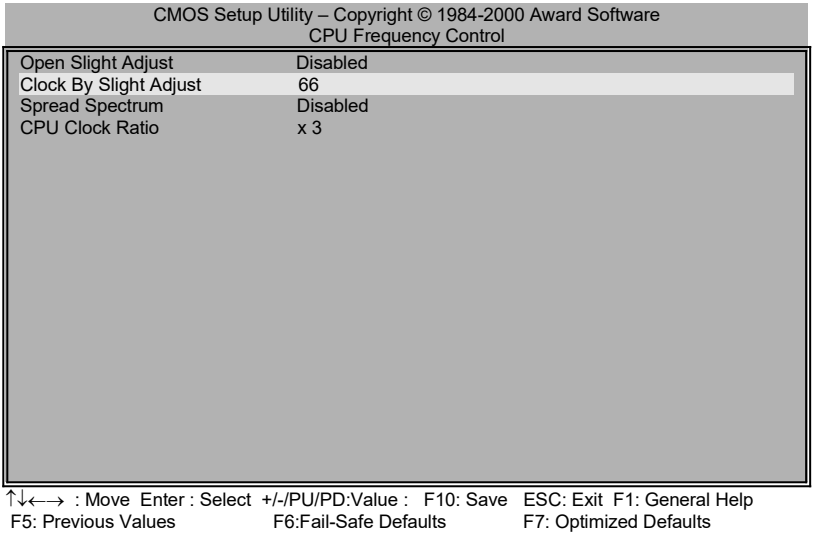
This page sets some of the parameters for monitoring function of this mainboard.



The settings on the screen are for reference only. Your version may not be identical to this one.

Current System perature	These items display the system temperature measurement. The system will alert you if a safe temperature is exceeded.
Currrent CPU Temperature	These items display CPU temperature measurement. The system will alert you if a safe temperature is exceeded.
Current Chassis FAN Speed	These items indicate chassis cooling fan speeds in RPM. If the values deviate beyond certain limits, the hardware monitoring feature will alert you with a warning.

Frequency/Voltage Control



The settings on the screen are for reference only. Your version may not be identical to this one.

Current Chassis FAN Speed	These items indicate chassis cooling fan speeds in RPM. If the values deviate beyond certain limits, the hardware monitoring feature will alert you with a warning.

Load Best Performance Settings

When you press **<Enter>** on this item, a dialog box appears as below:

Load Best Performance (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 likely to :

Load Optimized Defaults (Y/N) ? N

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

Change Password

Type the password, up to 8 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 once again. Now, type the password again and press <Enter>. You may also press <ESC> to abort the password set up. Once the password is disabled, the system will boot and you can enter **Setup** freely. If you highlight this item and press **Enter**, a dialog box appears which lets you enter a Supervisor password. You can enter no more than six letters or numbers. Press **Enter** after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press **Enter** after you have retyped it correctly. The password is then required to access the Setup Utility or for that and at start-up, depending on the setting of the Password Check item in Advanced Setup.

Change or Remove the Password

For changing password, you need to press <Enter> and enter the current password. At the next dialog box, type in the new password. To disable a password, just press <Enter> when you are requested to entered the password . A message to confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter setup freely.

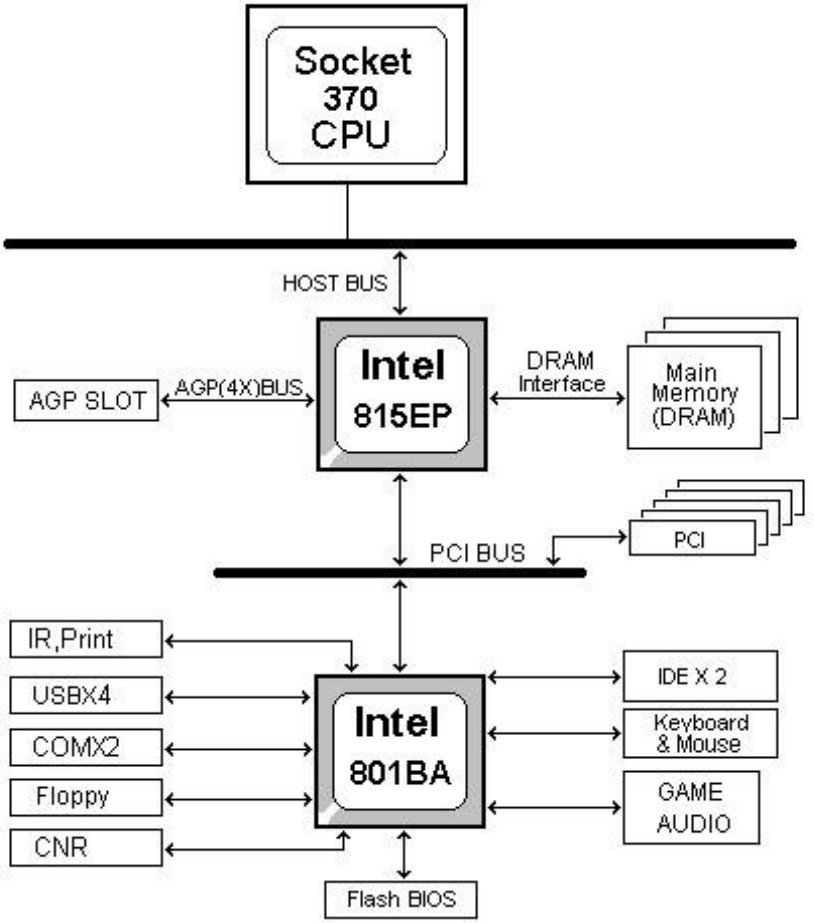
Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

