Motherboard 4845GLM

Chapter 1
Motherboard 4845GLM

1. 4845GLM Specifications

1.1 Introduction

The 4845GLM motherboard is an integration of Intel P4 CPUs in Socket-478 packaging and the North Bridge i845GL supporting 400 MHz Front Side Bus.

North Bridge i845GL on board also supports DDR 266/ 200 DRAMs in DDR 266MHz main bandwidth, while the South Bridge ICH4 provides stable supports of ULTRA ATA 100, 6-channel Audio playback and USB 2.0/1.1 interface.

The resulting architecture will provide an ideal multi-task environment to support operating systems such as MS-DOS, Windows, Windows NT , Windows ME, Windows 2000, Novell, OS/2, Windows 95/98, Windows 98SE, Windows XP, UNIX, Liunx, SCO UNIX etc. This user-friendly manual is to describe in detail how to install, configure and use this motherboard with drivers and BIOS setup illustrations.

1.2 Package Contents

- HDD UDMA66/100 Cable.
- FDD Cable.
- Flash Memory with BIOS.
- USB2/3 Cable (Optional).
- Fully Setup Driver CD with built in utilities.
- User Manual.

1.3 Specifications and Features

CPU Processor
- | Support 400MHz System Interface speed.
- | Single Socket 478 for Intel P4™ 1.5 to 2.4GHz or higher (Northwood Processor).
- | Support Intel Netburst™ Micro-architecture.

Chipset
- | Intel 845GL North Bridge.
- | Intel ICH4 South Bridge.

PCI
- | Supports 33MHz PCI Bus speed.

DDR SDRAM Memory
- | Supporting 64/128/256/512....MB DDR module
- | Supporting Synchronous DRAM(2.5V)
- | Supporting a maximum memory size of 2GB with DDR SDRAM.

VGA On Board
- | 2D, 3D Graphics display supported on board
- | 15-pin Connector on board for VGA CRT display

Bus Slots
- | 3 32-bit PCI slots.

Universal Serial Bus
- | Supporting two on-board Universal Serial Bus(USB)Ports and four external Universal serial Bus(USB)Ports.
- | Supporting USB 2.0/1.1

WOL (Wake On LAN)
- | Supporting system power-on by LAN Ring-up signal.

Award BIOS

- Supporting Plug & Play specification which detects the peripheral devices and expansion cards automatically
- Supporting CD-ROM, SCSI, LAN BOOT, Temperature sensor, LAN, Alarm Bus CLK setup
- Supporting Desktop Management Interface (DMI) function for recording mainboard specification

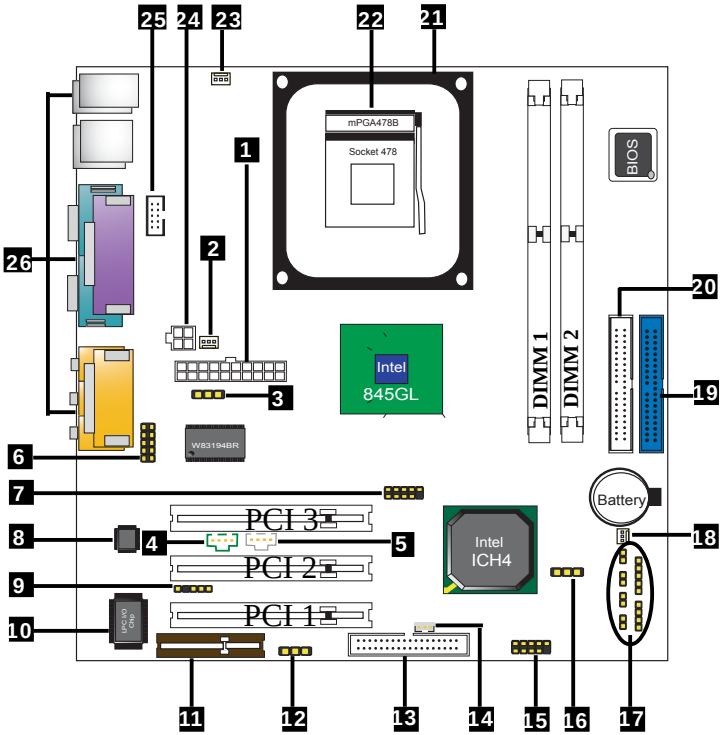
ATA 100 On Board

- Supporting four IDE devices.
- Supporting PIO Mode 5, Master Mode, high performance hard disk drives.
- Supporting Ultra DMA 33/66/100 Bus Master Mode.
- Supporting IDE interface with CD-ROM.
- Supporting high capacity hard disk drives.
- Supporting LBA mode.

PCI-Based AC 97 Digital Audio Processor

- AC 97 2.1Audio interface.
- 16-bit Stereo Full-Duplex Codec with up to 48 KHz sampling rate
- 4 Analog Line-level Stereo inputs for connection from Line, CD, Viedo and AUX
- 2 Analog Line-level Stereo inputs for speakerphone and PC beep

1.4 4845GLM Layout Diagram



4845GLM Component Layout Description:

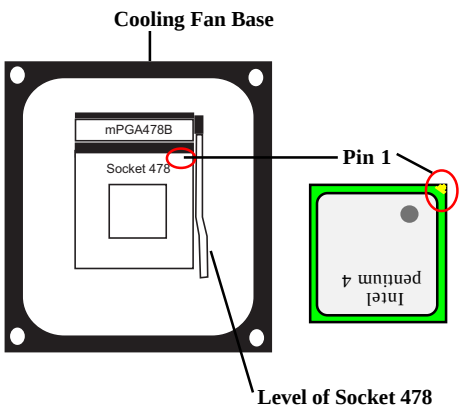
1. PW2: Main Power Connector
2. Fan 2: Cooling Fan Connector
3. JP1: Jumper as CPU Clock Selector
4. AUX: Audio-in Connector
5. CD_IN: CD Audio-in Connector
6. Front Audio: Front Audio Connector
7. USB2: Pin Header for 2 USB ports
8. AC'97 Audio Codec
9. IR: Connector for Infrared transfer mode
10. LPC I/O Chip
11. CNR Slot: Slot for CNR Riser cards
12. JP6: Jumper as CNR Slot Selector
13. Floppy: Floppy Drive Connector
14. WOL: Wake-On-LAN Connector
15. USB3: Pin Header for two USB ports
16. JP8: Jumper for clear CMOS RAM
17. Front Panel Connectors: PWRLED, SPK, RST, SMI, HDLED, PSON
18. FAN 3: Cooling Fan Connector
19. IDE1: Primary IDE Connector
20. IDE2: Secondary IDE Connector
21. CPU Fan Base
22. mPGA478B: Socket 478 for P4 CPUs
23. FAN 3: Cooling Fan Connector
24. PW1: +12V Power Connector
25. COM2: Connector for Serial port
26. Back Panel: Back Panel I/O Connectors (Mouse, Keyboard, USB1, COM1, VGA, Printer, MIC in, Line in, Speaker-out, Game stick)

1.5 CPU and CPU Fan Installation

This motherboard is designed with Socket 478 for Intel P4™ processor.

