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Chapter 1 Specification

Introduction

This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge VIA Apollo P4X400 plus South Bridge VT8235, by which the whole system performance can be upgraded to 533 MHz system bus.

The Intel P4 processor is a rapid execution engine providing 4X100/4X133MHz quadpumped system bus to allow 3.2GB data transfer rates possible, while VIA Apollo P4X400 plus VT8235 supports Intel P4 processor to implement the 4X133 Front Side Bus, AGP 8X external bus, the LPC Super I/O, the DDR SDRAM and UATA 133/100/66 data transfer rate. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

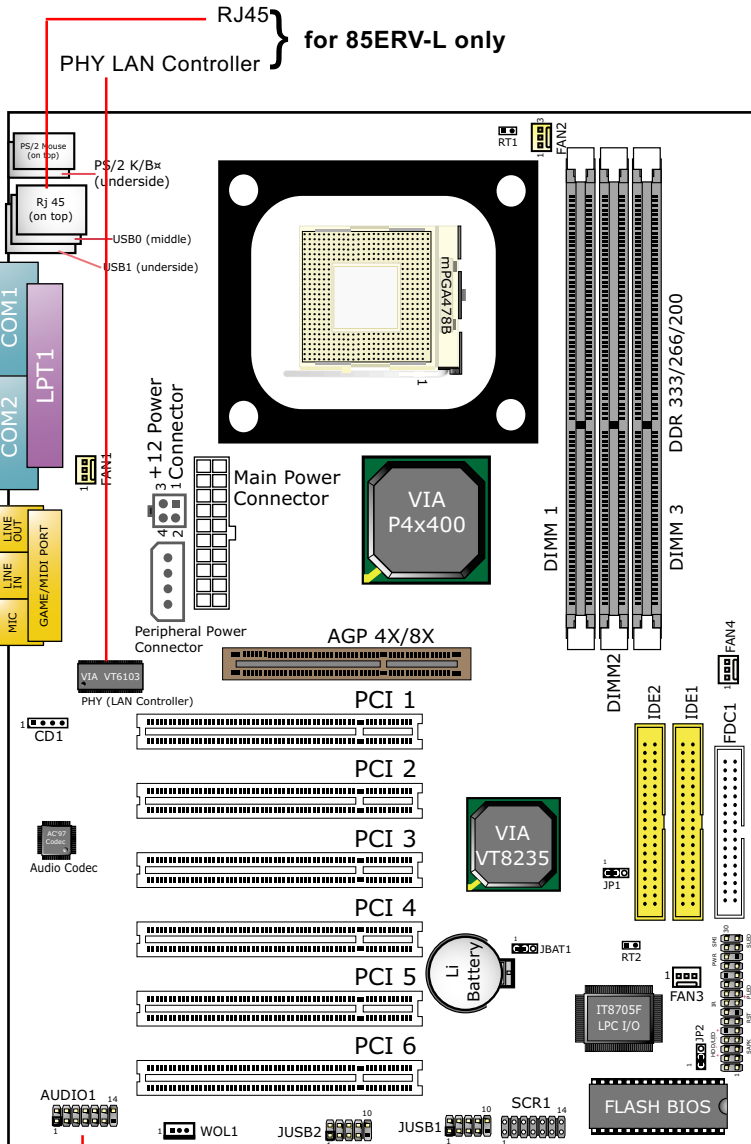
1-1 Mainboard Components Locations

1-2 Mainboard Specifications

1-3 Mainboard Specification Table

1-4 Chipset Diagram

1-1 85ERV / 85ERV-L Components and Options



Optional 6-channel Audio-Out Connector

1-2 Mainboard Specifications

1-2.1 CPU Socket

CPU Socket 478B on board, supporting Intel® Pentium 4 processors in 478-pin package for :

- 533/400MHz System Bus;
- Hyper-pipelined technology;
- Advanced dynamic execution;
- Advanced transfer cache;

1-2.2 System Chipsets

- North Bridge VIA P4X400 for managing and supporting 4X133/4X100MHz system Bus, DDR 333/266/200 SDRAM memory interface, Hub interface and AGP4X/8X interface.
- South Bridge VIA VT8235 working with North Bridge supporting the double speed V-Link, LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, LAN interface, USB V2.0 interface, as well as AC'97 Audio 6-channel interface.

1-2.3 Memory

3 DDR DIMM 184-pin slots on board for DDR 333/266/200 SDRAMs :

- Supporting unregistered, non-ECC DDR333/266/200 SDRAM up to 3 GBs
- Supporting installation of mixed volumes yet same type of DDR SDRAM modules

1-2.4 AMI BIOS

- Supporting Plug & Play V1.0
- Flash Memory for easy upgrade
- Supporting BIOS Writing Protection and Year 2000 compliant
- Supporting BIOS Setup (See Chapter 4 BIOS Setup)

1-2.5 Accelerated Graphics Port (AGP) Interface

AGP Controller embedded on board, supporting:

- 1.5V(4X/8X) power mode only, 1 AGP Slot supported
- 4x AD and SBA signaling, AGP pipelined split-transection longburst transfers up to 2GB/sec.
- AGP 4X/8X only, AGP v3.0 compliant

1-2.6 Advanced System Power Management:

- ACPI 1.0B compliant (Advanced Configuration and Power Interface)
- APM V1.2 compliant (Legacy Power Management)
- ACPI POS (Power On Suspend)
- PS/2 Keyboard & Mouse Power On
- Supporting Ring Power Up Control for Wake-on-Modem (external) and Wake-on-LAN (via Connector WOL1)
- Real Time Clock (RTC) with date alarm, month alarm, and century field

1-2.7 Multi-I/O Functions :

- PCI EIDE Controller, supporting:
 - 2x Ultra ATA133 / 100 / 66 IDE connectors supporting up to 4 IDE devices
- Dedicated IR Functions:
 - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
- Multi-mode parallel data transfer:
 - Standard mode, high speed mode ECP and enhanced mode EPP
- Floppy Disk connector:
 - One FDD connector supporting 2 floppy drives with drive swap support
- Universal Serial Bus Transfer Mode:
 - USB V2.0 compliant, 480 Mb/s USB Bus, supporting Win 2000 and later operating system; USB drivers provided in Support CD for installation
 - 2 built-in USB connectors and 2 USB pin-headers which require 2 optional USB cables to provide 4 more optional USB ports
- PS/2 Keyboard and PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
 - Two complete serial ports (COM1 & COM2) on board

1-2.8 Expansion Slots

- 6 PCI bus Master slots
- 1 AGP 4X/8X slot
- 3 DDR DIMM slots

1-2.9 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board

- Supporting up to 6 channels of PCM audio output
- 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Woofer for complete surround sound effect
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-2.10 LAN on board (85ERV-L only)

Fast Ethernet Controller integrated in VT8235 and PHY VIA VT6103:

- Supporting 10/100Mb Fast Ethernet Base T LAN
- Supporting Wake On LAN through on-board WOL1 connector
- LAN Driver enclosed in Support CD for user's installation.

1-2.11 Hardware Monitor on board

- Hardware Monitor integrated in Super I/O IT8705F, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software SmartGuardian for displaying Monitoring status is enclosed in Support CD for user's installation.

1-2.12 6-channel Sound Output Support (optional)

- This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

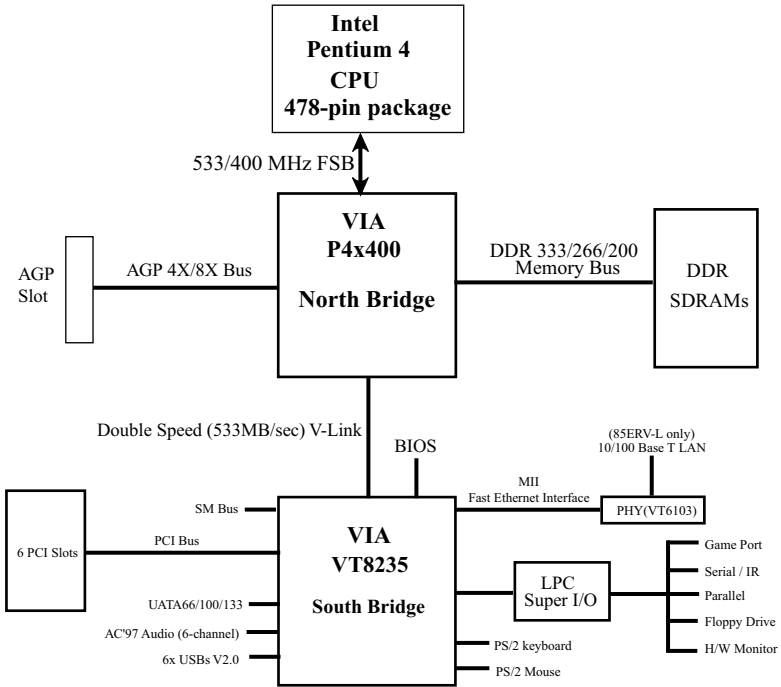
1-2.13 Form Factor

- ATX form factor, ATX power supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector and one Peripheral Power Connector
- Mainboard size: 305mm x 220mm

1-3 Mainboard Specification Table

SL-85ERV / 85ERV-L Specifications and Features	
CPU	Socket 478B for Intel Pentium 4 CPUs
North Bridge	VIA Apollo P4X400, supporting 533/400MHz FSB
South Bridge	VIA VT8235
BIOS	AwardBIOS
Memory	Supporting DDR 333/266/200 SDRM, up to 3GB in 3 DDR DIMM slots
I/O Chip	IT8705F
AGP interface	1.5V AGP4X/8X mode only
Audio	AC'97 Audio V2.2 compliant, 6-channel interface
IDE Interface	2 UATA 66/100/133 IDE ports
Networking	VIA LAN Controller, 1xRj45 (85ERV-L only)
PCI Slots	6 PCI Master slots on board
I/O Connectors	6xUSB ports (V2.0), 1xFDD port, 2xCOM ports, 1xLPT, 1xIrDA, 1xPS/2 K/B, 1xPS/2 Mouse,
VGA Display	VGA not integrated on board
Other Features	BIOS Writing Protection; Hardware Monitoring in IT8705F keyboard Power On; ATX 2.03 Power Supply; ATX form factor

1-4 Chipset System Block Diagram



Intel Pentium 4 + VIA P4X400 + VIA VT8235 Diagram

Chapter 2 Hardware Setup

To Get things ready for hardware setup !

1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heatsink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heatsink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User Manual for proper setup. Incorrect setting will cause damage to your CPU.

The following topics are included in this chapter:

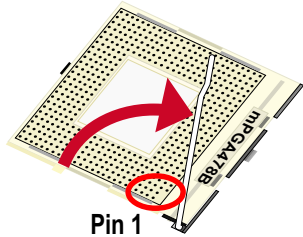
- 2-1 Pentium 4 CPU Installation**
- 2-2 Pentium 4 CPU Fan Installation**
- 2-3 Memory Installation with Warning LED**
- 2-4 AGP4X/8X Slot Installation**
- 2-5 IDE Connector Installation**
- 2-6 Floppy Drive Connector (FDC) Installation**
- 2-7 ATX 2.03 Power Supply Installation**
- 2-8 Jumper Settings**
- 2-9 Other Connectors Configuration**
- 2-10 IRQ Description**

2-1 CPU Installation with Socket 478B

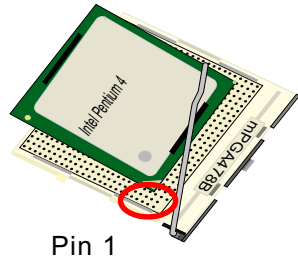
This series is built with CPU Socket 478B (478-pin) supporting the Intel Pentium 4 CPU:

- Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478.
- After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.