System Block Diagram



Award BIOS 6.0 POST Code :

POST (HEX)	Description
CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
01h	Expand the Xgroup codes locating in physical address 1000:0
02h	Reserved
03h	Initial Superio_Early_Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved
0Ah	1. Disable PS/2 mouse interface (optional). 2. Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). 3. Reset keyboard for Winbond 977 series Super I/O chips.
0Bh	Reserved

POST (HEX)	Description
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reserved
16h	Initial onboard clock generator if Early_Init_Onboard_Generator is defined. See also POST 26h.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial EARLY_PM_INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved
	1.

23h	2. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. 2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead.
24h	Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information.
25h	Early PCI Initialization: -Enumerate PCI bus number. -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0
26h	1. If Early_Init_Onboard_Generator is not defined Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 3. Init onboard PWM 4. Init onboard H/W monitor devices
27h	Initialize INT 09 buffer
28h	Reserved
29h	1. Program CPU internal MTRR (P6 & PII) for 0-640K memory address. 2. Initialize the APIC for Pentium class CPU. 3. Program early chipset according to CMOS setup. Example: onboard IDE controller. 4. Measure CPU speed.
2Ah	Reserved
2Bh	Invoke Video BIOS
2Ch	Reserved
2Dh	1. Initialize double-byte language font (Optional) 2. Put information on screen display, including Award title, CPU type, CPU speed, full screen logo.
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard if Early_Reset_KB is defined e.g. Winbond 977

	series Super I/O chips. See also POST 63h.
34h	Reserved
35h	Test DMA Channel 0
36h	Reserved
37h	Test DMA Channel 1.
38h	Reserved
39h	Test DMA page registers.
3Ah	Reserved
3Bh	Reserved
3Ch	Test 8254
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1.
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2.
41h	Reserved
42h	Reserved
43h	Test 8259 functionality.
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K page. 2. Program write allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range. 3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved

50h	Initialize USB Keyboard & Mouse.
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Clear password according to H/W jumper (Optional)
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved
5Dh	1. Initialize Init_Onboard_Super_IO 2. Initialize Init_Onbaord_AUDIO.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reset keyboard if Early_Reset_KB is not defined.
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved
6Bh	Program chipset registers according to items described in Setup

	& Auto-configuration table.
6Ch	Reserved
6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to “AUTO”.
6Eh	Reserved
6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
70h	Reserved
71h	Reserved
72h	Reserved
73h	(Reserved
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM…..
76h	(Optional Feature) Enter AWDFLASH.EXE if: -AWDFLASH.EXE is found in floppy drive. -ALT+F2 is pressed.
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Init HDD write protect.
7Dh	Reserved
7Eh	Reserved
7Fh	Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: ◆Clear EPA or customization logo.
80h	Reserved
81h	Reserved
E8POST.ASM starts	
82h	1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen logo)

	3. If password is set, ask for password.
83h	Save all data in stack back to CMOS
84h	Initialize ISA PnP boot devices
85h	1. USB final Initialization 2. Switch screen back to text mode
86h	Reserved
87h	NET PC: Build SYSID Structure.
88h	Reserved
89h	1. Assign IRQs to PCI devices 2. Set up ACPI table at top of the memory.
8Ah	Reserved
8Bh	1. Invoke all ISA adapter ROMs 2. Invoke all PCI ROMs (except VGA)
8Ch	Reserved
8Dh	1. Enable/Disable Parity Check according to CMOS setup 2. APM Initialization
8Eh	Reserved
8Fh	Clear noise of IRQs
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	1. Enable L2 cache 2. Program Daylight Saving 3. Program boot up speed 4. Chipset final initialization. 5. Power management final initialization 6. Clear screen & display summary table 7. Program K6 write allocation 8. Program P6 class write combining
95h	Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick 5. Build MSIRQ routing table.
FFh	Boot attempt (INT 19h)

A. Problem Sheet

Customer			
Name		Tel	
address		Fax	

Mainboard			
Mode		Mainboard Rev	
Serial No.		BIOS version	

Configuration					
CPU	Brand		RAM	Brand	
	Type			Type & Size	
	Voltage			Speed	
Floppy disk	Brand		VGA card	Brand	
	Mode			Chipset	
	Size			RAM Type	
Hard disk	Brand		CD-ROM	Brand	
	Mode			Mode	
	Size			Speed	
Sound card	Brand		Lan card	Brand	
	Mode			Mode	
	Remark			PCI/ISA Bus	
Mouse	Brand		O.S	Brand	
	Mode			Name	
	PS/2 or Serial			Version	

Autoexec.bat	Config.sys

Problem Description

MEMO