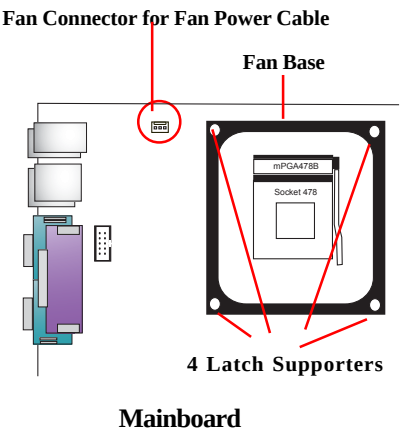
1.5.1 CPU Installation with Socket 478

1. Pull the lever sideways away from the socket then raise the lever to a 90-degree angle.
2. Locate Pin 1 in the socket Pin 1 of CPU is marked by the yellow corner or cut edge on the CPU. Match Pin 1 of Socket 478 and Pin 1 of CPU.
3. Pull up the lever of Socket 478 to let the CPU in and press the lever down to lock the CPU.
4. Make sure that Pin 1 of Socket 478 is matching with Pin 1 of CPU.
5. Make sure that all CPU pins are completely in socket before pressing down the socket lever.



1.5.2 CPU Fan Installation with P4 Fan Base

1. P4 CPU Fan is typically made of 4 latches and mounted with a thick heatsink. Please do not use other type of CPU fan which cannot match the P4 Fan base on board.
2. Install the P4 CPU fan into the Fan base in such a way that the 4 latches of the CPU Fan match with the 4 Supporters of the CPU Fan Base.
3. Press down the latches to lock CPU Fan to the Fan Base.
4. Then connect the Fan Power Cable to one of the Fan connectors on board.
5. Make sure that the Fan Power Cable is correctly connected to Fan Connector.



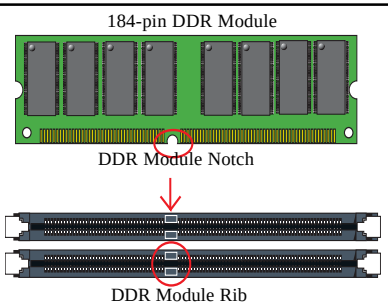
1.6 DDR SDRAM Installation

This motherboard supports a maximized 2GB DDR 266/ 200 SDRAM. It provides two184-pin unbuffered DDR sockets. It supports 64MB to 1GB DDR memory module.

DDR SDRAM Installation Procedures:

1. The DDR socket has a "Plastic Safety Tab" and the DDR memory module has an asymmetrical notch", so the DDR memory module can only fit into the slot in one direction.
2. Push the tabs out. Insert the DDR memory modules into the socket at a 90-degree angle then push down the module vertically to fit it into place.
3. The Mounting Holes and plastic tabs should fit over the edge and hold the DDR memory modules in place.

Bank	Memory module
DIMM 1	64MB, 128MB, 256MB, 512MB, 1GB
	184 pin, 2.5V DDR SDRAM
DIMM 2	64MB, 128MB, 256MB, 512MB, 1GB
	184 pin , 2.5V DDR SDRAM
	Total System Memory (Max 2GB)

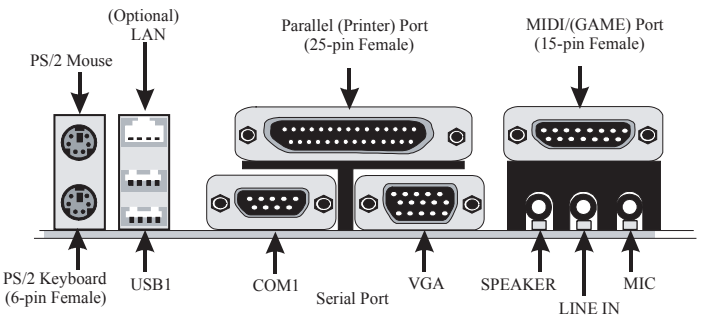


Warning: Be sure to turn off system power whenever to insert or remove a Memory Module. Otherwise, the power will damage the module or even the system.

1.7 Connectors & Jumpers Setting

1.7.1 Back Panel I/O Connectors

This motherboard provides the following back panel connectors:



1.7.1.1 PS/2 Mouse / Keyboard CONN.

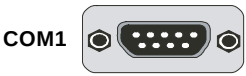
The motherboard provides a standard PS/2 mouse / Keyboard mini DIN connector for attaching a PS/2 mouse. You can plug a PS/2 mouse / Keyboard directly into this connector.

1.7.1.2 USB Port Connector: USB1

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

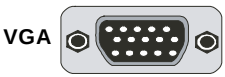
1.7.1.3 Serial Interface Port: COM1

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



1.7.1.4 VGA Interface Connector: VGA(15 Pin)

This connector is for output to CRT display devices.



1.7.1.5 Parallel Interface Port

Unlike serial ports, parallel interface ports have been standardized and should not present any difficulty interfacing peripherals to your system. Sometimes called a Centronics port, the parallel port is almost exclusively used with printers. The parallel port on your system is a 25-pin, DB 25 connector.

1.7.1.6 Joystick / Midi Connector

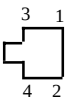
You can connect a joystick or game pad to this connector.

1.7.1.7 Audio Port Connectors

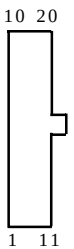
Speaker out is a connector for Speakers or Headphones. Line in is used for external CD player, Tape player, or other audio devices. Mic is a connector for the microphones.

1.7.2 ATX Main Power Connectors: PW1/PW2

This connector supports the power button on-board. Using the ATX power supply, functions such as Modem Ring Wake-Up and Soft Power Off are supported on this motherboard . This power connector supports instant power-on functionality, which means that the system will boot up instantly when the power connector is inserted on the board. ATX 4-pin power connector only support +12V voltage.



Pin	PW1 Signal	Pin	PW1 Signal
1	GND	2	GND
3	+12V	4	+12V



Pin	PW2 Signal	Pin	PW2 Signal
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	5V	14	PS-ON
5	GND	15	GND
6	5V	16	GND
7	GND	17	GND
8	PW-OK	18	-5V
9	5V_SB	19	5V
10	12V	20	5V

Note:

When you set up P4 power supply, both PW1 and PW2 must be connected to power.

Important:

To switch on your power supply, please make sure:

1. Memory Module is properly installed.

2. Power supply setup is OK.

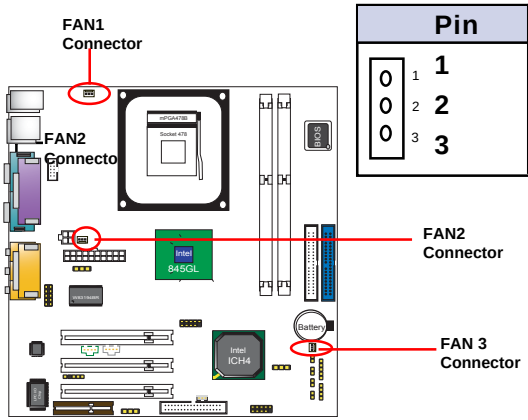
1.7.3 Floppy Disk Connector: FDD

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the board, connect the two plugs on the other end to the floppy drives.