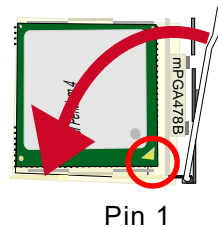
1. First pull sideways the lever of Socket 478, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins get into the socket with ease.

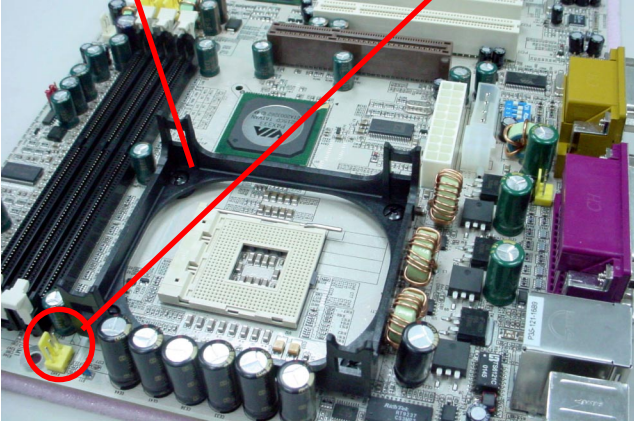


3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.

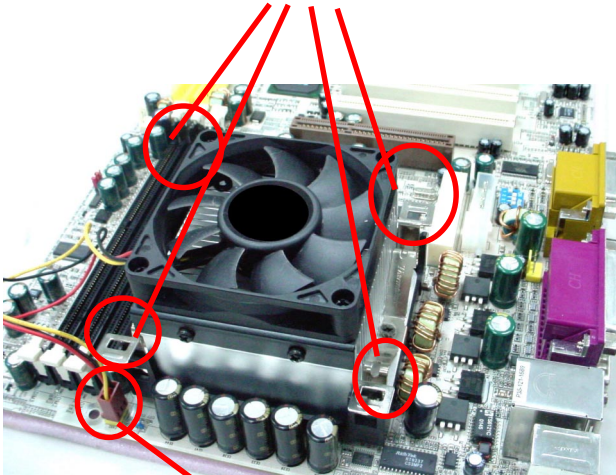


2-2 Pentium 4 CPU Fan Installation

Pentium 4 Fanbase CPU Fan Connector



Press down 4 corners to lock fan to fanbase



Connect Fan Connector to CPU FAN connector

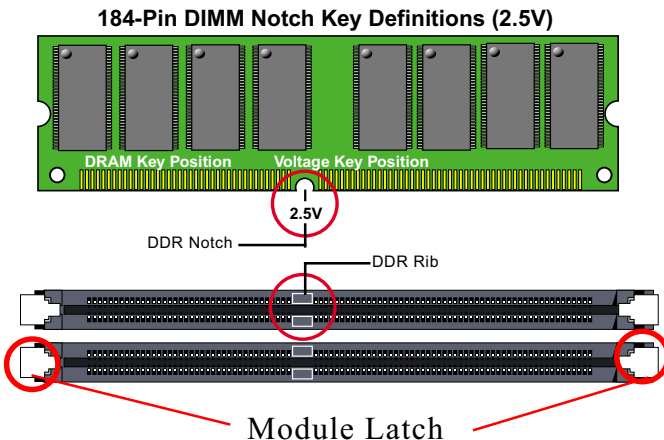
2-3 Memory Installation with Warning LED

How to tackle with the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module. Failure to do so may cause severe damage to both your mainboard and the memory module.
- Pay attention to the orientation of the DIMM slots. Forcing a DIMM into a slot improperly will damage the memory module and slot itself.
- Make sure you have the right type of memory module for your mainboard.

2-3.1 To Install DDR SDRAM Module for this series

- This series supports up to 3GB unbuffered DDR 333/266/200 SDRAM, with 3 DDR DIMM slots on board. Do not insert other type of modules into these slots.
- DDR DIMM slot has 184-pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching. Press the Module down in a gradual way until it surely reaches the bottom and clicks straight up the two latches on the left and right of the slot. If any one of the latches has not turned up completely, you should unplug the module and press it down a bit more firmly.



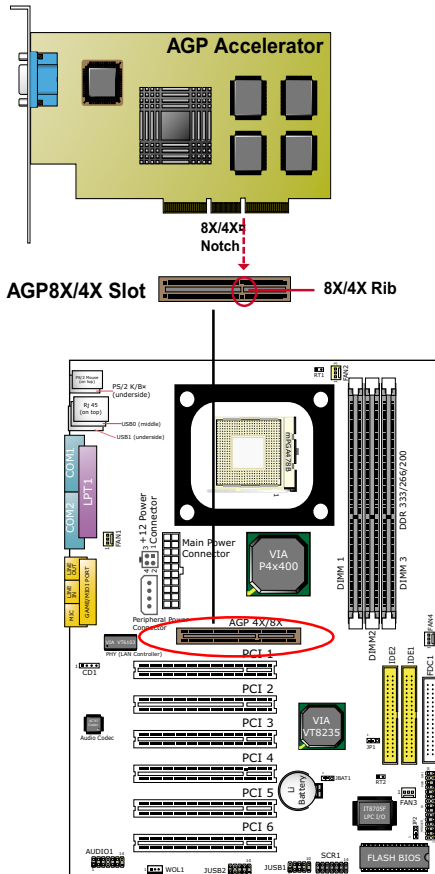
2-3.2 To Remove a DIMM

Press down the holding latches on both sides of slot to release the module from the DIMM slot.

2-4 AGP 4X/8X Slot Installation

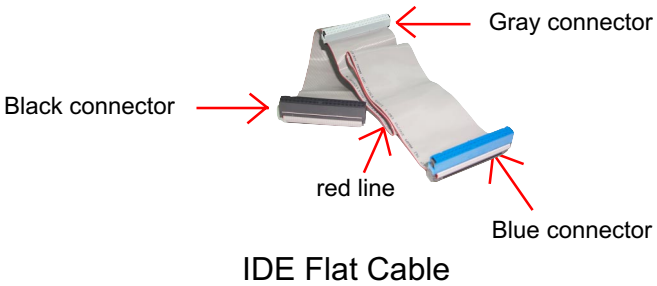
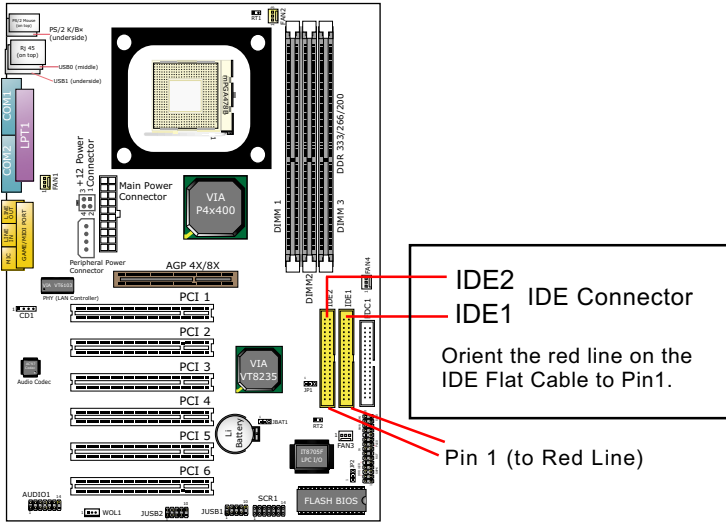
The AGP slot on board supports 1.5V AGP4X/8X card only. A Rib is specifically added to the 4X/8X AGP slot so as to match the AGP 4X/8X card. To insert a 3.3V AGP 2X card into the AGP 4X slot will damage the system chip and burn the 1.5V circuitry.

An AGP 4X card will support a data transfer rate up to 1GB/sec., while an AGP 8X card will do up to 2GB/sec.



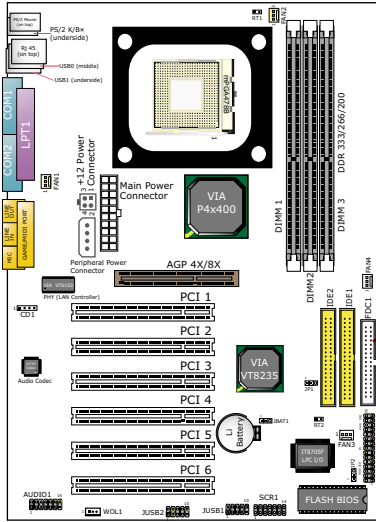
2-5 IDE Connector Installation

To install IDE Connector, you may connect the blue connector of IDE cable to the primary (IDE1) or secondary(IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.



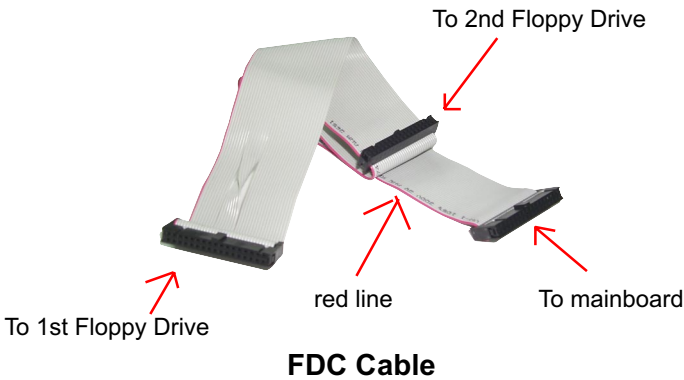
2-6 Floppy Drive Connector (FDC) Installation

To install FDC (Floppy Drive Connector), you should connect the end of FDC cable with single connector to the board , and connect the other end with two connectors to the floppy drives.

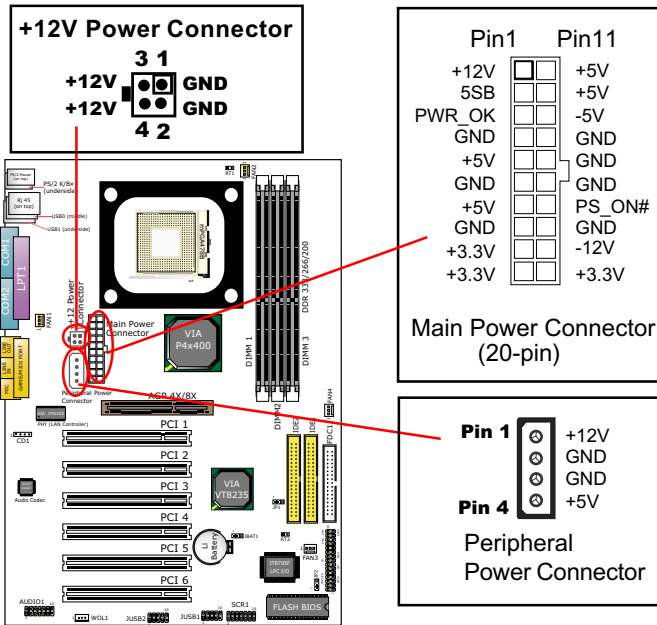


Floppy Drive Connector:
FDC
Orient the red line of the
Floppy Flat Cable to Pin 1.

