FR33E

MAINBOARD MANUAL

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Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that there is no static electric charge in your body.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

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

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

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

Trademark

All trademarks mentioned in this manual are registered properly of the respective owners.

Handling Precautions

Table of Contents

Quick Reference (German) G-1
Quick Reference (French) F-1
Quick Reference (Spanish) S-1
Quick Reference (Japanese) J-1
Quick Reference (Chinese) C-1
Quick Reference (Simplified Chinese) SC-1

Chapter 1 Overview

Package Checklist 1-2
The FR33E Mainboard 1-3
Main Features 1-4
ACPI Ready 1-6
FIC Unique Innovation for Users (NOVUS) -
Enhanced Mainboard Features and System Support 1-6

Chapter 2 Installation Procedures

Quick Reference (from Page 2-2 to 2-4) 2-2
Mainboard Layout 2-2
1). Clear CMOS Enable 2-3
2). Front Panel Block Cable Connection 2-3
3). CPU Fan Installation 2-4
1). Set System Jumpers 2-4
Clear CMOS: CLR_CMOS 2-5
2). Install Memory Modules 2-5
3). Install the CPU 2-6
4). Install Expansion Cards 2-7
5). Connect Devices 2-9
Floppy Diskette Drive Connector: 2-9
IDE Device Connectors 2-10
ATX Power Connector 2-10
Fan Connectors 2-11
Wake-On-LAN Connector 2-11
Wake-On-Ring Connector 2-12
CD Audio-In Connector 2-12
Front Panel Block and Speaker Connector 2-13
PS/2 Keyboard and Mouse Connector 2-14
LAN Jack 2-14

Universal Serial Bus Connectors 2-15
Serial Port Connectors 2-15
Video Graphics Accelerator Connector 2-16
Printer Connector 2-16
Audio I/O Jacks 2-17
GAME/MIDI Connector 2-17
SPDIF Connector 2-18

Chapter 3 BIOS Setup

CMOS Setup Utility 3-1
Standard CMOS Setup 3-2
Advanced BIOS Features 3-4
Advanced Chipset Features 3-7
Integrated Peripherals 3-10
Power Management Setup 3-15
PnP/PCI Configurations 3-19
PC Health Status 3-21
Frequency/Voltage Control 3-22
Load Fail-Safe Defaults 3-23
Load Optimized Defaults 3-23
Supervisor/User Password 3-23
Save and Exit Setup 3-24
Exit without Saving 3-24

Overview

The new Micro ATX, Socket 370 mainboard is a low cost all-in-on Intel® solution that supports a full range of the latest generation Intel® and Cyrix® processors. New lightening fast processors from Intel of up to 1.26GHz and up* are supported with Front Side Bus speeds of 66/100/133 MHz.
(*: not tested yet)

The VIA VT8601T Apollo PLE133T® on this mainboard coworks with Intel Celeron®, Cumine®, Tualatin® and Cyrix processors. With integrated AGP 2D/3D graphics accelerator, features AC97 codec, and other onboard audio feature that embedded in VIA 686B® Super South, the mainboard offers an excellent media environment.

Support for the Ultra DMA/100 protocol and its high-speed interface further ensures that data transfer speeds are improved, especially for long sequential transfers required by audio/visual applications. With 2 DIMM sockets, the mainbard allows up to total 1GB PC-133 SDRAM.

The board comes with a versatile range of I/O features such as 2 serial ports, 1 parallel port, 1 front audio, 1 PS/2 mouse and keyboard connector, 2 USB rear connectors, 2 USB ports for either front or rear panel connection, 1 VGA connector, 1 media connector (MIDI /game port, Line-in, Line-out and Mic-in) and moreover, with 1 RJ45 LAN jack. Addon card expansion is available through 2 PCI , 1 AMR and 1 ISA.

Other key features are Remote On/Off, Auto Power Failure Recovery, integrated temperature monitoring and system fan control. Included also is CD Pro with enhanced drivers.

Package Checklist

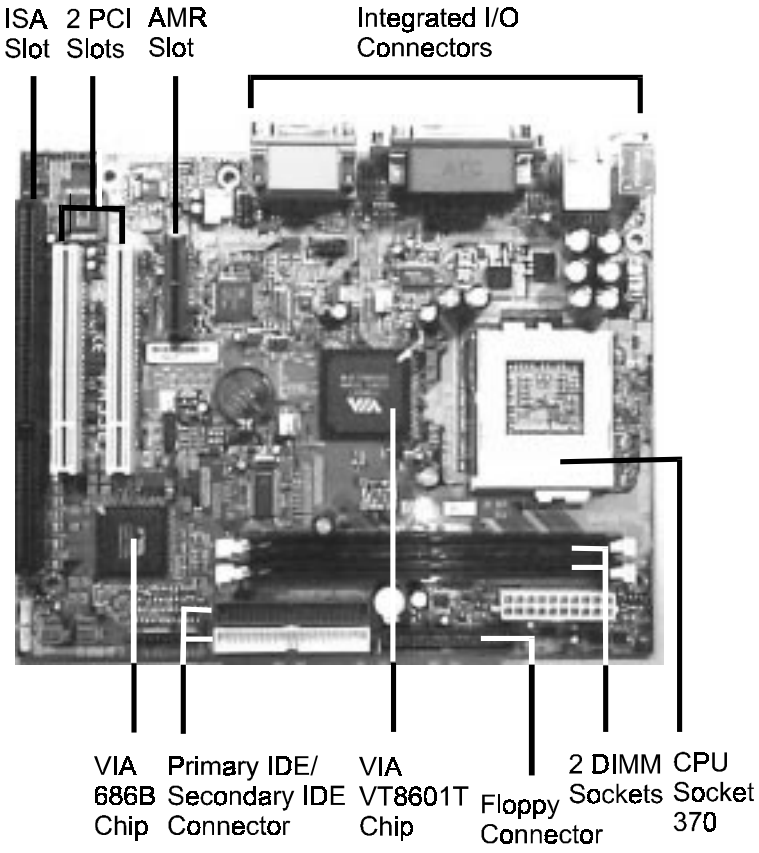
If you discover any item below was damaged or lost, please contact your vendor.

- ☑ The mainboard
- ☑ This user manual
- ☑ One FDD cable
- ☑ Software drivers
- ☑ One ATA/100 cable

NOTE: CD Pro that contains patch files, onboard video/audio chip drivers, related online help and other useful information can be found in your mainboard package.

*Please install it right after your Windows operating system installation is done.*Place your CD Pro in the drive, an operating menu will appears in your monitor. Please select *Auto Installation*. It will automatically detect which software tools (patch files, drivers) that the mainboard needs. Press **OK** button to go through the whole installation procedure in a very straight forward and easy way. It also provides you with a custom way to select wanted patch files and software drivers that for onboard chips use.

The FR33E Mainboard



Main Features

- Easy Installation

  BIOS with support for Plug and Play, auto detection of IDE hard drives, LS-120 drives, IDE ZIP drives, Windows 98SE, Windows ME, Windows NT, Windows 2000, Windows XP, and OS/2.

- Leading Edge Chipset

  VIA Apollo PLE133T (VT 8601T) is a North Bridge with integrated 2D/3D graphics accelerator. The chip is designed for offering a reliable, effective,and excellent performance. It contains internal AGP controller, concurrent PCI bus controller, advanced DRAM controller, and power management support.

- Versatile Main Memory Support

  Accepts up to total 1GB PC-133 SDRAM using two DIMMs of 64, 128, 256, 512MB with support for lightning-fast SDRAM (100/133MHz).