1.7.4 Hard Disk Connectors: IDE1/IDE2

These connectors are provided with IDE hard disk ribbon cable into the package . After connecting the end of cable with single connector to the mainboard, connect the other two connectors at the other end to your hard disk. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper settings. BIOS now supports SCSI device or IDE CD-ROM boot up (see "HDD Sequence SCSI/IDE First" & "Boot Sequence" in the BIOS Features Setup of the BIOS SOFTWARE).

1.7.5 Fan Connectors: FAN1~3



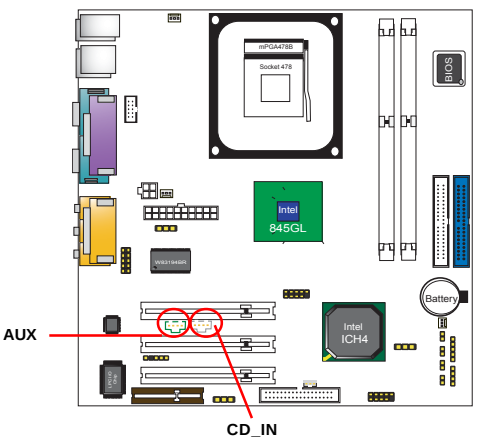
Pin	Definition
1	Signal
2	+12VDC
3	Ground

FAN1, FAN2 and FAN3 connectors

These Fan connectors support cooling fans of 1Amp or less. Depending on the fan manufacturer, the wiring and fan cable connector may be different. The red wire should be positive, while the black should be ground. Connect the fan cable connector to the board taking into consideration the polarity of the connector.

1.7.6 CD Audio-In Connectors: CD_IN/AUX

CD_IN and AUX are the connectors for CD-Audio Input signal. Please connect them to CD-ROM CD-Audio output connector.

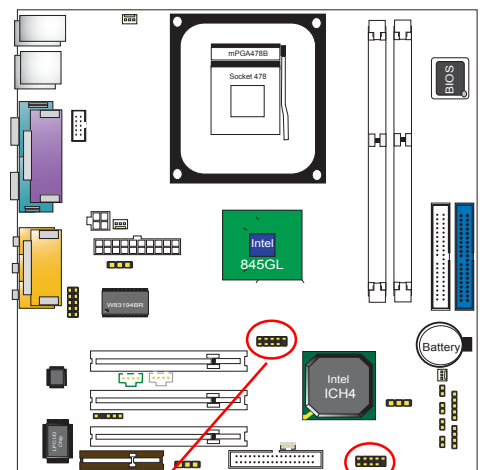


Pin CDIN1	Definition
1	GND
2	CD-L
3	GND
4	CD-R

Pin CDIN2	Definition
1	CD-L
2	GND
3	GND
4	CD-R

1.7.7 USB Pin Headers: USB2 & USB3

USB2 and USB3 are 2x5 Pin Headers for support of external USB ports. Each USB pin header requires a USB cable for expansion of two USB ports. This optional USB cable is available from your mainboard dealer or vendor.



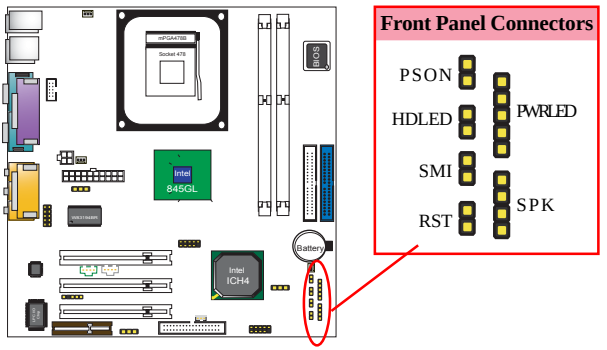
USB2

VCC	1	2		GND
P2-	3	4		GND
P2+	5	6		P3+
GND	7	8		P3-
GND	9	10		VCC

USB3

VCC	1	2		GND
P4-	3	4		GND
P4+	5	6		P5+
GND	7	8		P5-
GND	9	10		VCC

1.7.8 Front Panel Connectors: PANEL1



PSON

The system power is controlled by a momentary switch connected to this lead. Pushing the button once will switch the system ON.

Power LED Lead (P_LED)

The system power LED lights when the system power is on.

Speaker Connector (SPEAKER)

The speaker (onboard or offboard) provides error beep code information during the Power Self-Test when the computer cannot use the video interface. The speaker is not connected to the audio subsystem and does not receive output from the audio subsystem.

Hard Drive LED Connector (HD_LED)

This connector supplies power to the cabinet IDE activity LED. Read and write activity by devices connected to the Primary or Secondary IDE connectors will cause the LED to light up.

SMI Suspend Switch Lead (G-BUN) (Disabled)

This allows the user to manually place the system into a suspend mode of Green mode. System activity will be instantly decreased to save electricity and expand the life of certain components when the system is not in use. This 2-pin connector (see the figure) connects to the case-mounted suspend switch. If you do not have a switch for the connector, you may use the "Turbo Switch" instead since it does not have a function. If you want to use this connector, the "Suspend Switch" in the Power Management Setup of the BIOS SOFTWARE section should be enabled.

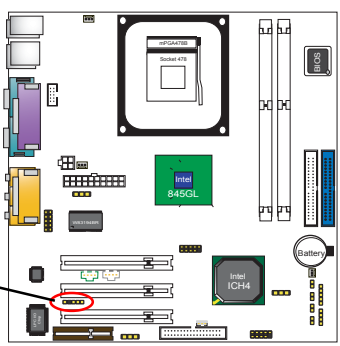
Reset Switch Lead (RST)

The connector can be connected to a reset switch. Press this reset switch to restart system.

1.7.9 IR infrared module: IRConnector

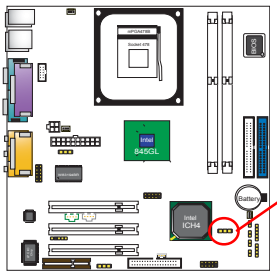
This connector supports the optional wireless transmission and reception infrared module. You must configure the setting through the BIOS setup to use the IR function.

Pin	Assignment
1	+5V
2	N/A
3	IRRX
4	GND
5	IRTX



1.7.10 CMOS Function Selector: JP8

When you have problem with booting system, you may clear CMOS to restore the optimum default BIOS data.

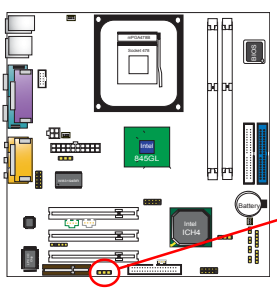


Pin JP8	Function
1-2	Normal (Default)
2-3	Clear CMOS

1. Remove the Jumper cap of JP8 from 1-2.
2. After 1 or two seconds, set JP8 to 2-3 closed with the jumper cap.
3. After 1 or two seconds, restore the JP8 to 1-2 closed. Now, the CMOS RAM has restored to the optimum default setting.

1.7.11 CNR Selector: JP6

JP6 is designed for enable or disable the use of CNR slot.