Pin 1 (to Red Line)



2-7 ATX V 2.03 Power Supply Installation



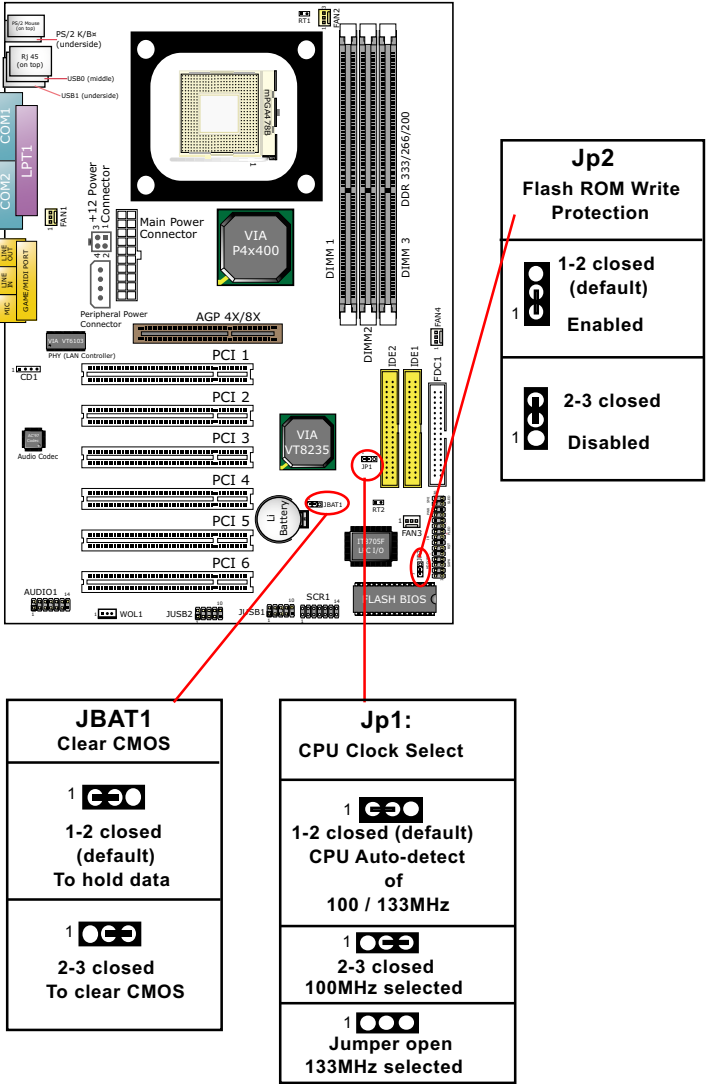
ATX V2.03 power supply is strongly recommended for mainboard running with 2GMHz or higher CPU.

To set up Power Supply on this series:

1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supply which can be either of the latest version 2.03 or of earlier ATX format.
2. If you use an ATX Power Supply Version 2.03 or later, you can now connect the on-board square-shaped +12V Connector to the square-shaped +12V Connector of your ATX Power Supply. In this case, it is not necessary for you to connect the on-board 4-pin Peripheral Power Connector to your Power Supply.
3. If you use an ATX power Supply of an older version than V2.03, you cannot find a square-shaped +12V Connector with your Power Supply; you must then connect the on-board 4-pin Peripheral Power Connector to the 4-pin Peripheral Power Connector of your Power Supply.


2-8 Jumper Settings

The following diagrams show the locations and settings of jumper blocks on the mainboard.

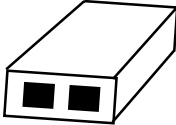


How to tackle the Jumpers:

A 3-pin Jumper



If a pin-header (of 2 or more pins) is designed in such a way that its pins can be closed or linked together to set up a specific function, this header is called a jumper in this manual.



A 2-pin Jumper cap to link two header-pins together.

- A Jumper is usually but not necessarily given a “JpX legend.
- In the Jumper setting diagram, all jumper pins covered with black marks stand for closed pins by jumper caps.



**Jumper with
Pin 2-3 closed**



**Jumper with
all pins open**






**Jumper with
Pin 1-2 closed**

- Do not remove the jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, mainboard could be damaged.

2-8.1 Jp1: CPU Clock/Overclock Select

Jp1 designed on board for CPU clock select and 100MHz CPU overclocking. With Jp1, user can choose the way for a 100MHz CPU to run an overclock on board.

1. If Jp1 is set to 1-2 closed, the auto-detect mode will recognize the CPU clock automatically and send the signal to system chips. No overclocking will be implemented in this case. That is, a 100MHz CPU will boot system with 100MHz CPU clock and provide 4X100 MHz system bus. A 133MHz CPU will boot system with 133MHz and provide a 4X133 MHz system bus.
2. If Jp1 is set to 2-3 closed, CPU is set at 100MHz, indicating that 133MHz overclock is not desired. The CPU will boot system with 100MHz even if a 133MHz CPU is used.
3. If Jp1 is set to 1-2-3 all open, CPU is set at 133MHz, indicating that 133MHz overclock is desired. The CPU will try to boot system with 133MHz even if a 100MHz CPU is used.

Jp1: CPU Clock Select
 1-2 closed (default) CPU Auto-detect of 100 / 133MHz
 2-3 closed 100MHz selected
 Jumper open 133MHz selected

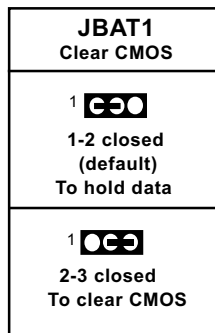
Note on CPU Overclocking:

1. If you have successfully booted system with or without CPU overclock, you still can do another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose "Frequency/Voltage Control" menu, and take the "Use Linear" option of the "Use CPU Linear Frequency". Then configure the "CPU Clock" item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 as stated below and then restart your system. And remember reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the case and simultaneously press down the "Insert" key of the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup and choose "Load Optimized Defaults" to restore default BIOS .

2-8.2 JBAT1: Clear CMOS

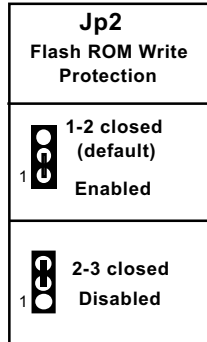
When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

1. Power off system;
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, return the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default. Remember never clear CMOS when system power is on.



2-8.3 Jp2: Flash ROM Write Protection

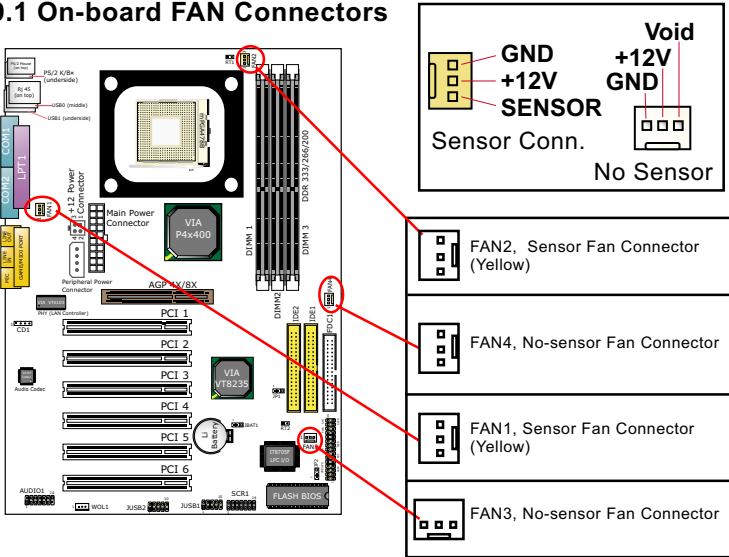
Jp2 is designed to support the “Flash ROM write Protection” function when you boot your system. Setting Jp2 1-2 closed will protect your Flash ROM from virus attack every time you boot your system.



2-9 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

2-9.1 On-board FAN Connectors

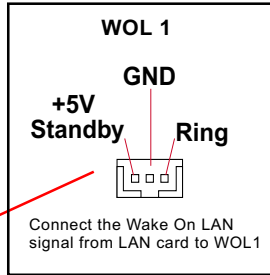
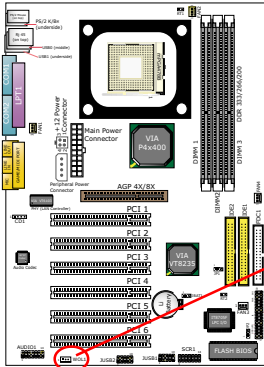


Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. When connecting the wire to any Fan Connector, user should make sure that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. A Hardware Monitor chipset is on board, with which user can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, user can read the fan speed from the “Hardware Monitor Status” in CMOS BIOS.

A running fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it with the monitoring program.

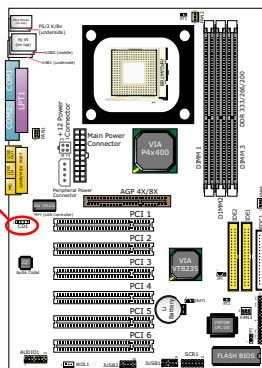
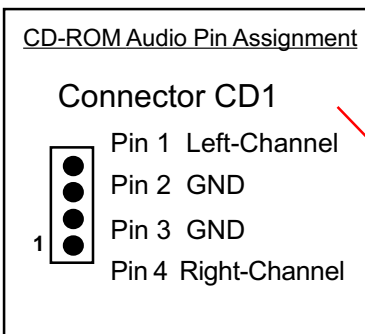
2-9.2 Connector WOL1: Wake On LAN

1. This connector connects to a LAN card with a Ring signal output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.
2. This feature requires that Resume On Ring feature is enabled in the BIOS setting "Power Management Setup" and that your system must be on ATX power supply with at least 720mA / +5V standby power.



2-9.3 CD-ROM Audio Connector (CD1)

CD-In1 is audio connector connecting CD-ROM audio to mainboard.