- Flexible Processor Support

  Onboard CPU socket supports:
  Intel Celeron 667 MHz -1.1 GHz and up*
  Intel Pentium 533 MHz - 1 GHz
  Intel Tualatin 1.13 - 1.26*GHz
  Cyrix III 733A - 933* MHz
  (*: not tested yet)

- Enhanced PCI Bus Master IDE Controller with Ultra DMA 33/66/100 Support

  Integrated Enhanced PCI Bus Master IDE controller features two dual-channel connectors that up to four Enhanced IDE devices, including CD-ROM and Tape Backup Drives, as well as Hard Disk Drives supporting the new Ultra DMA 100 protocol. Standard PIO Mode 3, PIO Mode 4, DMA Mode 2, DMA Mode 4, UltraDMA-100 Mode 5 devices are also supported.

- LAN Support
  One RJ45 LAN jack on the rear panel and onboard LAN controller allows you to connect with network system in a very easy way.

- AMR, ISA, and PCI Expansion Slots
  One AMR, one ISA Bus expansion slot, and two PCI Bus expansion slots provided the room to install a full range of add-on cards.

- Integrated Audio Subsystem
  Embedded audio features in the VIA 686B provide hardware Sound BlasterProfor Windows DOS box and real mode DOS legacy compatibility, dual full-duplex Direct Sound channels between system memory and AC97 link.

- Super Multi Input/Output (I/O) Support
  Integrated super I/O controller in the VIA 686B features two high-speed UART serial ports, one multi-mode (standard/ECP/EPP) parallel port, one IR port, and one FDD connector.

- Convenient Rear Panel USB Connection Support
  Two USB ports integrated in the rear I/O panel with two extra USB pinheads for either front or rear panel connections to the growing number of USB compliant peripheral devices on the market.

ACPI Ready

This mainboard fully implements the new ACPI (Advanced Configuration and Power Interface) 1.0B Hardware and BIOS requirement. If you install ACPI aware of operating system, such as Windows 98, you fully utilized the power saving under ACPI. *(Windows ME/2000 Professional/XP supports ACPI functions.)*

FIC Unique Innovation for Users (NOVUS) - Enhanced Mainboard Features and System Support

- Easy Key

  Instead of completing the multi-layered BIOS setup process these Easy Key functions provide direct access to Sub-Menu when completing BIOS settings adjustments.

  Easy-Keys are as follows:

  Ctrl + c: To enter clock settings menu.
  Ctrl + p: To load Performance Default settings and restart.
  Ctrl + f: To load Fail-Safe Default settings and restart.

Installation Procedures

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

To set up your computer, you must complete the following steps:

- Step 1 - **Set system jumpers/switches**
- Step 2 - **Install memory modules**
- Step 3 - **Install the Central Processing Unit (CPU)**
- Step 4 - **Install expansion cards**
- Step 5 - **Connect ribbon cables, cabinet wires, and power supply**
- Step 6 - **Set up BIOS software**
- Step 7 - **Install supporting software tools**

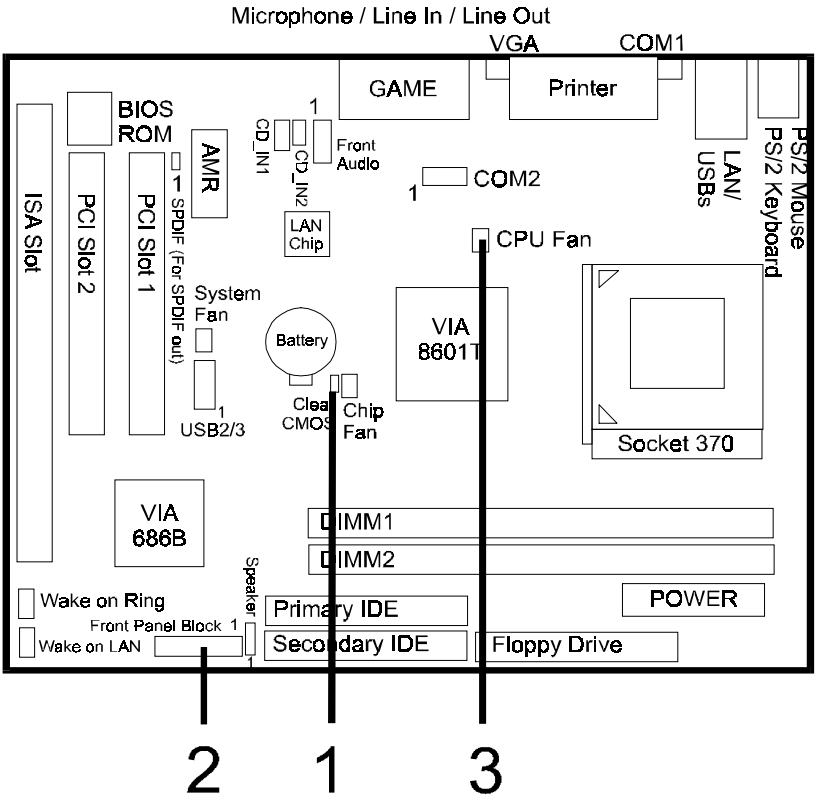
WARNING: Excessive torque may damage the mainboard. When using an electric screwdriver on the mainboard, make sure that the torque is set to the allowable range of 5.0 ~ 8.0kg/cm.

Mainboard components contain very delicate Integrated Circuit (IC) chips. To prevent static electricity from harming any of the mainboard's sensitive components, you should follow the following precautions whenever working on the computer:

1. Unplug the computer when working on the inside.
2. Hold components by the edges and try not to touch the IC chips, leads, or circuitry.
3. Wear an anti-static wrist strap which fits around the wrist.
4. Place components on a grounded anti-static pad or on the bag that came with the component whenever the components are separated from the system.

Quick Reference (from Page 2-2 to 2-4)

Mainboard Layout

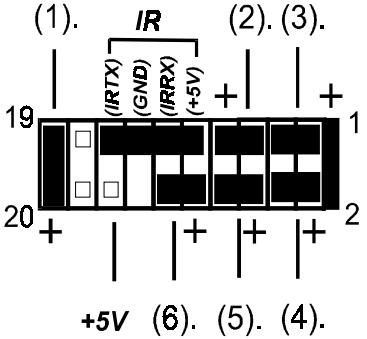


1). Clear CMOS Enable

Clear CMOS: CLR_CMOS

Note: If the pin cap keeps staying at pin pair 2-3, the system can not boot up.

2). Front Panel Block Cable Connection



(6). ***Suspend Button***

(1). ***Power LED***

(5). ***Power Button***

(2). ***Reset Button***

(4). ***Dual Power LED***

(3). ***HDD LED***

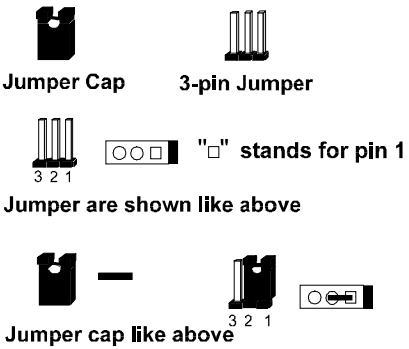
3). CPU Fan Installation

This connector is linked to the CPU fan. When the system is in power saving mode, the CPU fan will turn off; when it reverts back to full on mode, the fan will turn back on. Without sufficient air circulation, the CPU may overheat resulting in damage to both the CPU and the mainboard.

Damage may occur to the mainboard and/or the CPU fan if these pins are used incorrectly. These are not jumpers, do not place jumper caps over these pins.

1). Set System Jumpers

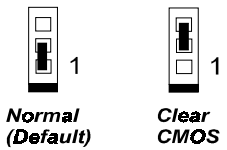
Jumpers are used to select the operation modes for your system. Some jumpers on the board have three metal pins with each pin representing a different function. A 1 is written besides pin 1 on jumpers with three pins. To **set** a jumper, a black cap containing metal contacts is placed over the jumper pin/s according to the required configuration. A jumper is said to be **shorted** when the black cap has been placed on one or two of its pins. The types of jumpers used in this manual are shown below:

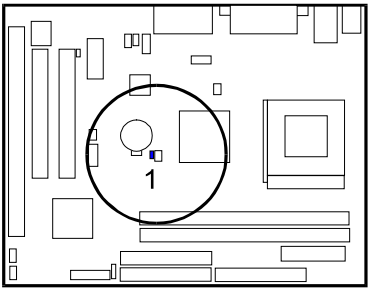


NOTE: Users are not encouraged to change the jumper settings not listed in this manual. Changing the jumper settings improperly may adversely affect system performance.