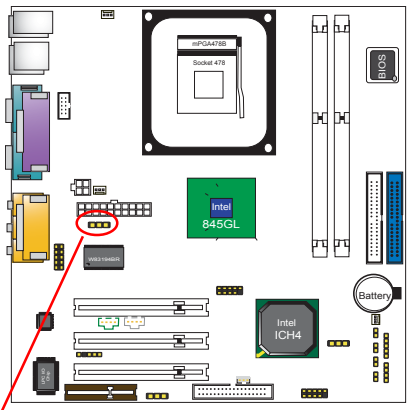
Pin JP6	Function
1-2	CNR Selected (Default)
2-3	CNR Disabled

1.7.12 CPU Clock Frequency Selector: JP1

Overclocking is to operate a CPU with a frequency which surpass the default CPU clock. JP1 jumper is designed to offer a chance for CPU overclocking.when starting system.

If a 100MHz CPU is used on board, setting JP1 to 1-2 closed or 2-3 closed will not offer a chance of overclocking from 100MHz to 133MHz. Only if JP1 is set at all pins open, there will be a chance of starting the system with 133MHz.

NOTE:
Intel usually provides CPUs with locked CPU frequency so as to forbid CPU overclock. We therefore don't recommend users to do CPU overclocking on Intel CPU. Otherwise you may risk CPU damage.



Pin JP1	CPU(MHz)	PCI(MHz)	Default
1-2	Auto	33.3	Default
2-3	100	33.3	
Open	133	33.3	

Chapter 2
BIOS Setup

2. BIOS Setup

2.1 BIOS Support

This chapter discusses the Award BIOS Setup program built into the ROM BIOS. The Setup program allows the user to modify the basic system configuration. The modification is then stored in battery-backed RAM so that it still retains the setup information after the power is turned off.

The Award BIOS installed in your computer system's ROM (Read Only Memory)is a custom version of an industry standard BIOS. This means that it supports Intel P4 Processor. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports. This chapter is intended for guiding you through the process of configuring your system BIOS.

Plug and Play Support

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

EPA Green PC Support

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

PCI Bus Support

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

APM Support

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

DRAM Support

SDRAM (Synchronous DRAM) are supported.

CPU Support

This AWARD BIOS supports the Intel P4 Processor.

Setup Menu

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

Note:

(BIOS version 1.0 is for reference only. If there is a change in BIOS version, please use the actual version on the BIOS.)

Keystroke	**Function**
Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item on the left(menu bar)
Right arrow	Move to the item on the right(menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+Key	Increase the numeric value or make changes
-Key	Decrease the numeric value or make changes
Esc Key	Main menu-Quit and not save changes into CMOS Status Page Setup Menu and option Page Setup Menu-Exit Current page and return to Main Menu
F1 Key	General help on Setup navigation keys.
F5 Key	Load previous values from CMOS
F6 Key	Load the fail-safe defaults from BIOS default table
F7 Key	Load the optimized defaults
F10 Key	Save all the CMOS changes and exit

2.2 Main Menu

Once you enter AWARD BIOS CMOS Set up Utility, the Main Menu will appear on the screen and allows you to select from several setup function. Use the arrow keys to select among the items and press<Enter> to accept and enter the sub-menu.

> *"WARNING"*
> *The information about BIOS defaults on manual (Figure 1,2,3,4,5,6,7,8,9,10,11,12,13,14)is just for reference, please refer to the BIOS installed on the board for default BIOS version.*

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features	Miscelaneous Control
Advanced BIOS Features	Load Optimized Defaults
Advanced Chipset Features	Load Standard Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PNP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit F9 : Menu in BIOS F10 : Save & Exit Setup	←→↑↓: Select Item
Time , Date , Hard Disk Type ...	

Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

Advanced BIOS Features

This setup page includes all the items of the BIOS special enchanced features.

Advanced Chipset Features

This setup page includes all the items of the Chipset special enchanced features.

Integrated Peripherals

This selection page includes all the items of the IDE hard drive and Programmed Input/Output features.

Power Management Setup

This setup page includes all the items of the power manage ment features.

PnP/PCI Configurations

This setup page includes the user defined or default IRQ Setting.

PC Health Status

This page shows the hardware Monitor information of the system.

Miscellaneous Control

This setup page controls the CPU's clock and frequency ratio.

Load Optimized Defaults

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

Load StandardDefaults

These settings are for configuring a workable computer when something is wrong. If you cannot boot the computer successfully, select the BIOS Setup options and try to diagnose the problem after the computer boots. These settings do not provide optional performance.

Set Supervisor Password

Change, set, or, disable password. It allows you to limit access to the system and Setup, or just to Setup.

Set User Password

You can specify both a User and a Supervisor password. When you select either password option, you are prompted for a 1-6 character password. Enter the password and then retype the password when prompted.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

2.3 Standard CMOS Features

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

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features

Date(mm:dd:yy)	Tue,Jun 6 2002	Item Help
Time (hh:mm:ss)	11:26:10	Menu Level
IDE Primary Master	None	
IDE Primary Slave		Change the day, month,year
IDE Secondary Master		
IDE Secondary Master	None	and century.
Drive A	1.44M,3.5 in	
Drive B	None	
Video	EGA/VGA	
Halt On	All,But Keyboard	
Base Memory	640K	
Extended Memory	65472K	
Total	1024K	

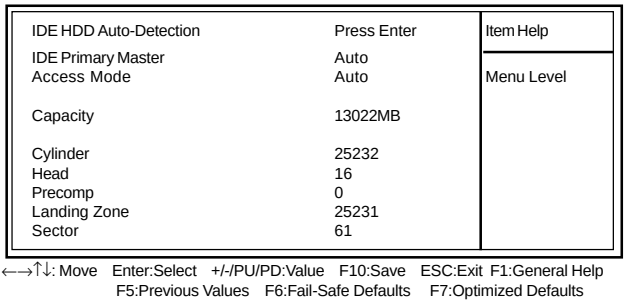
←→↑↓: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Main Menu Selections

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

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

Primary Master



2.4 Advanced BIOS Features

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

	Anti-Virus Protection	Disabled	Item Help
	CPU L1 & L2 Cache	Enabled	
	Quick Power On Self Test	Enabled	Menu Level
▶	Hard Disk Boot Priority	Press Enter	
	First Boot Device	Floopy	
	Second Boot Device	HDD-0	Allows you to
	Third Boot Device	LS-120	choose the
	Boot Other Device	Enabled	VIRUS warning
	Swap Floppy Drive	Disabled	feature for IDE
	Boot Up Floppy Seek	Disabled	Hard Disk boot
	Boot Up NumLock Status	On	sector protection.
	Gate A20 Option	Fast	If this function
	Typematic Rate Setting	Disabled	is enabled and
X	Typematic Rate (Chars/Sec)	6	someone attempts
X	Typematic Delay (Msec)	250	to write data into
	Security Option	Setup	this area,BIOS
	APIC Mode	Disabled	will show a
X	MPS Version Control For OS	1.4	warning message
	OS Select For DRAM >64MB	Non-OS2	on screen and
	Report No FDD For WIN 95	No	alarm beep

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

Anti-Virus Warning

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

The Choices: Disabled(default), Enabled.