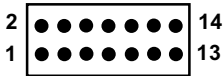
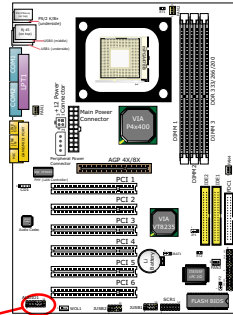


2-9.4 Audio 1: 6-channel Sound Output Connector (optional)

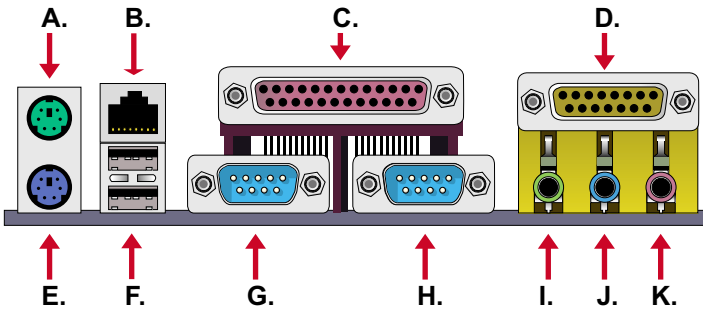
This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

6-channel Audio-out Pin Assignment

Pin 1 LFE-out	Pin 2 Gnd
Pin 3 Center-out	Pin 4 Gnd
Pin 5 Surround-out-R	Pin 6 Gnd
Pin 7 Surround-out-L	Pin 8 Gnd
Pin 9 Jack-detect	Pin10 (Void)
Pin11 SPDIFI	Pin12 Gnd
Pin13 SPDIFO	Pin14 Gnd



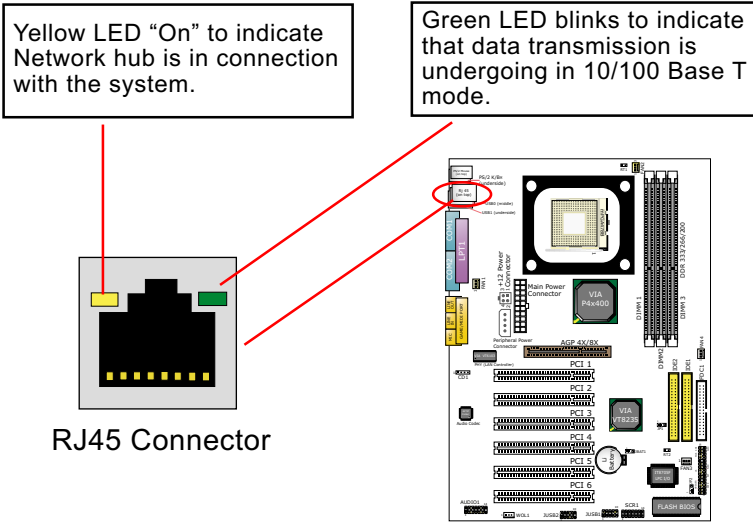
2-9.5 Chassis Panel Connectors



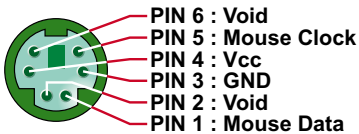
- | | |
|-------------------------|---|
| A : PS/2 MOUSE PORT | H : COM2 PORT |
| B : Rj45 (85ERV-L only) | I : LINE Out / Front SPEAKER OUT |
| C : LPT1 PORT | J : LINE IN / Rear Speaker In |
| D : GAME/MIDI PORT | K : MICROPHONE INPUT / Center Subwoofer Out |
| E : PS/2 KEYBOARD PORT | |
| F : USB 1 PORT (Bottom) | |
| F : USB 0 (Middle) | |
| G : COM1 PORT | |

2-9.6 RJ45: LAN Connector (85ERV-L only)

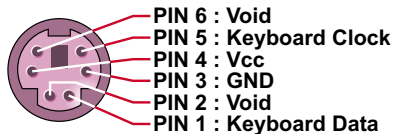
One RJ45 connector is on board for network connection.



2-9.7 PS/2 Mouse And PS/2 Keyboard

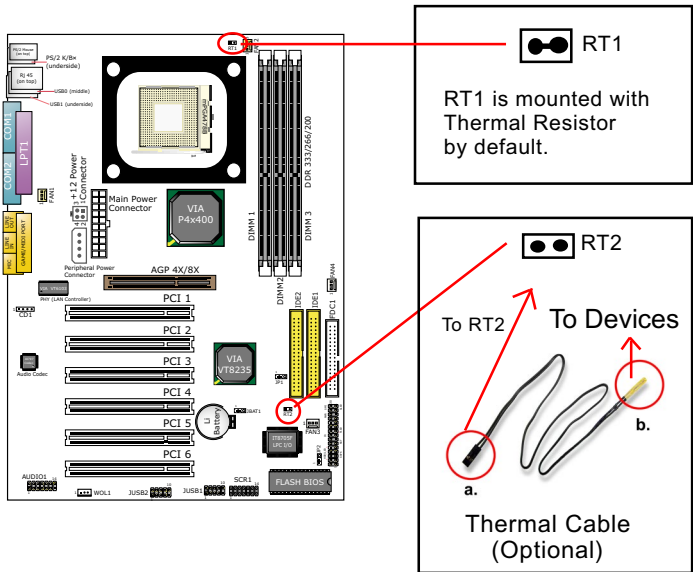


PS/2 MOUSE



PS/2 KEYBOARD

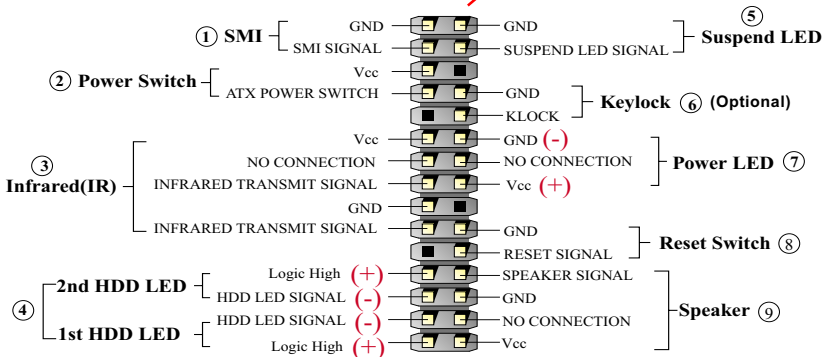
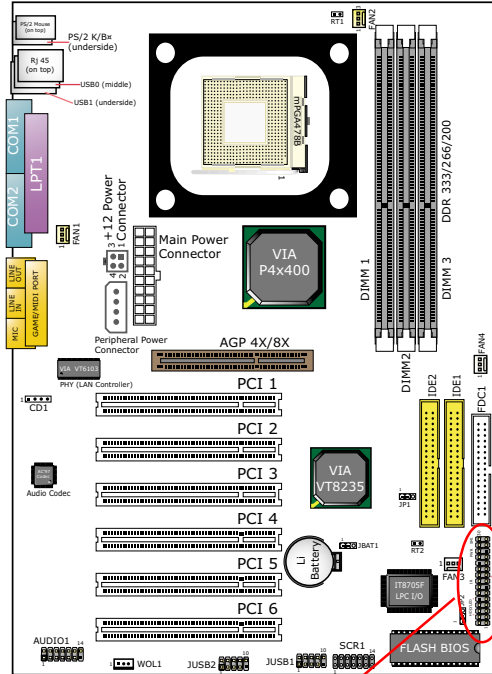
2-9.8 Thermal Sensor Connectors RT1 and RT2



1. Connector RT1: A thermal resistor is mounted by default to connector RT1 so as to detect the temperature of the CPU. What RT1 does is to transmit the thermal signal to BIOS or Hardware Monitor.
2. Connector RT2: A thermal cable is needed to connect RT2 to on-board devices such as HDD, Graphics card etc., so as to detect the temperature generated therein. Please connect the end (a) of the thermal cable to RT2, and tape another end (b) of thermal cable on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware Monitor utility.**

2-9.9 Complex Pin-header

This complex Pin-header consists of the following connectors for various supports:



(1) SMI Connector (Optional):

Connection: Connected to the case-mounted Suspend Switch.

Function: Manually selecting system into the Suspend Mode or “Green Mode” by System management interrupt.

(2) Power Switch Connector:

Connection: Connected to a momentary button or switch.

Function: Manually switching the system between “On” and “Soft Off”. Pressing the momentary button for more than 4 seconds will also turn the system off.

(3) IR Connector (Infrared Connector):

Connection: Connected to external IR device (transceiver).

Function: Supporting wireless transmitting and receiving module on board.

(4) 1st HDD LED Connector/2nd HDD LED Connector:

Connection: Connected to HDD LED.

Function: To supply power to HDD LED.

(5) Suspend LED Connector:

Connection: Connected to Suspend Indicator.

Function: To supply power to “Suspend Indicator”.

(6) keylock Connector (Optional):

Connection: Connected to keyboard.

Function: To lock keyboard and disable keyboard function.

(7) Power LED Connector:

Connection: Connected to System Power LED.

Function: To supply power to “System Power LED”.

(8) Reset Switch Connector:

Connection: Connected to case-mounted “Reset Switch”.

Function: To supply power to “Reset Switch” and support system reboot function.

(9) Speaker Connector:

Connection: Connected to the case-mounted Speaker.

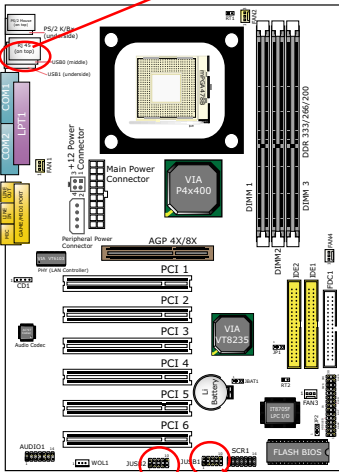
Function: To supply power to the case-mounted Speaker.

2-9.10 USB Ports and USB Pin Headers

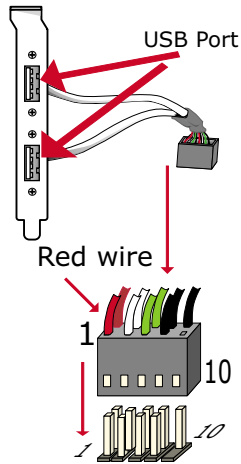
This series provides two USB ports USB0 and USB1 on board supporting various USB devices. In addition, pin headers JUSB1 and JUSB2 are added on board to provide expansion of 4 more optional USB ports by using two additional USB Cables. User can order the optional USB cables from your mainboard dealer or vender.

When plugging the USB cable to USB Header , user should make sure the red wire is connected to Pin 1.

USB Ports USB 0 & 1(underside)



USB Cable (Optional)



Pin Header JUSB2 / JUSB1

2-10 IRQ Description

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5	Free	13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9	Free	4
IRQ 10	Free	5
IRQ 11	Free	6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as “Legacy” ISA card, requires you to configure the card’s jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the **Control Panel** in *My Computer*, contains a **System** icon, which gives you a **Device Manager** tab. Double-Clicking on a specific hardware device gives you a **Resources** tab which shows the Interrupt number and address. Double-Clicking **Computers** to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device share IRQ with any other device, your computer will easily get into trouble.

Chapter 3 Software Setup

Drivers, Utilities and Software Installation

Support CD:

This mainboard will be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

Contents of Support CD:

For this mainboard, user will be able to find in the Support CD the following drivers and utilities:

1. VIA 4-in-1 Drivers
2. AC'97 Audio Drivers
3. VIA USB 2.0 Drivers
4. Hardware Monitor Utility
5. Other drivers (including VIA6183 LAN drivers)

This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME , Windows 2000 and Windows XP. The installation procedures for all these operating systems are programmed into an auto-run mode. What users have to do is read and follow the pop-up instructions. We therefore take the installation on Windows 98 as the general illustration hereby.