Clear CMOS: CLR_CMOS

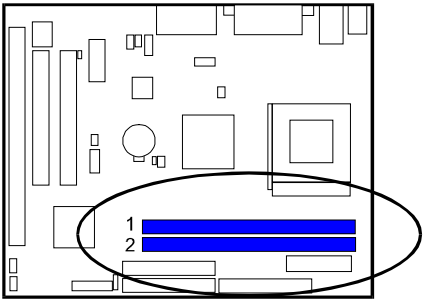
The CMOS RAM is powered by the onboard button cell battery. To clear the RTC data: (1) Turn off your computer. (2) Place the jumper cap onto the pinpair 2-3 to clear CMOS (3) Turn on your computer until CMOS checksum error appears (4) Turn off your computer. (5) Place the jumper cap onto the pinpair 1-2 to Normal (6) Turn on your computer. (7) Hold down the **Delete** key when boots. (8) Enter the BIOS Setup to re-enter user preferences.

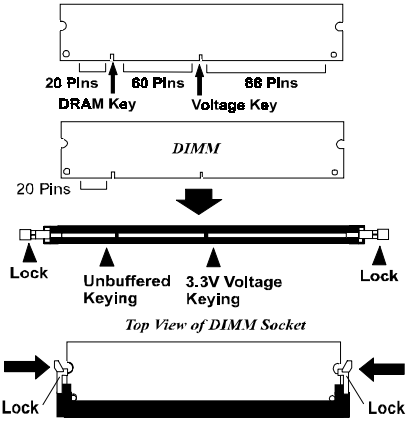




2). Install Memory Modules

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

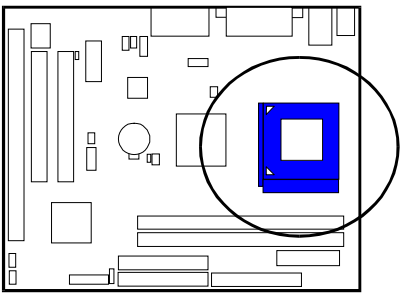




Press the clips with both hands to remove the DIMM.

3). Install the CPU

The mainboard has built-in Switching Voltage Regulator to support CPU Vcore autodetection. That is, It has the ability to detect and recognize the CPU voltage, clock, ratio and enables users to set up the CPU frequency from the BIOS Setup Screen. Users can adjust the frequency through Frequency / Voltage Control of the BIOS Setup Screen.



CAUTION:

1. The heatsink and fan you installed must be approved by CPU manufactories.
2. The mainboard must be placed on a solid place to avoid shaking while install the heatsink and fan on the board.
3. The heatsink must be contact with the CPU top tightly.
4. Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

To install the CPU, do the following:

1. Lift the lever on the side of the CPU socket.

2. Handle the chip by its edges and try not to touch any of the pins.

3. Place the CPU in the socket. The chip has two notches to correctly locate the chip. Align two notches of the processor with the two triangular marks on the socket. Do not force the chip. The CPU should slide easily into the socket.

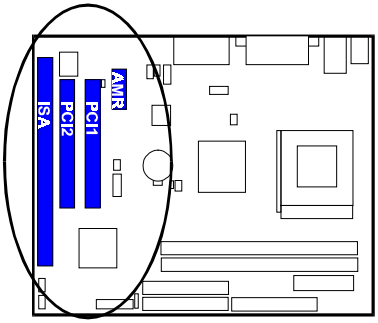
4. Swing the lever to the down position to lock the CPU in place.

5. Install the cooling fan with heatsink on top of the installed CPU.

6. Place the mainboard (with the CPU, its cooling fan, and heatsink) into the system chassis and affix it with screws.

4). Install Expansion Cards

This section describes how to connect an expansion card to one of your system expansion slots. Expansion cards are printed circuit boards that, when connected to the mainboard, increase the capabilities of your system. For example, expansion cards can provide video and sound capabilities. The mainboard features one AMR, one ISA, and two PCI bus expansion slots.



CAUTION: Make sure to unplug the power supply when adding or removing expansion cards or other system components. Failure to do so may cause severe damage to both the mainboard and expansioncards.
Always observe static electricity precautions.
Please read Handling Precautions at the start of this manual.

To install an expansion card, follow the steps below:

1. Remove the computer chassis cover and select an empty expansion slot.

2. Remove the corresponding slot cover from the computer chassis. Unscrew the mounting screw that secures the slot cover and pull the slot cover out from the computer chassis. Keep the slot cover mounting screw nearby.

3. Holding the edge of the peripheral card, carefully align the edge connector with the expansion slot.

4. Push the card firmly into the slot. Push down on one end of the expansion card, then the other. Use this rocking motion until the add–on card is firmly seated inside the expansion slot.

5. Secure the board with the mounting screw removed in Step 2. Make sure that the card has been placed evenly and completely into the expansion slot.

6. Replace the computer system cover.

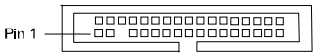
7. Setup the BIOS if necessary.

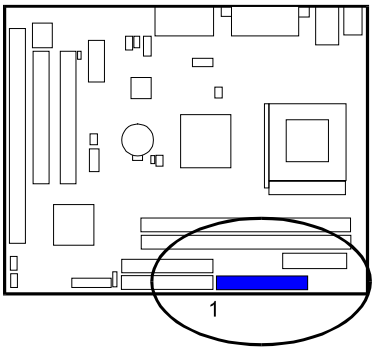
8. Install the necessary software drivers for the expansion card.

5). Connect Devices

Floppy Diskette Drive Connector

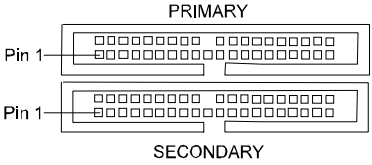
This connector provides the connection with your floppy disk drive. The red stripe of the ribbon cable must be the same side with the Pin 1.

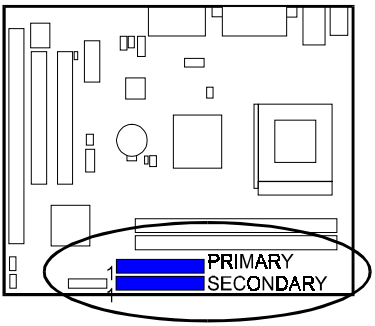




IDE Device Connectors

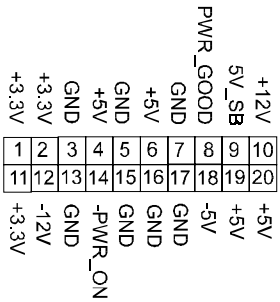
These two connectors are used for your IDE hard disk drives, CD drives, LS-120 drives, or IDE ZIP drives. The red stripe of the ribbon cable must be the same side with the Pin 1.

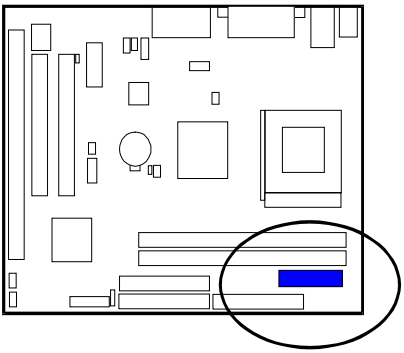




ATX Power Connector

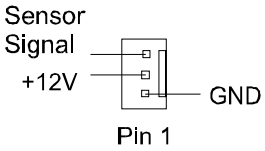
This 20-pin male block connector is connected to the ATX power supply. The plug from the power supply will only insert in one orientation because of the different hole sizes. Find the proper orientation and push down firmly making sure that the pins are aligned.