Hard Disk Boot Priority

Press Enter to select the Bootable Add-in storage devices.

CPU L1 & L2 Cache

This fields allow you to Enable or Disable the CPU's "Level 1 & Level 2" cache. Caching allows better performance.

Enabled (default)	Enabled cache.
Disabled	Disabled cache.

Quick Power On Self Test

This category speeds up Power on self-Test(POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

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

First/Secondary/Third Boot Device

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

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

Boot Other Device

The Choices: Enabled(default), Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignments.

The Choices: Disabled(default), Enabled.

Boot Up Floppy Seek

Seek disk drives during boot up. Disabled speeds boot-up.

The Choices: Disabled(default), Enabled.

Boot Up NumLock Status

Select power on state for Numlock.

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

Gate A20 Option

Select if chipset or keyboard controller should control Gate A20.

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

Typematic Rate Setting

Enabled	Enabled this option to adjust the keystroke repeat rate.
Disabled (default)	Disabled.

Typematic Rate (Char/Sec)

Range between 6**(default)** and 30 characters per second. This option controls the speed of repeating keystrokes.

Typematic Delay (Msec)

This option sets the time interval for displaying the first and the second characters.

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

Security Option

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

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

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

APIC Mode

The Choices: Disabled(default), Enabled.

MPS Version Control For OS

The Choices: 1.4(default), 1.1.

OS Select For DRAM >64MB

Select the operating system that is running with greater than 64MB of RAM on the system.

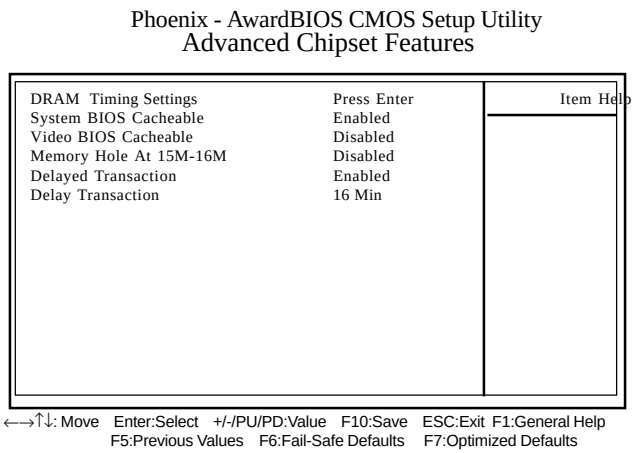
The Choices: Non-OS2(default), OS2.

Report No FDD For Window 95

No (default)	Assign IRQ6 For FDD.
Yes	FDD Detect IRQ6 Automatically.

2.5 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and external cache. It also coordinates communications of the PCI bus. It must be stated that these items should never be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was lost while using your system.



DRAM Timing Settings

The DRAM timing is controlled by the DRAM Timing Registers. Press Enter to configure the following items:

Auto Configuration

Optimized	Default setting.
Standard	Default setting.
Manual	Choose Manual to set up the following items:Standard setting.

SDRAM Cycle Time **Choose 8~4 as the cycle time**

.

SDRAM RAS# to CAS# Delay

4(default)/3/2	Set DRAM RAS# to CAS# delay 4/32 SCLKs.

SDRAM Precharge Time

4(default)/3/2	Set DRAM RAS# Precharge Time to 4/3/2.

SDRAM CAS Latency Time

2	Set DRAM latency Time to 2.
2.5	Set DRAM latency Time to 2.5..

Note:

If you are using “Nanya” brand DDR memory, please setting default is 2.

System BIOS Cacheable

When enabled, the access to the system BIOS ROM address at F0000H-FFFFFFH is cached.
The Choices: Enabled(default), Disabled.

Video BIOS Cacheable

Enabled	Enabled Video RAM Cacheable.
Disabled (default)	Disabled Video RAM Cacheable.

Memory Hole At 15-16M

In order to improve performace, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB.
The Choices: Disabled(default), Enabled.

Delayed Transaction

Enabled (default)	Slow speed ISA device in system.
Disabled	Disabled.

Delay Transaction

The Choices: Enabled; Disabled.

2.6 Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility

Integrated Peripherals

▶ Onboard IDE Function	Press Enter
▶ Onboard Device Function	Press Enter
▶ Onboard Super IO Function	Press Enter
Init Display First	AGP
Power On Function	All Enabled
x KB PowerOn Password	Enter
x Hot Key Power On	Ctrl-F1
Power Loss Function	Always Off

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

Onboard IDE Function : Press Enter to configure the following Submenus

Onboard IDE Function

		Item Help
Onchip Primary PCI IDE	Enabled	
Onchip Secondary PCI IDE	Enabled	
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Secondary Master UDMA	Auto	
Secondary Slave UDMA	Auto	
32-Bit Transfer Mode	Enabled	
HDD Block Mode	Enabled	
Delay for HDD (Secs.)	0	

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

IDE Primary Master PIO(for onboard IDE 1st channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

IDE Primary Slave PIO(for onboard IDE 2nd channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

IDE Primary Master UDMA

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disabled.

IDE Primary Slave UDMA

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disabled.

On-Chip Secondary PCI IDE

Enabled (default)	Enabled onboard 2nd channel IDE port.
Disabled	Disabled onboard 2nd channel IDE port.

IDE Secondary Master PIO(for onboard IDE 1st channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

IDE Secondary Slave PIO(for onboard IDE 2nd channel)

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Mode 0~4	Manually set the IDE Accessing mode.

IDE Secondary Master UDMA

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disabled.

IDE Secondary Slave UDMA

Auto (default)	BIOS will automatically detect the IDE HDD Accessing mode.
Disabled	Disabled.

IDE 32-bit Transfer Mode

Enabled (default)	Enable 32-bit transfer mode
Disabled	Disable 32-bit transfer mode.

IDE HDD Block Mode

Enabled	Enable HDD block mode.
Disabled (default)	Disable HDD block mode Support.

Delay for HDD (Secs.)

0~15	Select 0~15 secs for HDD delay.

Onboard Device Function : Press Enter to configure the following Submenus

On board Device Function

		Item Help
USB Controller	Enabled	
USB Keyboard Legacy Support	Disabled	
** Onboard AC97 Codec is ALC101 **		
AC97 Audio	Auto	
AC97 Modem	Auto	
Game Port Address	201	
Midi Port Address	Disabled	
x MIDI Port IRQ	10	

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

USB Controller

Enabled (default)	Enabled USB Controller.
Disabled	Disabled USB Controller.

USB Keyboard Legacy Support

Enabled	Enabled USB Keyboard Support.
Disabled (default)	Disabled USB Keyboard Support.

AC 97 Audio

Auto(default)	BIOS will automatically detect onboard Audio.
Disabled	Disabled.

AC 97 Modem

Auto(default)	BIOS will automatically detect onboard Modem.
Disabled	Disabled.