The priority of driver installation should also be noted. Users are recommended to take the following installation order:

3-1 Open Support CD and choose your drivers

3-2 VIA 4-in-1 Drivers Installation

3-3 AC'97 Audio Drivers Installation

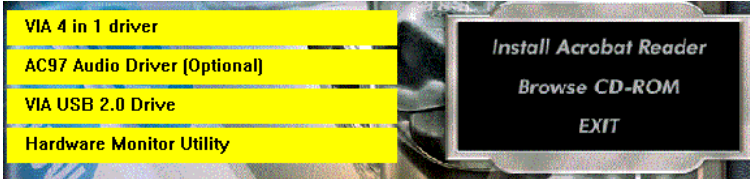
3-4 USB 2.0 Drivers Installation

3-5 Hardware Monitor Utility Installation

3-6 VIA6183 LAN Drivers Installation

3-1 Open Up Support CD:

1. Please put the Support CD enclosed in your mainboard package into the CD-ROM drive. In a few seconds, the Main Menu will automatically appear, displaying the contents to be installed for this series:



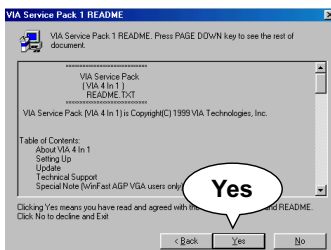
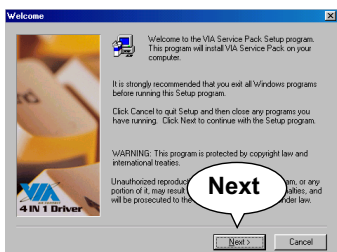
2. In case your system does not open the Support CD automatically, please click to the following path to enter the Main Installation Menu:
D:\Autorun.exe (assuming that your CD-ROM Drive is Drive D)
3. Users are recommended to install all the drivers and utilities at a time, though they can be installed separately. Also, we should take "VIA 4-in-1 Drivers" as first installation priority to optimize the VIA system. From next section, we provide detailed descriptions of all these installations with graphical illustrations.

3-2 Proceed to VIA 4-IN-1 Drivers Installation

1. Following the procedures of opening the Support CD, click to “VIA 4-in-1 Drivers” to proceed.

2. The VIA Service Pack InstallShield Wizard will pop up to guide you to the VIA Service pack installation. Click “Next” button to continue.

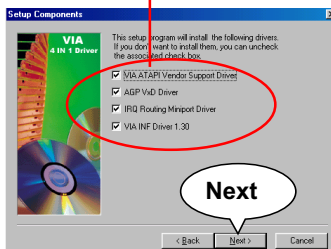
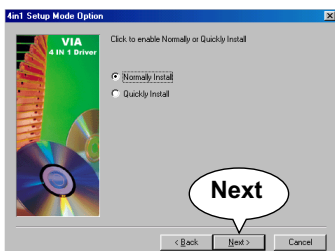
3. “VIA Service Pack README” screen will appear, please click the “Yes” button to agree with the Licence Agreement and continue.



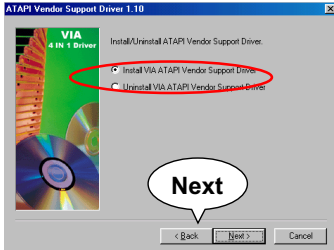
4. On the screen below, check “Normally Install” and click “Next” to continue. (If you check “Quickly Install”, you will skip the detailed procedures of the VIA 4-in-1 Setup.)

5. Select the checkbox as below and click “Next” to continue:

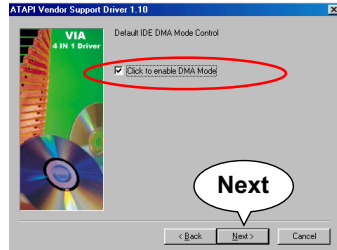
- VIA ATAPI Vendor Support Driver
- AGP VxD Driver
- IRQ Routing Miniport Driver
- VIA Chipset Function's Registry



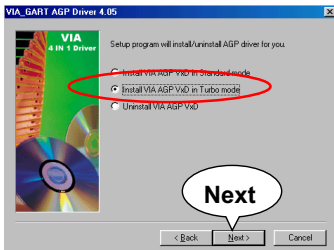
6. Select “Install VIA ATAPI Vendor Support Driver” checkbox, then click the “Next” button to continue.



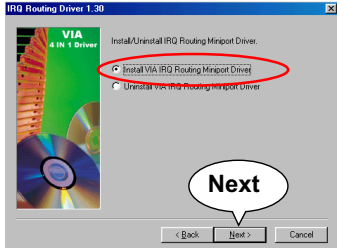
7. Click on “Click to enable DMA Mode” checkbox to enable DMA function, then click the “Next” button to continue.



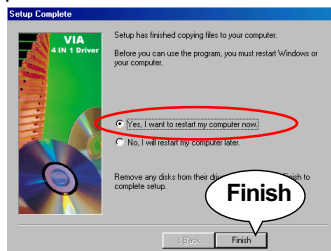
8. Select “Install VIA AGP VxD” in turbo mode and press “Next” button to continue.



9. Select “Install VIA IRQ Routing Miniport Driver” checkbox, then click the “Next” button to continue.



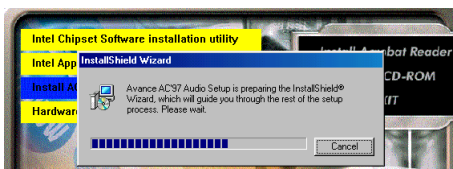
10. After all these setup procedures have finished, you should restart your computer by clicking on “Finish” so as to put VIA 4-in-1 drivers into effect and proceed to second driver installation.



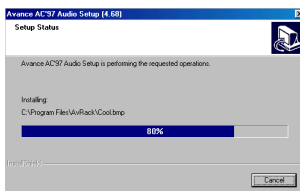
3-3 AC'97 Audio Driver Installation

Avance AC97 Audio Codec on board, AC'97 2.2 compatible stereo audio code for PC multimedia systems. Avance AC'97 Audio Codec Driver is provided in Support CD for user's installation.

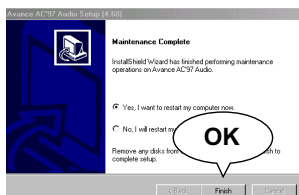
1. Following the procedures of opening the Support CD, click to " AC'97 Audio Driver" to proceed.
2. Instantly, the "installShield Wizard" screen appears to guide you through the "Avance AC'97 Audio Setup".



3. Instantly, the Setup program proceeds to install the softwares which include AC'97 driver and AVRack. (If you want to stop setup, click the "Cancel" button.)



4. After the setup process is finished, please check the radial button "Yes, I want to restart my computer now." and click "OK" to restart your system.



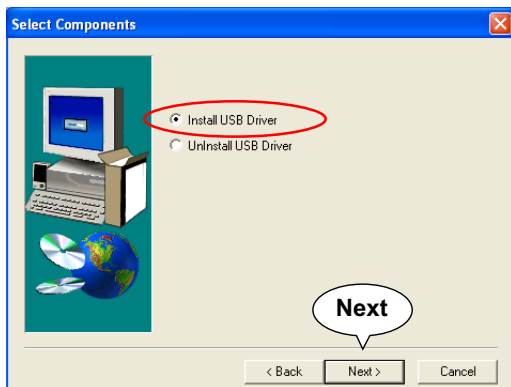
3-4 Install USB 2.0 Driver for Win98 / Me / 2000 / XP

VIA USB V2,0 is already integrated on board. Its 480Mb/s transfer rate supports operating system Win98/Me/2000/XP. USB Driver installation procedures are of similar steps in these systems. Please take the following illustrations from Win XP as the USB driver installation guide:

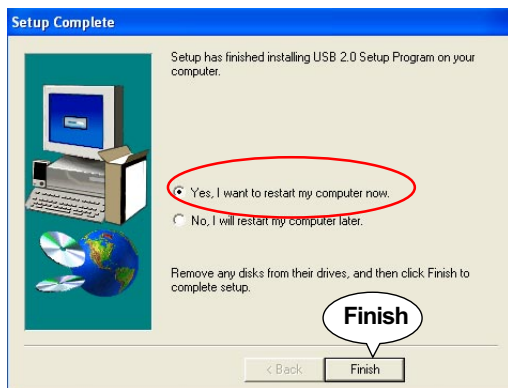
1. Following the procedures of opening the Support CD, click to “Motherboard Drivers” and then choose “VIA USB 2.0 Driver” to proceed. Please notice that the USB card driver is different from the USB 2.0 driver typically for the on-board USB. Do not use the USB card driver here.
2. Instantly the “USB 2.0 Setup Program” will pop up on screen. Click “Next” to continue.



3. Instantly, next screen will pop up to prompt you to select component. Select "Install USB Driver" and click "Next" button to continue.



4. The USB 2.0 Setup Program will then guide you through the whole driver setup until the "Finish" screen appears to prompt you to restart your system. Please click "Finish" button to restart system to put the new driver into effect.



3-5 Install Hardware Monitor Utility

3-5.1 Installation

Hardware Monitor is built in chip IT8705F of this series. Its installation is programmed to a fully automated mode on Windows 9X/Me/NT4/2000/XP. User can follow the model installation below for its installation on various Windows System.

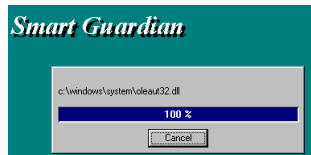
1. Following the procedures of opening the Support CD, click to “Hardware Monitor Utility” to proceed.
2. Instantly the “Smart Guardian Setup” screen appears to announce the setup of Hardware Monitor software “Smart Guardian”.

3. Next, the Setup Program will suggest to you the destination directory where the “Smart Guardian” will be installed. Select the Program folder and click “Next” to continue.

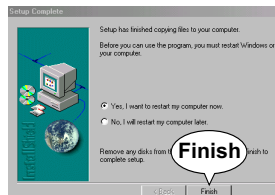


Next

4. Instantly, Setup Program starts to copy files and install the software.

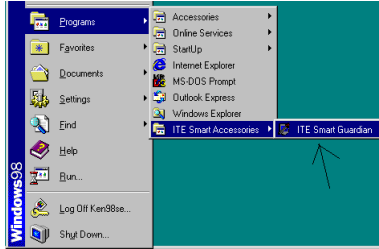


4. In one or two second, the “Setup complete” screen appears. Click “Finish” to restart your computer so that the Utility can be put into effect.

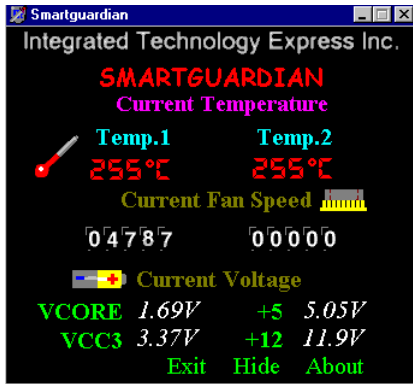


3-5.2 Verification

1. After restarting your computer, click “Start” and choose the path \Programs \ITE Smart Accessories\ITE Smart Guardian to open the main window of the Hardware Doctor.



2. Instantly, the Smartguardian Main Panel appears, telling you the CPU current temperature, CPU current Voltage and Current fan speed.