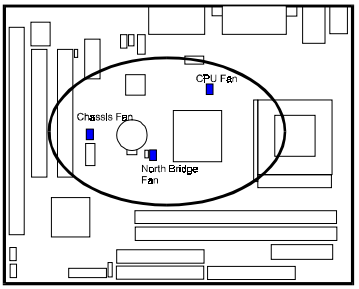




Fan Connectors

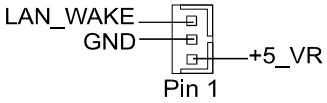
The two connectors, CPU_FAN, SYS_FAN are linked to the CPU fan, case fan, respectively. CHIP_FAN can be used either with the case fan or North Bridge chip fan. For preventing the system and chip from overheat damage, the fans on this board will keep running when the system in suspend mode.

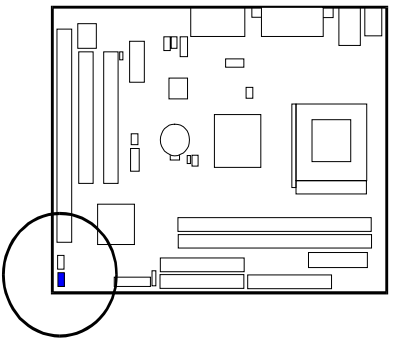




Wake-On-Lan Connector

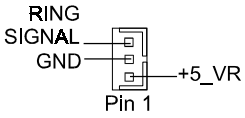
This 3-pin connector allows the remote servers to manage the system that installed this mainboard via your network adapter which also supports WOL.

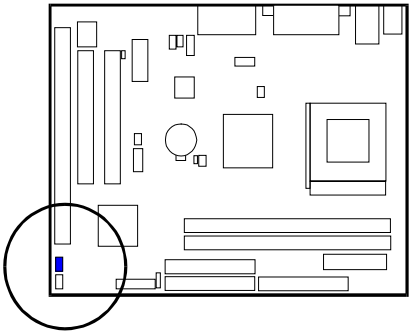




Wake-On-Ring Connector

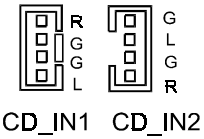
This 3-pin connector allows the modem ring call to wake up your computer system by connecting a wire between this connector and your modem card that installed on the AMR slot.

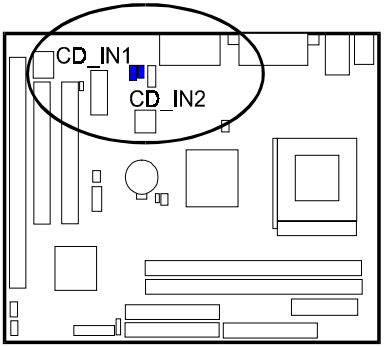




CD Audio-In Connectors

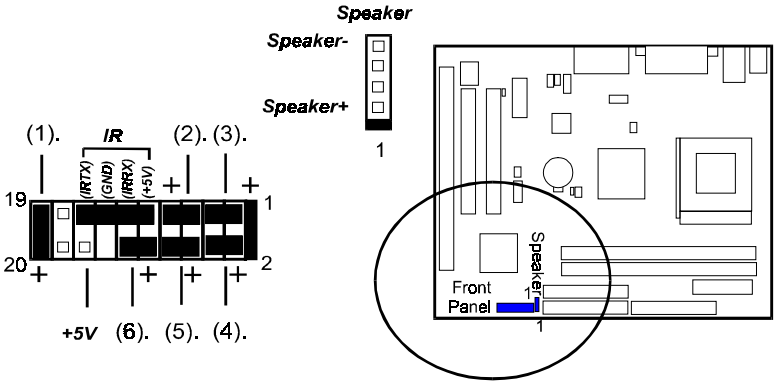
The two connectors are used for different types for CD drive audio in port.





Front Panel Block and Speaker Connector

This block connector includes the connectors for linking with HDD LED, power LED, dual power LED, power button, suspend button, reset button, and IR on the front panel of the system case. Please identify polarities of plug wires for the case speaker and LEDs. Please ask vendor about this information when you buy them and install the system by yourself. The plug wires polarities of these buttons will not affect the function.

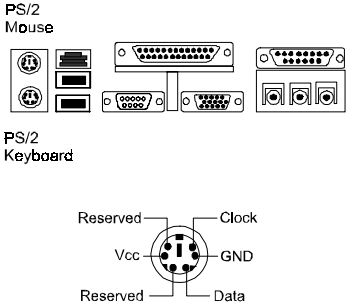


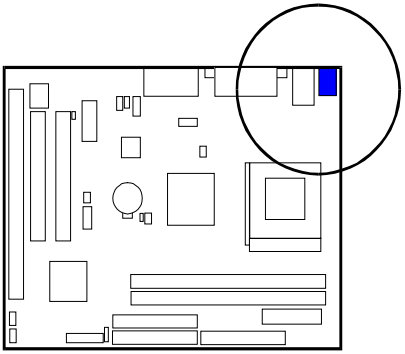
1. Power LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.
2. Reset Button is connected to the reset button. Push this switch to reboot the system instead of turning the power button off and on.
3. HDD LED is connected to the IDE device indicator. This LED will blink when the hard disk drives are activated.
4. Dual Power LED it is in green light when the system in power on status. It is in yellow light when the system in suspend mode.
5. Power Button is connected with power button. Push this switch allows the system to be turned on and off rather than using the power supply button.
6. Suspend Button is connected with suspend button. To enter the system into power saving mode, simply press this button when the system is in full-on mode.

Speaker is connected with the case speaker.

PS/2 Keyboard and Mouse Connector

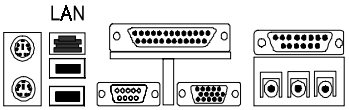
These two 6-pin female (PS/2 keyboard is purple color and PS/2 mouse is green color) connectors are used for your PS/2 keyboard and PS/2 mouse.

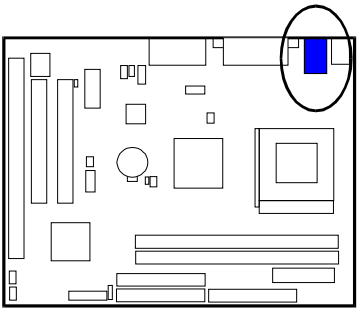




LAN Jack

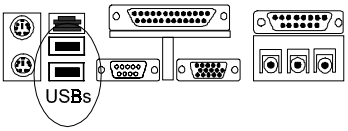
Please plug your LAN cable into this jack to connect with network system.

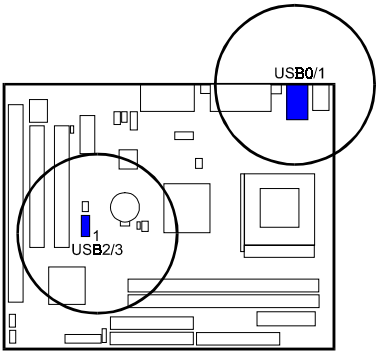




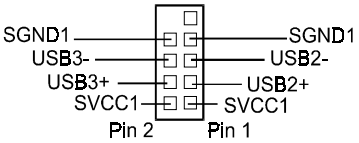
Universal Serial Bus Connectors

These two black connectors integrated on the edge of the board are used for linking with USB peripheral devices. This board also provides two extra USB connectors, USB2/3, either for the front panel USB sockets or for rear panel. Please note your operating system must support USB features, such as MS Windows 98, MS Windows 95 OSR2.5 with USB Supplement.





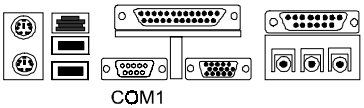
The figure below is the pin assignment of USB2/3 connectors.