Game Port Address

The Choices: Disabled; 201(default); 209

MIDI Port Address

The Choices: Disabled (default); 330; 300; 209)

MIDI Port IRQ: Enable MIDI Port Address to choose the IRQ

The Choices: 5; 10

Onboard Device Function : Press Enter to configure the following Submenus

On board Device Function

			Item Help
Onboard FDD Controller		Enabled	
Onboard Serial Port 1		3F8/IRQ4	
Onboard Serial Port 2		2F8/IRQ3	
UART Mode Select	Normal		
x RxD, TxD Active		Hi, Lo	
x IR Transmission Delay		Enabled	
IR Duplex Mode		Half	
IR Pins		IRRX/IRTX	
Onboard Parallel Port		378/IRQ7	
Parallel Port Mode	SPP		
x EPP Mode Select	EPP1.9		
x ECP Mode Use DMA		3	

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

Onboard FDD Controller

Enabled (default)	Enabled onboard FDC Controller.
Disabled	Disabled onboard FDC Controller.

Onboard Serial Port1

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

Onboard Serial Port 2

Auto (default)	BIOS will automatically setup the Serial Port 2 address.
3F8/IRQ4	Enabled onboard Serial Port 2 and address is 3F8.
2F8/IRQ3	Enabled onboard Serial Port 2 and address is 2F8.
3E8/IRQ4	Enabled onboard Serial Port 2 and address is 3E8.
2E8/IRQ3	Enabled onboard Serial Port 2 and address is 2E8.
Disabled	Disabled.

UART2 Mode Select

This item allows you to select which Infra Red(IR) function of the onboard I/O chip you wish to use.
The Choices: Normal(default), IrDA, ASKIR.
(If IrDA or ASKIR is chosen, five more submenus are provided below for configuration):

RxD, TxD Active

Hi / Lo	Choose Hi or Lo for RxD/TxD.

IR Transmisson Delay

Disabled/Enabled	Choose Disabled or Enabled.

IR Duplex Mode

Half / Full	Choose Half or Full mode.

IR Pins

IRRX/IRTX	Choose as pin mode.
SINB/SOUTB	Choose as pin mode.

Onboard Parallel Port

This item allows you to select the I/O address with which to access the onboard parallel port controller.

Disabled.
378/IRQ7. (default)
278/IRQ5.
3BC/IRQ7.

Parallel Port Mode

SPP (default)	Using Parallel port as Standard Parallel Port.
EPP	Using Parallel port as Enhanced Parallel Port.
ECP	Using Parallel port as Extended Capabilites Port.
ECP/EPP	Using Parallel port as ECP/EPP mode.

EPP Mode Select

The Choices: EPP1.9; EPP1.7

ECP Mode Use DMA

The Choices: 3; 1 .

Init Display First

PCI Slot	Set Init Display First to PCI Slot.
Onboard/AGP (default)	Set Init Display First to onboard AGP.

Power On Function

Password	Enter from 1 to 7 characters to set the Keyboard Power On Password.
Hot Key	Hot Key.
Mouse Left	Mouse Left Click
Mouse Right	Mouse Right Click
Button Only (default)	Button Only.
Keyboard 98	If your keyboard has an Owner key button, you can press the key to power on your system.

KB Power On Password

Enter	Enter from 1 to 7 characters to set the keyboard Power On Password.

Hot Key Power On	First you must choose the
Ctrl-F1 (default)~F12	Power On by Hot Key func-

Power Loss Function

The Choices: Always Loss; Always On

2.7 Power Management Setup

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

Phoenix - AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Function	Enabled	Item Help
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI Card	Disabled	
Power On by Ring	Disabled	
Wake up on LAN	Disabled	
USB KB Wake-up From S3	Disabled	
Resume by Alarm	Disabled	
Data (of Month) Alarm	0	
Time (of hh:mm:ss) Alarm	0 0 0	
CPU Thermal Management Timer	32 Min	
PM Timer Reload Events	Press Enter	

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

ACPI Function

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

Power Management

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

The Choices: User Define (default), Min Saving, Max Saving.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS Support (default)	Initial display power management signaling.

Video Off In Suspend

This field determines when to activate the video off feature for monitor power management.

The Choices: Yes(default), No.

Suspend Type

Stop Grant (default)	Set Susped type is stop grant.
PwrOn Suspend	Set Suspend type is Power on Suspend.

Modem Use IRQ

This determines the IRQ which can be applied in Modem.

3 (default) 4/5/7/9/10/11/NA.

Suspend Mode

Disabled (default)	Disabled.
1 min - 1 Hour	Set the timer to enter Suspend Mode.

HDD Power Down

By default, this is "Disabled", meaning that no matter the mode of the rest of system, the hard drive will remain ready. Otherwise, you have a range of choices from 1 to 15 minutes or Suspend. This means that you can select to have your hard disk drive be turned off after a selected number of minutes or when the rest or the system goes into a suspend mode.

Disabled (default)	Disabled.
1 - 15 mins	Enabled.

Soft-Off by PWR-BTTN

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

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

Wake-Up by PCI Card

Enabled / Disabled (default)

Power On By Ring

Enabled / Disabled (default)

Resume by Alarm

Disabled (default) / Enabled

PM Timer Reload Events : Press Enter to configure the following Submenus

PM Timer Reload Events

Primary IDE 0	Disabled	Item Help
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD. COM. LPT Port	Disabled	
PCI PIRQIA	Disabled	

Primary IDE 0/1

Disabled (default) / Enabled

Secondary IDE 0/1

Disabled (default) / Enabled

FDD, COM, LPT Port

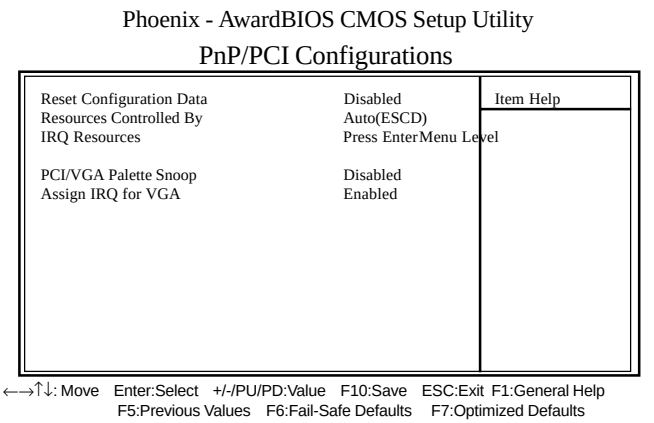
Disabled (default) / Enabled

PCI PIRQ[A-D]#

Disabled (default)	Ignore PCI PIRQ[A-D]# Active.
Enabled	Monitor PCI PIRQ[A-D]# Active.

2.8 PnP/PCI Configurations

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



Reset Configuration Data

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

Resources Controlled By

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

IRQ Resources : Press Enter to configure the following Submenus

IRQ Resources

		Item Help
IRQ4 assigned to	: PCI Devoce	
IRQ5 assigned to	: PCI Device	
IRQ6 assigned to	: PCI Device	
IRQ7 assigned to	: PCI Device	
IRQ8 assigned to	: PCI Device	
IRQ9 assigned to	: PCI Device	
IRQ10 assigned to	: PCI Device	
IRQ11 assigned to	: PCI Device	
IRQ12 assigned to	: PCI Device	
IRQ13 assigned to	: PCI Device	
IRQ14 assigned to	: PCI Device	
IRQ15 assigned to	: PCI Device	

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

IRQ Resources

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

PCI / VGA Palette Snoop

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

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

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

Disabled (default)	Function Disabled.
Enabled	Function Enabled.