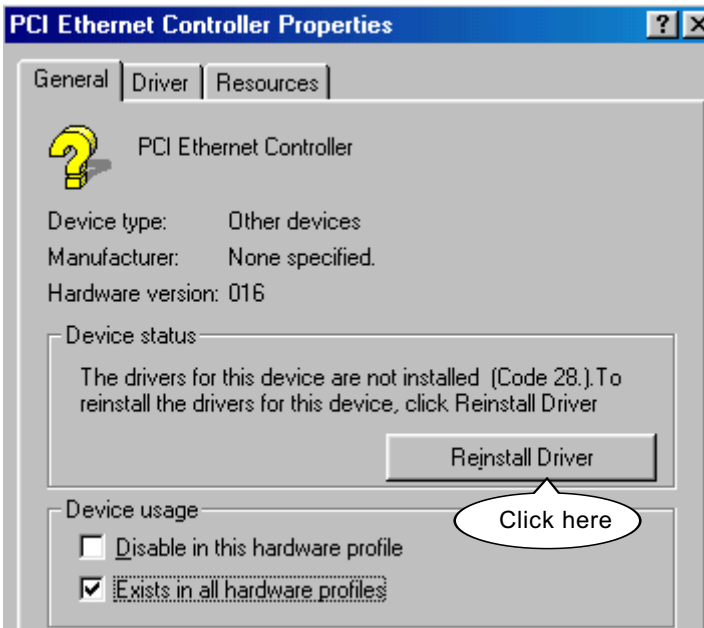


3-6 Install VIA LAN Drivers (for 85ERV-L only)

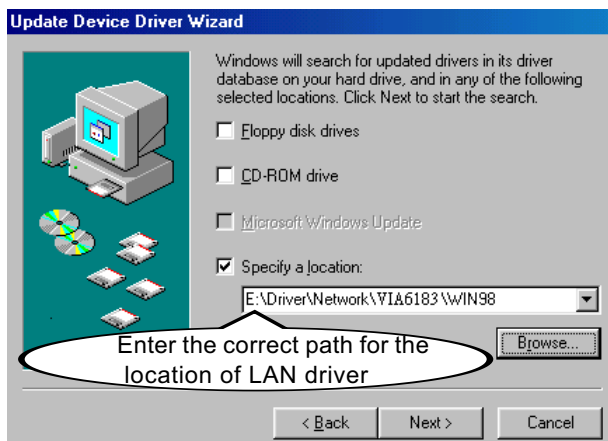
3-6-1. VIA6183 LAN driver on Windows 9X

The LAN driver contained in the Support CD is not included in the Autorun Menu. To install VIA LAN driver on Windows 9X, please follow the steps shown below:

1. On the “Start” screen of your system, please click to the following path:
My Computer\properties\Device manager
2. In the “Device manager” screen, you can see the item “ PCI Ethernet Controller” with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for the on-board LAN Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).
3. Instantly, the “PCI Ethernet Controller Properties” screen shows up. Please click the “General” bar to continue.
4. In the “General” screen, click “reinstall Driver” button to continue. Please note that the status of “Device Usage” should stay at “Exists in all hardware profiles”.



5. In the “Update device Driver Wizard” screen, click “Next” to continue until you see a dialog box asking you to “Specify a location” for the driver. You should **now** insert the Support CD into your CD-ROM.
6. As illustrated in the picture below, check the item “Specify a location” and click the “Browse” button to find out the correct path for the driver. Supposing your CD-ROM drive is Drive E, please type: E:\Driver\Network\VIA6183 into the blank bar. (If you are installing on Win 95OSR2, you should type W95OSR2 instead of Win98.) Then click the “Next” button to continue.



7. The Update Device Driver Wizard will then go on installing the driver, until the “Insert Disk” dialog box shows up. Please withdraw your Support CD and insert the Win 98 CD-ROM into the CD-ROM drive for updating system and click “OK” to continue.
8. The Update Device Driver Wizard will then proceed to update the system with the LAN driver. When the “Finish” screen shows up, click “Finish” to continue.
9. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click “Yes” to restart system and finish the LAN driver installation.

3-6-2. VIA6183 LAN driver on Windows NT4.0

1. When you newly install Win NT4, the Setup program will ask you whether your computer will participate on a network. please check "Do not connect this computer to a network at this time" and continue with your installation. That means, you are going to install the LAN Adapter and driver after you have finished system installation. By this way, you will set up your LAN Adapter and driver more surely.
2. If you have now installed Win NT4 in your computer, please boot your system and in the "Start" screen click the following path to install your computer networking:
 \Start\Settings\Control Panel\Network (double click)
3. Instantly, a dialog box pops up, asking you, "Windows NT Networking is not installed. Do you want to install it now?" Please click "Yes" to continue.
4. The Network Setup Wizard will then proceed to guide you to the installation of LAN Adapter and Driver, until the "Select Network Adapter" screen pops up, on which you should click "Have Disk" to install the on-board VIA LAN Controller.
5. Instantly, the "Insert Disk" dialog box pops up. You should **now** insert the Support CD into your CD-ROM drive, and then type to the white bar the correct path for the location of the LAN driver. Supposing your CD-ROM drive is drive D, please type the following path:
 D:\Driver\Network\VIA6183\Winnt4 and click "OK" button to continue.
6. Instantly, the Setup program detects the "VIA PCI 10/100MbFast Ethernet Adapter" and shows it on the "Select OEM Option" screen. Please click "OK" to continue.
7. The Setup program will then proceed to install the VIA PCI LAN Adapter and then other networking components such as TCP/IP protocol.
8. During the setup process, if "windows NT Setup" needs to copy some Windows files, you should then withdraw the Support CD and insert back the Win NT4 CD-ROM into your CD-ROM drive to continue.
9. After you have finished other networking components setup, you should restart your syystem to put all the new setups into effect.

10. To verify that the onboard VIA LAN Controller has been set up in system, please click “Start”, then “Control Panel”, then “Network”.
11. In the “Network” screen, click the “Adapter” bar. You can now see the “VIA PCI 10/100Mb Fast Ethernet Adapter is already installed in system.

3-6-3. VIA6183 LAN driver on Win ME / 2000 / XP

1. When you newly install Windows ME , Windows 2000or windows XP, the system will detect the LAN Controller on board and configure it automatically into system. Therefore, user needs not bother to install the LAN controller into these operating systems.
2. To verify the existence of VIA6183 LAN Controller and Driver, please enter the “Control Panel” of your system and click “Network” to open the “Configuration” screen. You can then see the “VIA PCI 10/100MbFast Ethernet Adapter” is already installed in system.

Chapter 4 AMI BIOS Setup

THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory (ROM) chip. Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

This Chapter includes the following topics :

4-1 About BIOS Setup

4-2 To Run BIOS Setup

4-3 About CMOS

4-4 The POST (Power On Self Test)

4-5 To Update BIOS

4-6 BIOS Setup

4-1 About BIOS Setup

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

4-2 To Run BIOS Setup

First access BIOS setup menu by pressing < DEL > key after "POST" is complete (before OS is loaded). BIOS will then display the following message:

```
DEL: SETUP
```

4-3 About CMOS

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and check and configure the BIOS Setup for the new start.

4-4 The POST (Power On Self Test)

POST is an acronym for Power On Self Test. This program will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

4-5 To Update BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Update Utility can also be run from a hard disk drive or a network drive.
- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (AMIXXX.EXE) to a bootable floppy disk so that you can reinstall the BIOS when in need.
- Normally, to update BIOS is unnecessary if the system is working fine. Users should only update BIOS when incompatible problems are encountered or new features have to be added to system.
- “AMIFLASH.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in ***DOS environment, the utility can not be executed in win95/98, ME, NT WINDOWS 2000 or Windows XP environment.***

• **Please follow the steps below for updating the system BIOS:**

Step 1. Please visit the board maker’s website, download latest BIOS file and AMI update utility. The file name of AMI update utility will be “AMIXXX.EXE” of which “XXX” stands for the version number of the file. The BIOS file format will be *.ROM, of which “*” stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and AMI flash utility “AMIXXX.EXE” into the diskette.

Step 3. Insert the diskette into drive A, boot your system from the diskette.

Step 4. Under “ A “ prompt, type “ **AMIXXX.EXE *.ROM** “ and then press <Enter> to run BIOS update program. Please note that there should be a space between AMIXXX.EXE and *.ROM. (*.ROM depends on your mainboard model and version code. Instead of typing “*“, you should type the specific file name for your specific mainboard).

Step 5. When the message “Flash ROM Update Completed - Pass.” appears, please restart your system.

Step 6. You will see a message “CMOS Memory Size Wrong” during booting the system. Press or <F1> to run CMOS setup utility, then reload “LOAD SETUP DEFAULTS” or “**Load Optimal Defaults**” and save this change.

4-6 BIOS SETUP --- CMOS Setup Utility

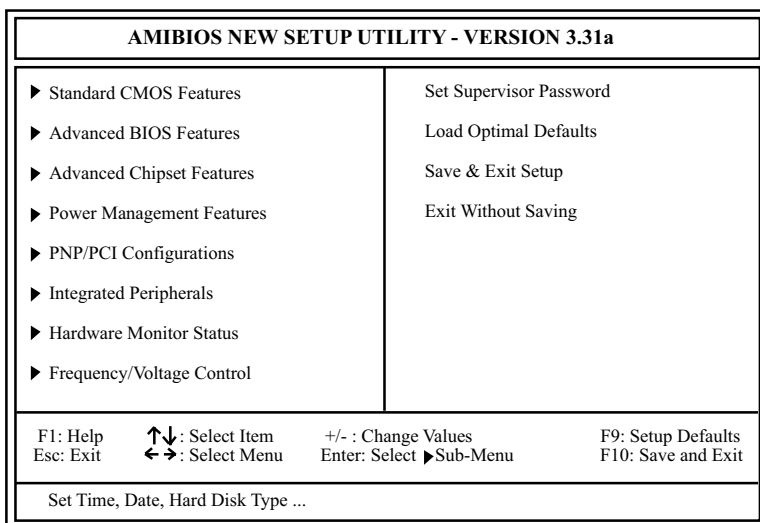
4-6.1 CMOS Setup Utility

This mainboard comes with the AMI BIOS from American Megatrends Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

PRESS TO RUN SETUP

2. Press the key and the main program screen will appear as follows.



3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <ESC>.
5. In the Main Menu, "Save & Exit Setup" saves your changes and reboots the system, and "Exit Without Saving" ignores your changes and exits the program.

4-6.2 Standard CMOS Setup

Standard CMOS Setup records some basic system hardware configuration and sets the system clock and error handling. Modify the configuration values of this option if you want to change your system hardware configuration or after you clear CMOS data.

Run the Standard CMOS Setup as follows:

1. Choose "Standard CMOS Setup" from the Main Menu and a screen with a list of options will appear:

Standard CMOS Features	Setup Help
System Time 00 19 29 System Date Dec 05 2001 Wed ▶ Floppy options. ▶ IDE Devices Config	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
 Esc: Previous Menu Enter: Select ▶Sub-Menu F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

System Time The BIOS shows the time of the day in the format: hh:mm:ss. Choose the field with the Arrow keys and change the time with the Page Up/Page Down +/- keys.

System Date The BIOS shows the date of the day in the format: mm:dd:yy :day of the Week. Choose the field with the Arrow keys and change the value with the Page Up/Page Down +/- keys.