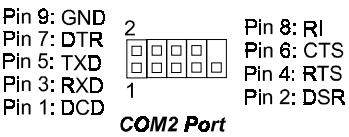


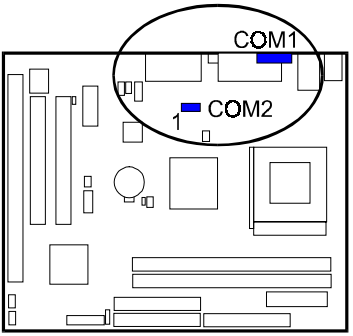
(Only rear USBs support keyboard/mouse power-on from S3, front USBs do not.)

Serial Port Connectors

COM1 (9-pin D-sub male connector with teal color) and COM2 (9-pin male connector) allow you to connect with your devices that use serial ports, such as a serial mouse or an external modem.

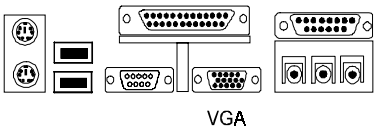


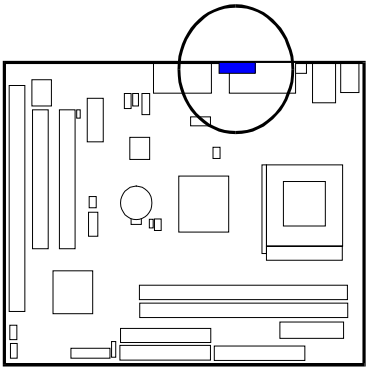




Video Graphics Accelerator Connector

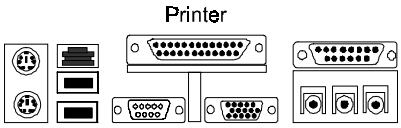
This 15-pin female D-sub blue connector is connected to your display monitor.

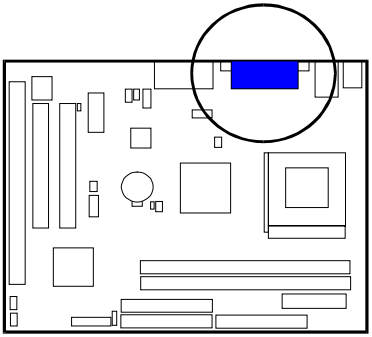




Printer Connector

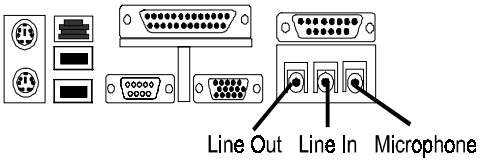
This 25-pin D-Sub female burgundy-colored connector is attached to your printer.

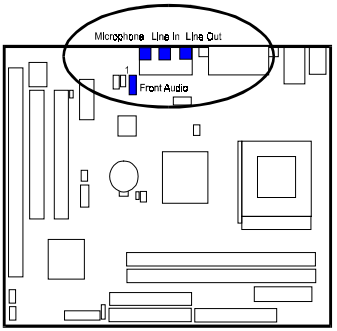


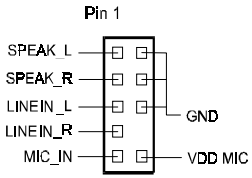


Audio I/O Jacks

LINE_OUT (lime) can be connected to headphones or preferably powered speakers. LINE_IN (light blue) allows tape players or other audio sources to be recorded by your computer or played through the LINE_OUT. MIC_IN (pink) allows microphones to be connected for voice input. The mainboard also provides you with a front panel audio port connector, F_AUDIO, when needed. Its pin definitions were presented below.



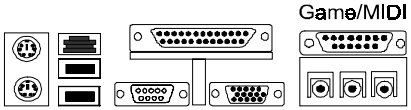


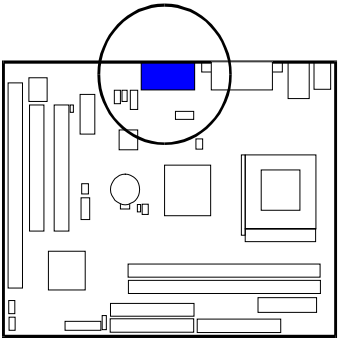


F_AUDIO

Game/MIDI Connector

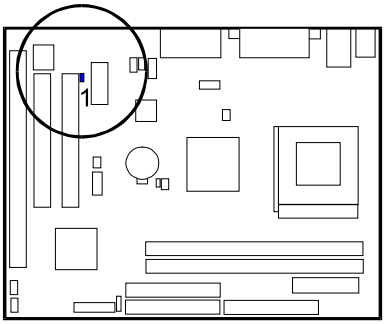
This 15-pin female gold-colored connector allows you to connect game joysticks or game pads. Connect MIDI devices for playing or editing audio.





SPDIF Connector

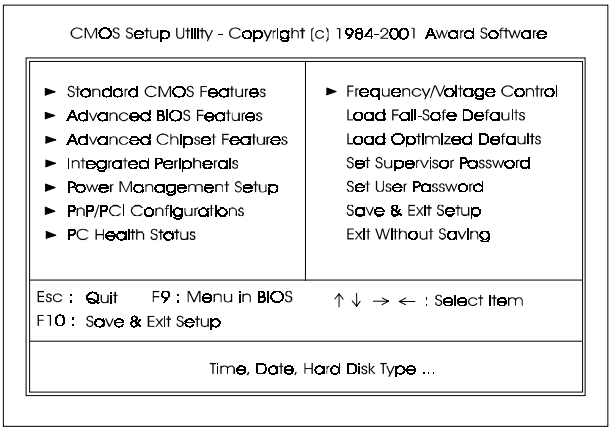
This 3-pin connector offers the audio output in a SPDIF specification to achieve a better sound performance.



BIOS Setup

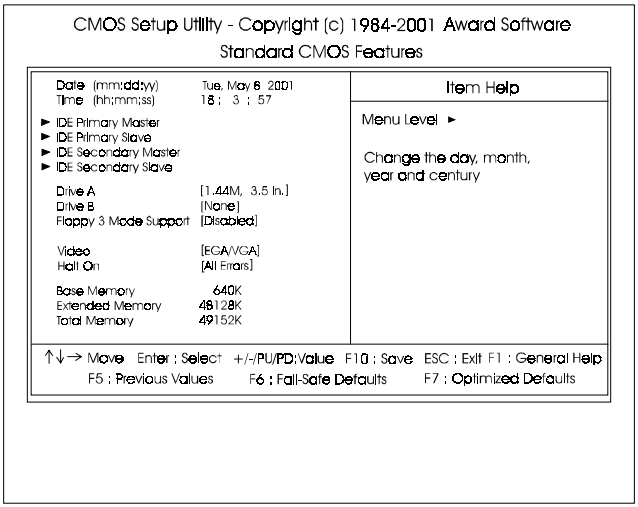
The mainboard comes with the chip that Award BIOS that contains the ROM Setup information of your system. (This chip serves as an interface between the processor and the rest of the mainboard components.) This section explains the information contained in the Setup program and tells you how to modify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

CMOS Setup Utility



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

Standard CMOS Setup



The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. Use the arrow keys to highlight the item and then use **PgUp** or **PgDn** keys to select the value you want in each item.

Date

To set the date, highlight the *Date* field and then press **Page Up/Page Down** or **+/-** keys to set the current date. Follow the month, day and year format.

Time

To set the time, highlight the *Time* field and then press **Page Up/Page Down** or **+/-** keys to set the current time. Follow the hour, minute, and second format.

Hard Disks

This field records the specifications for all non-SCSI hard drives installed in the system. The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks, the first of which is the *Master* and the second is the *Slave*.