Assign IRQ for VGA

This item allows user to enable / disable this function.

2.9 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

		Item Help
Shutdown Temperature	Disabled	
CPU Warning Temperature	Disabled	
Current CPU Temperature	( )	
Current CPU FAN Speed	( )	
Current SYSFAN Speed	( )	
Current SYSFAN2 Speed	( )	
Vcore	( )	
Vcc 3.3	( )	
5V	( )	
12V	( )	
-12V	( )	
-5V	( )	
VBAT(V)	( )	
5VSB	( )	

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

Shutdown Temperature

Allows you to set the Shutdown Temperature.
Choices: 65^{0}C / 149^{0}F; 70^{0}C / 158^{0}F; 75^{0}C / 167^{0}F; 80^{0}C / 176^{0}F; 85^{0}C / 185^{0}F; 90^{0}C / 194^{0}F

CPU Warning Temperature

Allows you to set the CPU Warning Temperature..
Choices: 64^{0}C / 140^{0}F; 65^{0}C / 149^{0}F; 70^{0}C / 158^{0}F; 75^{0}C / 167^{0}F; 80^{0}C / 176^{0}F; 85^{0}C / 185^{0}F; 90^{0}C / 194^{0}F

Current CPU Temperature

Shows automatically the current working CPU temoerature.

Current CPUFAN Speed

Shows automatically the current CPU Fan speed..

Current SYSFAN Speed

Shows automatically the current system Fan speed.

Current SYSFAN2 Speed

Shows automatically the second system fan speed.

Vcore/Vcc3.3/5V/+12V/-5V/-12V/VBAT/5VSB

Shows current voltage of the respective default voltages.

2.10 Miscellaneous Control

Phoenix - AwardBIOS CMOS Setup Utility
Miscellaneous Control

		Item Help
CPU Clock Ratio	8X	
Auto Detect PCI CLK	Ensabled	
Spread Spectrum	Disabled	
** Current Host/PCI Clock is 100/33MHz **		
Host/PCI Clock at Next Boot is (/)		
** Current DRAM Clock is 133MHz **		
DRAM Clock at Next Boot is ( )		

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

CPU Clock Ratio

This option will not be shown if you are using a CPU with the ratio locked or fixed.

The Choices: X8~X50.

Auto Detect PCI CLK

This item allows you to enable/disable auto detect DIMM / PCI CLOCK.

The Choices: Disabled(default), Enabled.

Spread Spectrum

This function is designed for the EMI test only.

The Choices: Disabled(default), Enabled.

Current Host / PCI Clock is (/)

This item shows the current Host/PCI clock in use.

Host/PCI Clock at Next Boot is (/)

Allows you to set the Host/PCI clock for next boot..

The Choices: (Host 100~132) / (PCI 33~44).

Current DRAM Clock is ( )

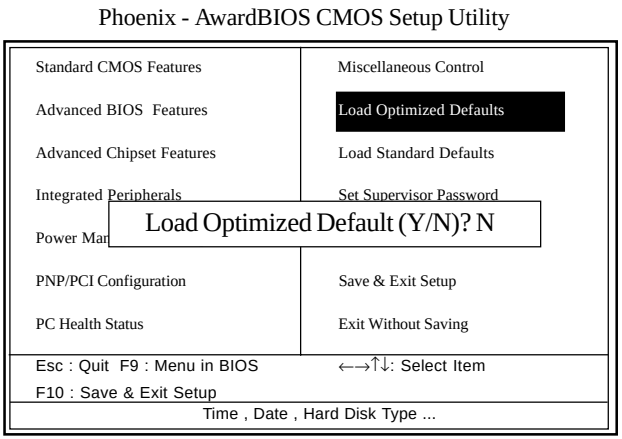
This item shows the current DRAM clock in use.

DRAM Clock at Next Boot is ( )

When setting the Host/PCI clock, the DRAM clock will be ajusted at the same time for next boot.

2.11 Load Optimized Defaults

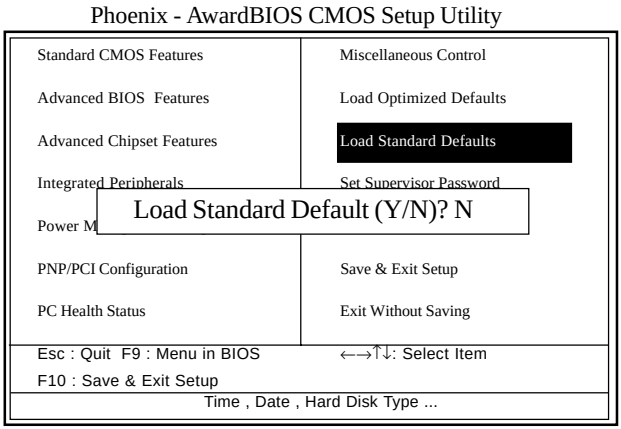
When you press <Enter> on this item, you get a confirmation dialog box with a message similar to:



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

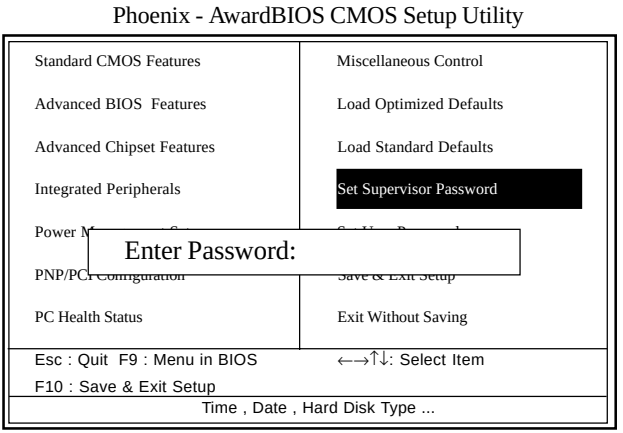
2.12 Load Standard Defaults

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



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

2.13 Set Supervisor / User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

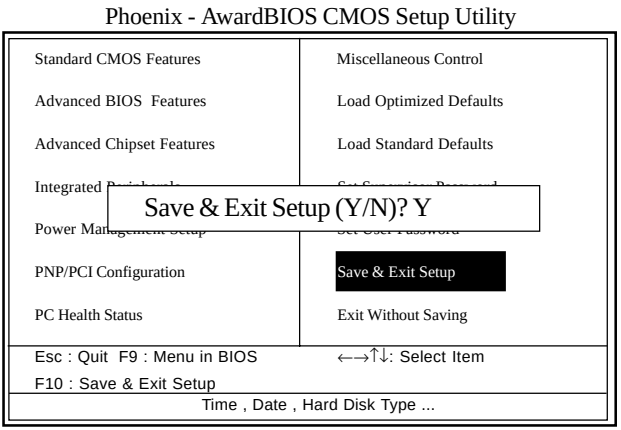
Enter Password

Type a password, up to eight characters, and press <Enter>. The password you type now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <ESC> to abort the selection and not enter a password. To disable the password, just press <Enter> when you are prompted to enter a password. A message will confirm that you wish to disable the password. Once the password is disabled, the system will boot and you can enter setup freely.