Floppy options Press Enter on “Floppy options” will let you select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are:
 1.2MB, 5.25 in.
 720KB, 3.5 in.
 1.44MB, 3.5 in.
 2.88MB, 3.5 in.
 Not Installed

IDE Device Config Press Enter on IDE Device Config will let you configure the IDE devices on board and the following menu will reveal the following submenu for your configuration of the hard Disk you have installed:

Primary IDE Master :Maxtor 82560 A4		Setup Help
Type	Auto	
Cylinders	4962	
Heads	16	
Write Precompensation		
Sectors	63	
Maxium Capacity	2561 Mb	
LBA Mode	On	
Black Mode	On	
Fast Programmed I/O Modes	4	
32 Bit Transfer Mode	On	

F1: Help ↑↓ : Select Item +/- : Change Values F9 : Setup Defaults
 Esc: Previuos Menu Enter: Select ▶ Sub-Menu F10 : Save & Exit

Type This option shows the types of configuration for the IDE devices:

1-50: Predefined types

USER: set Parameters by User

Auto: Set parameters automatically

CD-ROM: Use for ATAPI CD-ROM drives

Double click [Auto] to set all HDD parameters automatically, including “Cylinders, Heads, Write Precompensation, Sectors, Maximum Capacity and 32 Bit Transfer Mode.

4-6.3 Advanced BIOS Features

Advanced BIOS Features improves your system performance or sets up system features according to your preference.

Run the Advanced BIOS Features as follows:

1. Choose “Advanced BIOS Features” from the Main Menu and a screen with a list of options will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Advanced BIOS Features	Setup Help
Quick Boot	Enabled
Delay for Hard Drive (Sec.)	2
Boot Device Priority	
1st Floppy: 1.44 MB 3.5	
2nd CD-ROM	
3rd IDE-0 :Maxtor 20560 A4 -	
Try Other Boot Devices	Yes
Initial Display Mode	Silent
Display Mode at Add-On ROM Init	Force BIOS
S.M.A.R.T for Hard Disks	Disabled
Bootup Num-lock	On
Floppy Drive Swap	Disabled
Floppy Drive Seek	Disabled
PS/2 Mouse Support	Enabled
Primary Display	VGA/EGA
Password Check	Setup
Boot To OS/2	No
CPU Microcode Update	Enabled
L1 Cache	Enabled
L2 Cache	Enabled
System BIOS Cacheable	Enabled
C000,32K Shadow	Cached
C800,16K Shadow	Disabled
CC00,16K Shadow	Disabled
D000,16K Shadow	Disabled
D400,16K Shadow	Disabled
D800,16K Shadow	Disabled
DC00,16K Shadow	Disabled

F1: Help ↑↓: Select Item
Esc: Previous Menu

+/- : Change Values
Enter: Select ► Sub-Menu

F9: Setup Defaults
F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide.
-

- Quick Boot** Allows you to enable / disable quick boot of your system.
- Delay for Hard Drive (Sec.)** Allows you to adjust the time of detecting hard disk on board at booting system.
Choices: Disabled; 1~10 sec. in 1 sec. stepping.
- 1st/2nd/3rd Boot Device** Allows you to set floppy or IDE devices already installed on board to be the 1st/2nd/3rd boot device.
Choices: Disabled; Device(s) installed
- Try Other Boot Devices** Allows you to enable/disable system to try to boot with other boot devices.
Choices: Yes; No
- Initial Display Mode** If option is "Silent", the initial display mode will be set to one with Soltek logo. If option is "BIOS", the normal BIOS display mode will be shown.
Choices: silent (default); BIOS
- Display Mode at Add-On ROM Init** If the item "Initial Display Mode" is set to "Silent", two sub-modes are provided for the initial display mode. If "Force BIOS" is chosen, the vendor's logo screen will be followed by the "Add-on ROM" initial screen (the screen showing the add-on card BIOS message). If "Keep Current" is chosen, no "Add-On ROM" screen is followed.
- S.M.A.R.T. for Hard Disks** Allows you to enable / disable the Self Monitoring Analysis and Reporting Technology for the hard disk.
Choices: Enabled; Disabled

- Bootup Num-lock** Allows you to toggle between On or Off to control the state of the NumLock keys when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.
- Floppy Drive Swap** Disabled (default), Floppy Drive A will not be changed to B, nor B to A. Enabled, Floppy Drive A and B will change position.
- Floppy Drive Seek** Disabled (default), Floppy Drives will not be checked and diagnosed at system bootup; Enabled, Floppy Drives will be checked and diagnosed at system bootup.
- PS/2 Mouse Support** Enabled (default), PS/2 mouse is supported. Disabled, PS/2 Mouse is not supported
- Primary Display** Allows you to choose the primary display for the system. Choices: VGA/EGA (default); CGA40x25; CGA80x25; Mono; Absent
- Password Check** Allows you to set BIOS to check up password with a password prompt at BIOS Setup or whenever re-starting system. Choices: Setup; Always
- Boot to OS/2** Allows you to set your system to OS/2 operating system. Choices: Yes; No (default)
- CPU Microcode Update** Allows you to enable/disable the CPU Microcode Update function. Choices: Disabled; Enabled (default)
- L1 /L2 Cache** Allows you to set the Internal/External Cache Mode. Choices: WriteBack (default); WriteThru; Disabled
- System BIOS Cacheable** Allows you to enable / disable the System BIOS Cacheable function.
- C000, 32K Shadow** Allows you to set these addresses cached, Enabled or Disabled. Default: Cached
- C800,CC00,D000,D400, D800,DC00 16K Shadow** Allows you to set these addresses cached, Enabled or Disabled. Default: Disabled

4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:

1. Choose “Advanced Chipset Features” from the Main Menu and a list of option will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Advanced Chipset Features	Setup Help
DRAM Timing	
Configure SDRAM timing by SPD	Enabled
SDRAM Frequency	Auto
SDRAM CAS# Latency	2.5
SDRAM Bank Interleave	Disabled
SDRAM Burst Length	4
SDRAM Command Rate	2T
Memory Hole	Disabled
AGP Mode	8X
AGP Read Synchronization	Disabled
AGP Fast Write	Disabled
AGP Comp. Driving	Auto
Manual AGP Comp. Driving	CB
AGP Aperture Size	64MB
AGP Master 1 W/S Write	Disabled
AGP Master 1 W/S Read	Disabled
APIC interrupt Mode	Disabled
USB Controller	6 USB Ports
USB 1.1 Device Legacy Support	Disabled
USB 1.1 Port 64/60 Emulation	Disabled

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
 Esc: Previous Menu Enter: Select ► Sub-Menu F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: “Help” gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- Configure SDRAM Timing by SPD** SPD (Serial presence detect) is a device in memory module for storing the module information such as DRAM timing and chip parameters. If this option is enabled, BIOS will access SPD automatically to configure module timing. If disabled, DRAM timing can be configured manually.
- SDRAM Frequency** Allows you to set the SDRAM frequency.
Choices: Auto; 200MHz; 266MHz
- SDRAM CAS# Latency** With SDRAM Timing by SPD disabled, you can select the SDRAM CAS# (Column Address Strode)lacency manually.
Choices: 2Clocks; 2.5 Clocks
- SDRAM Bank Interleave** This item allows you to enable / disable SDRAM Bank Interleave function.
Choices: Disabled (default); Enabled
- SDRAM Burst Length** With SDRAM Timing by SPD disabled, you can select the SDRAM Burst length manually.
Choices: 8; 4
- SDRAM Command Rate** Allows you to set the SDRAM Command Rate.
Choices: 1T; 2T
- Memory Hole** Allows you to enabled / disabled (default) the support of Memory Hole which is reserved for ISA card.
- AGP Mole** Allows you to see the AGP Mode on board. The default setting is Auto. This item support 4X/8X AGP Mode
- AGP Read Synchronization** Allows you to enabled / disabled (default) the AGP Read Synchronization function.
- AGP Fast Write** Allows you to enable / disable the AGP Fast Write function
- AGP Comp. Driving** Allows you to Auto or manually set the AGP Comp. Driving.

- Manual AGP Comp. Driving** If AGP Comp. Driving is set to Manual, this item allows you to set the AGP Comp. Driving.
Choices: 00h ~ FFh
- AGP Aperture Size** Allows you to set the AGP Aperture Size.
Choices: 4MB; 8MB; 16MB; 32MB; 64MB; 128MB; 256MB;
- AGP Master 1 W/S Write** Allows you to enable / disable (default) the support of AGP Master 1 Waite State Write.
- AGP Master 1 W/S Read** Allows you to enable / disable (default) the support of AGP Master 1 Waite State Read.
- APIC Interrupt Mode** Allows you to enable / disable (default) the APIC function for selecting the APIC interrupt Mode.
- USB Controller** Allows you to set the USB Controller on the USB port(s).
Choices: 6 USB Ports; 4 USB Ports; 2 USB Ports; disabled
- USB 1.1 Device Legacy Support** Allows you to select the USB Device Legacy support.
Choices: No Mice; all Devices; Disabled
- USB 1.1 Port 64/60 Emulation** Allows you to enable / disable (default) the Port 64/60 Emulation.

4-6.5 Power Management Features

Power Management Features allows you to set the system's power saving functions.

Run the Power Management Features as follows:

1. Choose "Power Management Features" from the Main Menu and a list of options will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Power Management Features		Setup Help
ACPI Standby State	S1/POS	
Power Management/APM	Enabled	
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Standby Time Out (Minute)	Disabled	
Suspend Time Out (Minute)	Disabled	
Power Button Function	On/Off	
Restore on AC/Power Loss	Last State	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On PME#	Disabled	
Resume On KBC	Disabled	
Wake-Up Key	Any Key	
Resume On PS/2 Mouse	Disabled	
Resume On RTC Alarm	Disabled	
RTC Alarm Date	15	
RTC Alarm Hour	12	
RTC Alarm Minute	30	
RTC Alarm Second	30	

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
 Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.
 <F9>: Setup BIOS default values.
 <F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- ACPI Standby State** This item allows you to select the ACPI Suspend type. You can select S3(STR) for suspending to DRAM if your system supports this mode. Or you can select S1 (POS) for Power on Suspend under Windows 98 ACPI mode..
- Power Management/ APM** Allows you to enable / disable the Power management / Advanced Power Management function.
- Video Power Down Mode** Allows you to select the Video Power Down Mode.
Choices: Disabled; Standby; Suspend
- Hard Disk Power Down Mode** Allows you to select the Hard Disk Power Down Mode.
Choices; Disabled; Standby; Suspend
- Standby Time Out (Minute)** To set the duration of Standby Time Out.
Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60
- Suspend Time Out (Minute)** To set the duration of Suspend Time Out.
Choices: 1; 2; 4; 8; 10; 20; 30; 40; 50; 60
- Power Button Function** allows you to set power Button function.
Choices: On/Off; Suspend
- Restore on AC/Power Loss** Allows you to set the restore state from AC/Power Loss.
Choices: Last State; Power Off; Power On
- Resume on Ring** Allows you to enable / disable the Resume on Ring Signal function.
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.
- Resume on LAN** Allows you to enable / disable the Resume on LAN function.