Hard Disk Configurations

Capacity:	The hard disk size. The unit is Bytes.
Cylinder:	The cylinder number of the hard disk.
Head:	The read/write head number of hard disk.
Precomp:	The cylinder number at which the disk drive changes the write current.
Landing Zone:	The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.
Sector:	The sector number of each track defined on the hard disk.

Drive A / Drive B

This field records the types of floppy drives installed in the system. To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the **Page Up** or **Page Down** key.

Floppy 3 Mode Support

This is a Japanese standard floppy type drive. The standard stores 1.2MB in a 3.5 inch diskette.

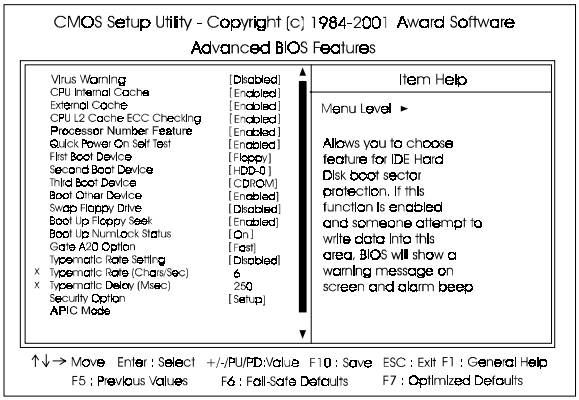
Video

Set this field to the type of video display card installed in the system.

Halt On

This field determines which types of errors will cause the system to halt.

Advanced BIOS Features



Virus Warning

This feature will prompt uses a warning message, when any write boot sector commend executed.

The options are: Enabled, Disabled.

CPU Internal Cache

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

External Cache

When enabled, supports CPU L2 cache. This feature allows you to disable the cache function when the system performance is unstable to run some software. The options are: Enabled, Disabled.

CPU L2 Cache ECC Checking

When enabled, it activates the CPU L2 cache check and error correction. The options are: Enabled, Disabled.

Processor Number Feature

If a Pentium III processor is installed on this mainboard, the system BIOS will allow other utilities to access the Intel Pentium III serial number while this feature set at Enabled. The options are: Enabled, Disabled.

Quick Power On Self Test

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

First/Second/Third Boot Device

This feature allows user to select the boot device priority. The options are: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled.

Boot Other Device

This feature allows user to select the boot device priority.
The options are: Enabled, Disabled.

Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives.
The options are: Enabled, Disabled.

Boot Up Floppy Seek

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

Boot Up Numlock Status

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

Gate A20 Option

When set at Fast, allows a faster access response of address Line No. 20.
The options are: Fast, Normal.

Typematic Rate Setting

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

Typematic Rate (Chars/Sec)

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

Typematic Delay (Msec)

This feature is available only if the item, Typematic Rate Setting, is set at Enabled. Sets the delay time before a character is repeated.
The options are: 250, 500, 750, 1000 millisecond.

Security Option

Allows you to set the security level of the system.
The options are: Setup, System.

APIC Mode

Allows you to decide if the system enters the APIC (Advanced Programmable Interrupt Controller) mode or not for more IRQs can be released.

MPS Version Control For OS

When two CPUs onboard (not this board) this feature allows you to select MPS (Multi-Processor Spec.) version control for OS when logo test executes. The options are: 1.1, 1.4.

OS Select For DRAM > 64MB

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

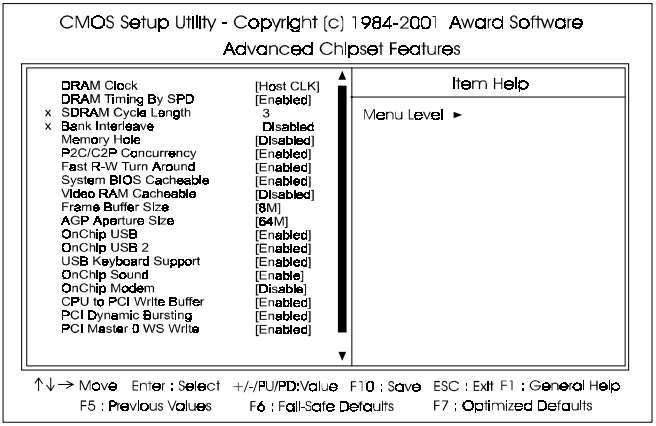
HDD S.M.A.R.T. Capability

S.M.A.R.T. stands for Self-Monitoring and Analysis Reporting Technology which allows your hard disk drive to report any read/write errors and issues a warning with LDCM installed.
The options are: Disabled, Enabled.

Report No FDD For WIN 95

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

Advanced Chipset Features



DRAM Clock

The feature allows users to select the DRAM clock.
The options are: Host CLK, HCLK-33M, HCLK+33M, By Auto.

DRAM Timing By SPD

This item allows you to use supports of Serial Presence Detect (SPD), the system BIOS can recongnize its specificity, then do automatic timer setting SPD data. If you set any timing manually, please set this feature at Disabled. The options are: Enabled, Disabled.

SDRAM Cycle Length

This item will function only when SDRAM DIMM/s are installed on the mainboard (BIOS auto detection). If the CAS latency of your SDRAM DIMM is 2, set it at 2 to enhance your system performance. If the CAS latency of your SDRAM DIMM is 3, stay with the default setting, 3.
The options are: 3, 2.

Bank Interleave

This item allows users to select the bank interleave function of DRAM, when the feature DRAM Timing By SPD set at Disabled.
The options are: Disabled, 2 Bank, 4 Bank.

Memory Hole

When you install a Legacy ISA card, this feature allows you to select the memory hole's address range of the ISA cycle when the processor accesses the selected address area. Please read your card manual for detail information. When disabled, the memory hole at the (15-16MB) address will be treated as a DRAM cycle when the processor accesses the 15~16MB address area. The options are: 15M - 16M, Disabled.

P2C/C2P Concurrency

This feature allows users to set PCI/AGP Master-to-CPU/ CPU-to-PCI/ AGP Slave concurrent.
The options are: Enabled, Disabled.

Fast R-W Turn Around

It allows users to set DRAM fast read-to-write turn around.
The options are: Enabled, Disabled.

System BIOS Cacheable

When enabled, allows the ROM area F000H-FFFFH to be cacheable when cache controller is activated. The options are: Enabled, Disabled.

Video BIOS Cacheable

As with caching the system BIOS above, enabling the video BIOS cache will cause access to the video BIOS addressed at C0000H-C7FFFH to be cached, if the cache controller is also enabled.
The options are Enabled, Disabled.

Video RAM Cacheable

When enabled, allows the video RAM area to be cacheable.
The options are: Enabled, Disabled.

Frame Buffer Size

It allows user to select the frame buffer size of VGA share memory.
The options are 2M, 4M, 8M.

AGP Aperture Size

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

OnChip USB/OnChip USB 2

When enabled, this feature allows you to use the onboard USB feature. The options are: Enabled, Disabled.

USB Keyboard Support

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

OnChip Sound

This feature allows you to disable the onboard audio function if needed. The options are: Enable, Disable.

OnChip Modem

This feature allows you to disable the CNR modem function if needed. The options are: Enable, Disable.

CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of the system controller; so the processor can be released from the waiting state. The options are: Enabled, Disabled.

PCI Dynamic Bursting

When enabled, the PCI controller allows Bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus throughput.
The options are: Enabled, Disabled.

PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM. The options are: Enabled, Disabled.

PCI Delay Transaction

Enable this feature to abort the current CPI master cycle and to accept the new PCI master request, it reaccepts the original PCI master and returns the PCI data phase to the original PCI master.
The options are: Disabled, Enabled.

PCI#2 Access #1 Retry

When enabled, the AGP (PCI#2) access to PCI (PCI#1) will be retried until the maximum count. The options are: Disabled, Enabled.

AGP Master 1 WS Write

When enabled, the AGP bus master write access to DRAMs will add one wait-state cycle. The options are: Enabled, Disabled.

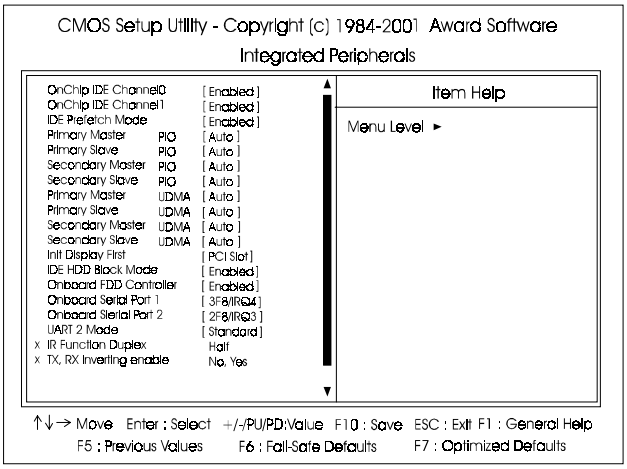
AGP Master 1 WS Read

When enabled, the AGP bus master read access to the DRAMs will add one wait-state cycle. The options are: Disabled, Enabled.

Memory Parity Check/ECC Check

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

Integrated Peripherals



OnChip IDE Channel0

When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.
The options are: Enabled, Disabled.

OnChip IDE Channel1

When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.
The options are: Enabled, Disabled.

IDE Prefetch Mode

When set at Enabled, it allows data to be posted to and prefetched from the primary IDE data ports. Data prefetching is initiated when a data port read occurs. The read prefetch eliments latency to the IDE data ports and allows them to be performed back to back for the highest possible PIO data transfer rates. The first data port read of a sector is called the demand read. Subsequent data port reads from the sector are called prefetch reads. The demand read and all prefetch reads must be of the same size (16 or 32 bits). The options are: Enabled, Disabled.

Primary Master PIO

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

Primary Slave PIO

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

Secondary Master PIO

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

Secondary Slave PIO

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

Primary Master UDMA

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

Primary Slave UDMA

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

Secondary Master UDMA

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

Secondary Slave UDMA

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

Init Display First

When you install a PCI VGA card on the board, this feature allows you to select the first initiation of the monitor display from PCI or onboard AGP. The options are: PCI Slot, AGP.

IDE HDD Block Mode

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

Onboard FDD Controller

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

Onboard Serial Port 1

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

Onboard Serial Port 2

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

UART 2 Mode

Select an operating mode for the second serial port. Set at Standard, if you use COM2 as the serial port as the serial port, instead as an IR port. The options are: Standard, ASKIR, HPSIR.

IR Function Duplex

This feature is available only it the above item , UART2 Mode, is set at ASKIR or HPSIR. It allows you to select the infrared data transaction way. The options are: Half , Full.

TX, RX Inverting Enable

This feature is available only it the above item , UART2 Mode, is set at ASKIR or HPSIR. It allows you to select the active signals of the reception end and the transmission end.
The options are: No, Yes; Yes, Yes; No, No; Yes, No.

Onboard Parallel Port

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

Onboard Parallel Port Mode

Allows you to connect with an advanced printer.
The options are: Normal, EPP, ECP, ECP/ ECP.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access (DMA) channel if the ECP mode selected. The options are: 3, 1.

Parallel Port EPP Type

This feature allows you to select the EPP type for the parallel port.
The options are: EPP1.9, EPP1.7.

Onboard Legacy Audio

Set Audio to be compatible with legacy mode.
The options are: Enabled, Disabled.

Sound Blaster

This feature allows you to set audio to Sound Blaster mode, if the onboard Legacy audio chosen. The options are: Enabled, Disabled.

SB I/O Base Address

This feature allows you to select the SB I/O base address, if the onboard Legacy audio chosen. The options are: 220H, 240H, 260H, 280H.

SB IRQ Select

This feature allows you to select the SB IRQ, if the onboard Legacy audio chosen. The options are: IRQ 5, IRQ 7, IRQ 9, IRQ 10.

SB DMA Select

This feature allows you to select the SB DMA channel, if the onboard Legacy audio chosen.
The options are: DMA 1, DMA 2, DMA 3, DMA0.

MPU-401

This feature allows you to enable MPU-401, if the onboard Legacy audio chosen. The options are: Disabled, Enabled.

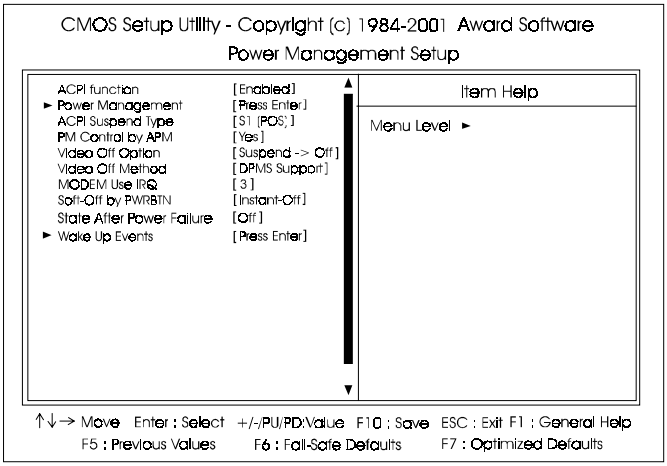
MPU-401 I/O Address

This feature allows you to select the MPU-401 I/O address, if the onboard Legacy audio chosen.
The options are: 310-313H, 320-323H, 330-333H, 300-303H.

Game Port (200-207H)

This feature allows you to select the game port (200-207H), if the onboard Legacy audio chosen.
The options are: Enabled, Disabled.

Power Management Setup



ACPI function

This item allows you to disable the ACPI function.
The options are: Enabled, Disabled.

Power Management

This item allows you to adjust the power management features.

Select User Define for configuring your own power management features. Min Saving initiates all predefined timers in their minimum values. Max Saving, on the other hand, initiates maximum values. The options are: User Define, Min Saving, Max Saving.

HDD Power Down

The option lets the BIOS turn the HDD motor off when system is in Suspend mode. Selecting 1 Min..15 Min allows you define the HDD idle time before the HDD enters the Power Saving Mode.
The options 1 Min..15 Min will not work concurrently. When HDD is in the Power Saving Mode, any access to the HDD will wake the HDD up.
The options are: Disable, 1 Min..15 Min.

Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode. The options are: Disable, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hour.

Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode. The options are: Disable, 1, 2, 4, 6, 8, 10, 20, 30, 40 Min, 1 Hour.

ACPI Suspend Type

This item allows you to select ACPI suspend types.
The options are: S1(POS), S3 (STR).

PM Control by APM

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

Video Off Option

This feature provides the selections of the video display power saving mode. The option Suspend - Off allows the video display to go blank if the system enters Suspend mode. The option All Modes - Off allows the video display to go blank if the system enters Doze mode or Suspend mode. The option Always On allows the video display to stay in Standby mode even when the system enters Doze or Suspend mode.
The options are: Suspend - Off, All Modes -> Off, Always On.

Video Off Method

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

MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem's IRQ#.
The options are: NA, 3, 4, 5, 7, 9, 10, 11.

Soft-Off by PWR-BTTN

The selection Delay 4 Sec. will allow the system shut down after 4 seconds after the power button is pressed. The selection Instant-Off will allow the system shut down immediately once the power button is pressed.
The settings are: Delay 4 Sec, Instant-Off.

State After Power Failure

The item allows you to select the state that your personal computer returns to after a power failure. If set at Off, the system will not boot after a power failure. If set On, the system will restart after power failure.
The settings are: Auto, On, Off.

VGA

When set at On, any VGA activity will awake the system.
The options are: OFF, ON.