- Resume on PME#** Allows you to enable / disable the Resume on PME function.
- Resume on KBC** Allows you to select S4/S5 mode or disable the Resume on Keyboard clock function.
- Wake Up Key** If Resume On KBC is set at S4/S5 mode, this item allows you to select any key to wake up system.
- Resume on PS/2 Mouse** Allows you to S4/S5 mode or disable the Resume on PS/2 Mouse function.
- Resume On RTC Alarm** Allows you to enable / disable the Resume On RTC Alarm function.
- RTC Alarm Date / Hour / Minute / Second** If resume On RTC Alarm is enabled, this field allows you to set the Alarm date Hour, Minute and second.
Date Choices: Every Day; 01 ~ 31
Hour Choices: 00 ~ 23
Minute Choices: 00 ~ 59
Second Choices: 00 ~ 59

4-6.6 PNP / PCI Configurations

PNP/PCI Configuration allows you to modify the system's power saving functions.

Run the PNP/PCI Configurations as follows:

1. Choose "PNP/PCI Configurations" from the Main Menu and a screen with a list of options will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

PNP/PCI Configurations	Setup Help
Plug and Play Aware O/S	No
Clear NVRAM	No
PCI Latency Timer (PCI Clocks)	32
Primary Graphics Adapter	PCI
PCI IDE Busmaster	Disabled
PCI Slot1 IRQ Priority	Auto
PCI Slot2 IRQ Priority	Auto
PCI Slot3 IRQ Priority	Auto
PCI Slot4 IRQ Priority	Auto
PCI Slot5 IRQ Priority	Auto
PCI Slot6 IRQ Priority	Auto

F1: Help ↑↓: Select Item
Esc: Previous Menu

+/- : Change Values
Enter: Select ▶ Sub-Menu

F9: Setup Defaults
F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- Plug and Play Aware O/S** Allows BIOS to recognize the Plug and Play Aware Operating System.
Choices: No (default); Yes
- Clear NVRAM** Allows BIOS to clear the NVRAM data.
Choices: No (default); Yes
- PCI Latency Timer (PCI Clocks)** Allows you to set the PCI Latency Time.
Choices: 32; 64; 96; 192; 128; 160; 192; 224; 248;
- Primary Graphics Adapter** Allows you to select the primary Graphics Adapter.
Choices: PCI; AGP
- PCI IDE BusMaster** Allows you to enable / disable the PCI IDE Bus Master function.
- PCI Slot 1/2/3/4/5/6 IRQ Priority** Allows you to specify the IRQ for the PCI slots.
Choices: Auto; 3; 4; 5; 7; 9; 10; 11

4-6.7 Integrated Peripherals

Integrated Peripherals option allows you to get some information inside your system when it is working.

Run the Integrated Peripherals as follows:

1. Choose "Integrated Peripherals" from the Main Menu and a list of options will appear:

AMIBIOS NEW SETUP UTILITY - VERSION 3.31a

Integrated Peripherals	Setup Help
Onboard FDC	Auto
Onboard Serial Port 1	Auto
Onboard Serial Port 2	Auto
Serial Port 2 Mode	Normal
Onboard Parallel Port	Auto
Parallel Port Mode	ECP
Parallel Port IRQ	Auto
Parallel Port DMA Channel	Auto
Onboard MIDI Port	Disabled
MIDI Port IRQ	5
Onboard Game Port	200
Onboard IDE	Both
Onboard LAN (Optional)	Disabled
Onboard AC'97 Audio	Enabled

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
 Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.

<F9>: Setup BIOS default values.

<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

- OnBoard FDC** Allows you to enable / disable the Onboard FDC.
Choices: Auto; Enabled; disabled
- Onboard Serial Port 1** Allows you to set the Onboard Serial Port A.
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2;
3E8/COM3; 2E8/COM4;
- Onboard Serial Port 2** Allows you to set the Onboard Serial Port B.
Choices; auto; Disabled; 3F8/COM1; 2F8/COM2;
3E8/COM3; 2E8/COM4;
- Serial Port 2 Mode** Allows you to set the Serial Port B Mode.
Choices: Normal; 1.6 uS; 3/16 Baud; ASKIR;
- OnBoard Parallel Port** Allows you to configure onboard Parallel port .
Choices: auto; Disabled; 378; 278; 3BC;
- Parallel Port Mode** If Parallel Port is not disabled, this item allows you
to configure parallel port mode.
Choices: ECP; EPP + ECP; Normal; EPP
- Parallel Port IRQ** If Parallel Port Mode is set at EPP, this item allows
you to set the Parallel Port IRQ.
Choices: 5; 7
- Parallel Port DMA Channel** If Parallel Port Mode is set at ECP, this item allows
you to set the DMA Channel.
Choices: 0; 1; 3
- OnBoard MIDI Port** Allows you to configure onboard MIDI port address.
The choices: Disabled; 300h; 330h
- MIDI IRQ** If the onboard MIDI port is set at 300h or 330h, this
item shows up to allow you to configure the MIDI
Port IRQ to IRQ 5.
- OnBoard Game Port** Allows you to configure Onboard Game port
address.
The choices: Disabled; 200h; 208h

Onboard IDE Allows you to choose the Onboard IDE Mode.
Choices: Disabled; Primary; Secondary; Both

(Optional) Onboard LAN If your mainboard is LAN on board, this item allows you to enable / disable onboard LAN.
Choices: Enabled; Disabled

Onboard AC'97 Audio Allows you to disable AC' 97 Audio.
Choices: Auto; Disabled

4-6.8 Hardware Monitor Status

This menu helps you to read only and get more information on the working CPU temperature, FAN speed and voltage.

1. Choose “Hardware Monitor Status” from the Main Menu and a screen with a list of current status of your working system will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 3.31a

Hardware Monitor Status		Setup Help
CPU Vcore	+1.680 V	
+2.5V	+2.504 V	
+3.3V	+3.408 V	
+5.0V	+5.126 V	
+12.0V	+11.187V	
-12.0V	-11.972V	
5V SB	+5.164V	
Battery	+3.296V	
Fan 1 Speed	0 RPM	
Fan 2 Speed	4905 RPM	
Temperature 1	0 °C/32 °F	
Temperature 2	31 °C/87 °F	
Temperature 3	38 °C/100 °F	

F1: Help ↑↓: Select Item +/-: Change Values F9: Setup Defaults
 Esc: Previous Menu Enter: Select ▶ Sub-Menu F10: Save and Exit

2. Press <ESC> to return to the Main Menu. In case any irregular reading appears about your system, it indicates that a problem exists therein. To solve the problem, a hardware engineer or your dealer is recommended.

CPU Vcore Shows CPU core actual voltage value.

+2.5V Shows current voltage against the +2.5V power supply.

+3.3V Shows current voltage against the +3.3V power supply.

+5.0V Shows current voltage against the +5.0V power supply.

+12V Shows current voltage against the +12V power supply.

-12V Shows current voltage against the -12V power supply.

-5.0V Shows current voltage against the -5.0V power supply.

+5V SB Shows current voltage against the +5V SB power supply.

Battery Shows current voltage against battery power supply.

Fan 1 / 2 Displays the current speed of CPU Fan, and other onboard device which user has connected to the onboard Fan Connectors.

Temperature 1 Shows current CPU internal temperature.

Temperature 2 Shows current CPU external temperature.

Temperature 3 Shows current system temperature.

4-6.9 Frequency/Voltage Control

Run the "Frequency/Voltage Control" as following:

1. Choose "Frequency/Voltage Control" from the Main Menu and a screen with a list of options will appear:

AMIBIOS EASY SETUP UTILITY - VERSION 3.31a

Frequency/Voltage Control	Setup Help
CPU Linear Freq	Disabled
CPU Clock	100 MHz
Spread Spectrum Selection	Disabled
CPU Voltage Control	Auto
AGP Voltage Control	1.5V
DIMM Voltage Control	2.5V
CPU Ratio Selection	Locked

F1: Help ↑↓: Select Item +/- : Change Values F9: Setup Defaults
Esc: Previous Menu Enter: Select ►Sub-Menu F10: Save and Exit

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:

<F1>: "Help" gives options available for each item.
<F9>: Setup BIOS default values.
<F10>: Save and Exit Setup.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following item descriptions are provided as a quick guide to your setup.

CPU Linear Frequency This item allows you to enable / disable this setting function.

CPU Clock If CPU Linear Frequency is set at Enabled, this item allows you to set CPU Clock.
Choices: 100MHz ~200MHz in 1MHz stepping.

Spread Spectrum Selection Allows you to enable / disable this Spread Spectrum Selection function. If enabled, this function will reduce the EMI (Electromagnetic Interference) in your system. If you do not have an EMI problem, leave this item disabled.

CPU Voltage Control allows you to configure the CPU Voltage. Usually, to raise CPU voltage will raise the chance of CPU overclocking and yet risk damage of CPU.
Choices: Auto; 1.100V ~1.850V in 0.025 stepping

AGP Voltage Control allows you to configure the AGP Voltage.
Choices: 1.5V; 1.6V; 1.7V; 1.8V

DIMM Voltage Control allows you to configure the DIMM Voltage.
Choices: 2.5V; 2.6V; 2.7V; 2.8V

CPU Ratio Selection If CPU onboard is one with an adjustable or unlocked CPU ratio, this item allows you user to adjust the CPU Ratio. If your CPU is one with the CPU Ratio locked, this item will be invalid.

4-6.10 Set Supervisor Password

This option allows you to set a Supervisor password for the system:

1. Choose "Set Supervisor Password" in the Main Menu and press <Enter>. Then the following message appears:

[Enter new supervisor password]

2. The first time you run this option, enter your password up to 8 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears prompting you to confirm the password:

[Retype new supervisor Password]

4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[New supervisor password installed]

Any Key to Continue

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press "Save & Exit Setup" and choose "yes" to exit and save setup.
7. After the Supervisor password is set, you have to choose whether the password is for entering the system or only for entering BIOS Setup program. To make the choice, please enter BIOS Setup and choose "Advanced BIOS Features" in the main menu. (At entering BIOS Setup, you have to enter the password now.) In "Advanced BIOS Features", choose "Password Check" and change the option. The "Setup" option is to set the password only for entering BIOS Setup. The "Always" option is to set the password for entering the system.

8. To change or remove a current supervisor password, choose "Set Supervisor Password" and press <Enter>. An instruction box appears on the screen, prompting you to enter the current password first:

[Enter current supervisor password]

9. Type the current password with keyboard and then press <Enter>. An instruction box appears, prompting you to enter new supervisor password:

[Enter new supervisor password]

10. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor password. That means, no password is set for either entering BIOS Setup or system:

[Supervisor password disabled]

Any Key to Continue

NOTE: If you forget or lose a supervisor password, the only way to access the system is to clear the CMOS. All setup informations will then be cleared including the password and you need to run the BIOS setup program again so as to reconfigure BIOS.

4-6.11 Load Optimized Defaults

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

[Load Optimized Defaults]

Press [Enter] to continue
or [ESC] to abort

Press <Enter> now to load Optimal values for all the Setup options.

4-6.12 Save & Exit Setup

Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:

[Saving current settings and exit]

Press [Enter] to continue
or [ESC] to abort

Press <Enter> key to save the configuration changes and exit CMOS Setup to restart your system.

4-6.13 Exit Without Saving

Exit Without Saving option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

[Quit Without Saving Changes]

Press [Enter] to continue
or [ESC] to abort

Follow the message and press <Enter> key to exit CMOS Setup and restart system.