LPT & COM

When LPT/COM is selected, any access of LPT and COM ports will awake the system. Likewise, either LPT or COM is chosen, the system will be awaken by any activity of LPT or COM port.
The options are: LPT/COM, LPT, COM, NONE.

HDD & FDD

When it is set at ON, any access happened at hard drives and floppy drives will awake the system.
The options are: OFF, ON.

PCI Master

To set this feature at ON activates that Power Management feautre (PM) wake-up event for the PCI bus master card.
The options are: OFF, ON.

PowerOn by PCI Card

When set at Enabled, any PCI-PM event awakes the system from a PCI-PM controlled state.
The options are Disabled, Enabled.

Wake Up On LAN/Ring

When set at Enabled, an input signal that comes from the other client/server of the network or from a modem ring can awake the system from a soft off state. The options are Disabled or Enabled.

Modem Ring Resume

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

RTC Alarm Resume

Enabled allows you to set the time the system will be turned on from the system power-off status. The options are: Enabled, Disabled.

Date (of Month)

This feature allows you to set the day of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled. The options are: 0, 1..31.

Resume Time (hh:mm:ss)

If an ATX power supply is installed and when RTC Alarm Resume is Enabled, this feature allows you to set the time of the alarm starts when the RTC Alarm Resume From Soft Off is set to be Enabled.

The options are: 7: 0: 0. hh (*hour*) - 0, 1, 2,.., 23; mm (*minute*) - 0, 1, 2,..,59; ss (*second*) - 0, 1, 2,..,59.

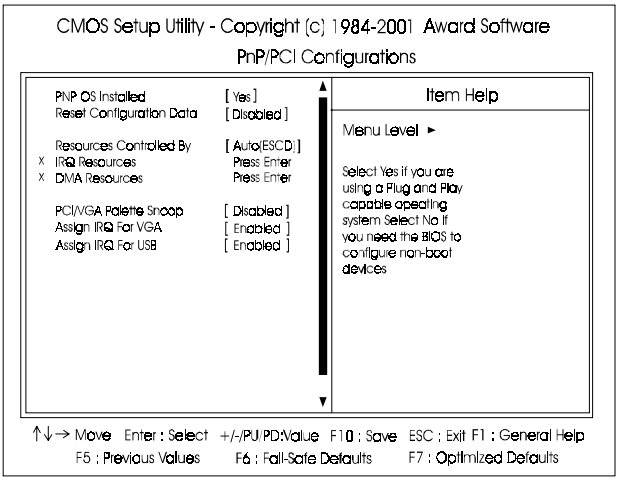
IRQs Activity Monitoring

After the time period which you set, the system advances from doze mode to suspend mode in which the CPU clock stops and the screen display is off. At this moment, if the IRQ activity occurs, the system goes back to full-on mode directly.

If the IRQ activity which is defined as Non Primary takes place, the system remains off until the corresponding IRQ handler finishes.

The options of IRQ 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 are: Enabled, Disabled.

PnP/PCI Configurations



PNP OS Installed

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

Reset Configuration Data

Enabling it to reset the system Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the operating system can not boot. The options are: Disabled, Enabled.

Resources Controlled By

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

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

PCI/VGA Palette Snoop

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

The options are: Disabled, Enabled.

Assign IRQ For VGA

If your PCI VGA card devices do not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

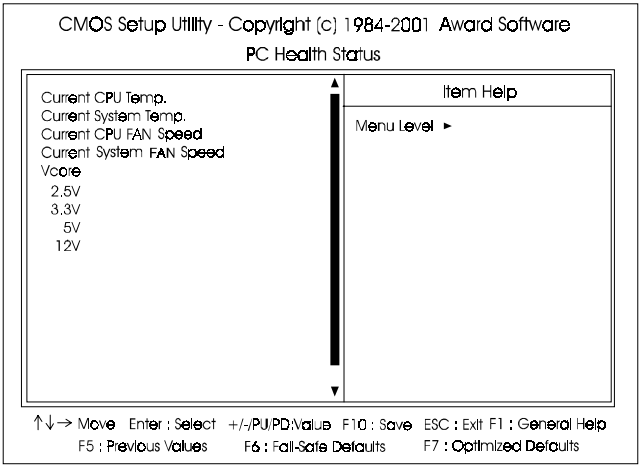
The options are: Enabled, Disabled.

Assign IRQ For USB

If your USB devices do not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

The options are: Enabled, Disabled.

PC Health Status

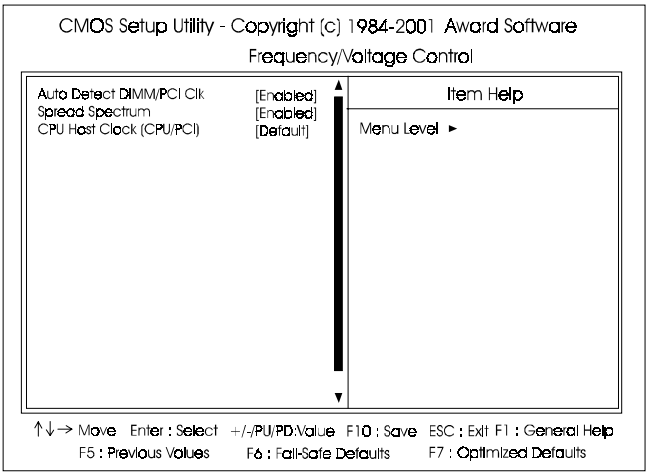


It allows you and technicians to monitor data provided by the BIOS on this mainboard. Some of them are not user-configurable.

Current CPU Temp. / Current System Temp. / Current CPU FAN Speed / Current System FAN Speed

These items allow end users and technicians to monitor data such as the current CPU temperature, CPU and case cooling fans rotating speed.

Frequency/Voltage Control



Auto Detect DIMM/PCI Clk

When enabled, BIOS will detect the PCI slot and DIMM slot. If no any device in, BIOS will auto disable its clock.
The options are: Enabled, Disabled.

Spread Spectrum

This feature is used to activate spread spectrum feature.
The options are: Disabled, Enabled.

CPU Host Clock (CPU/PCI)

This feature allows you to set the CPU/PCI clock frequency. The default setting, Default, will detect your CPU/PCI clock frequency automatically. If you set a unappropriate option which leads to a booting problem, keep pressing the Insert key until the display appears will solve it.
The option list offered all combinations that supported by this mainboard.

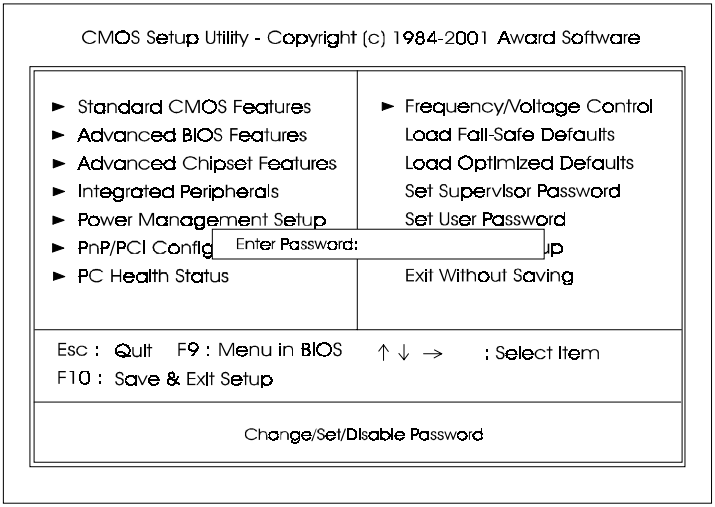
Load Fail-Safe Defaults

This submenu is selected to diagnose the problem after the computer boots, if the computer will not boot. These settings do not give optimal performance.

Load Optimized Defaults

This submenu is selected for default settings which provide the best system performance.

Supervisor/User Password



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

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

Save and Exit Setup

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

Exit without Saving

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications: **Quit Without Saving (Y/N)?**