Password Disabled

If you select “System” at the Security Option of BIOS Features Setup Menu, you will be prompted for the password every time when the system is rebooted, or any time when you try to enter Setup. If you select “Setup” at the Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

2.14 Save & Exit Setup

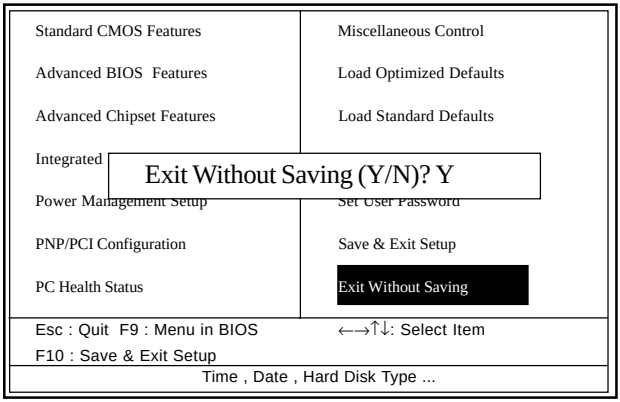


Typing “Y” will quit the Setup Utility and save the user setup value to RTC CMOS RAM.

Typing “N” will return to the Setup Utility.

2.15 Exit Without Saving

Phoenix - AwardBIOS CMOS Setup Utility



Typing “Y” will quit the Setup Utility without saving to RTC CMOS RAM.

Typing “N” will return to the Setup Utility.

Chapter 3
Drivers & Utilities

3. Drivers & Utilities

There are motherboard drivers and utilities included in the disc attached in this motherboard package. You don't have to install all of them for booting your system. But after you have finished the hardware installation, you have to install an operation system (such as windows 98) before you are able to install any drivers or utilities.

Note: Please be aware of the different Procedures for installing drivers for Windows 98/ME/XP/2000 .

3.1 Auto-run Menu

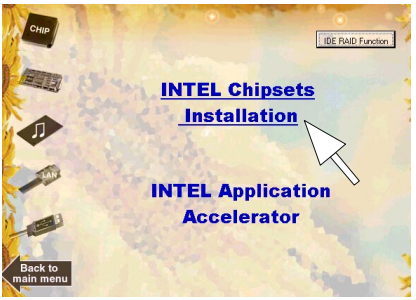
You can use the auto-run menu in the driver CD attached in the motherboard package. Then choose the utility or driver and select model name. The autorun starting screen loks like below:

3.2 Installing Intelinf

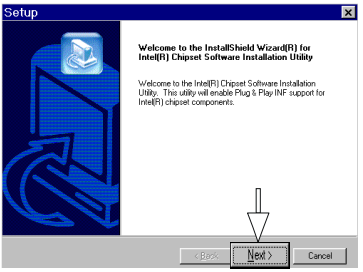
Enter the item "INTEL CHIPSET INSTALLATION" of the Autorun program and install Intelinf for Intel Chipsets support and Plug-n-Play INF support. Follow the illustrations below :

(1)
Click "Driver" Item.

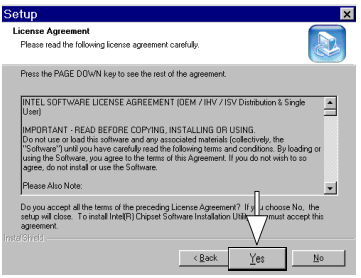
(2)
Click "Chipset" Item.



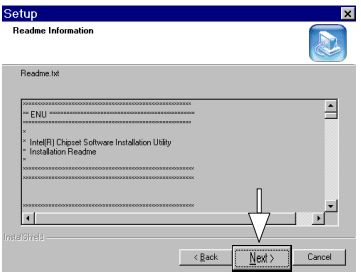
(3)
Click "Intel Chipsets Installation" Item.



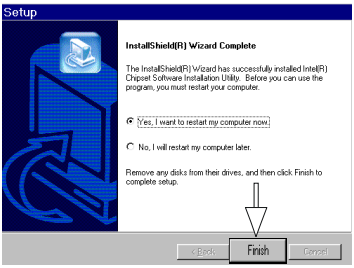
(4)
Click "Next".



(5)
Click "Yes".



(6)
Click "Next".



(7)
Click "Finish".

Note: Install the Intel INF Driver before the Intel Application accelerator Driver.

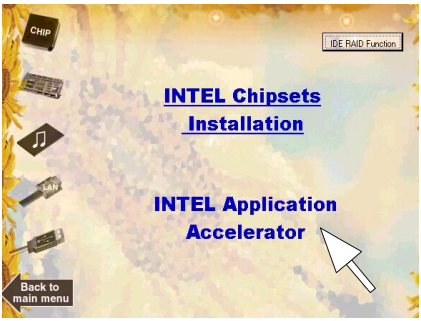
3.3 Installing Application Accelerator

Install the Intel Application Accelerator for Microsoft Windows 98/98SE/ME/NT4.0/2000/XP. The program is designed to improve performance of the storage sub-system and overall system performance.

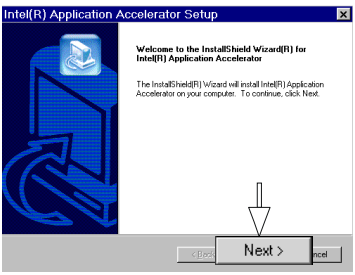
We recommend that:
If your operating system is Windows 98, 98SE or NT4.0, please install the Ultra Driver. Also, please do not inst-all the IAA and Ultra Driver together.

(1)
Click "Driver" Item.

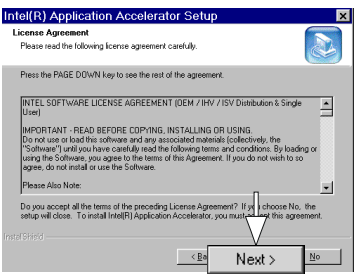
(2)
Click "Chipset" Item.



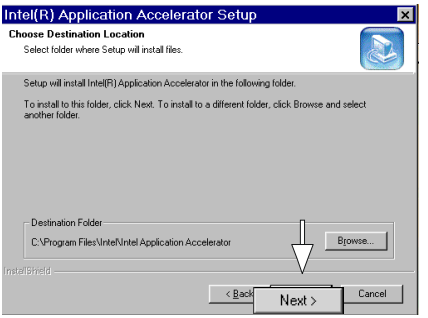
(3)
Click "Intel Application Accelerator" Item.



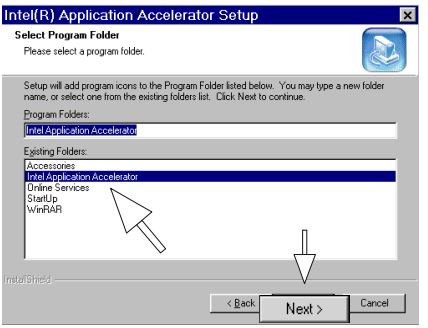
(4)
You will see a pop-up dialogue of IAA installation.



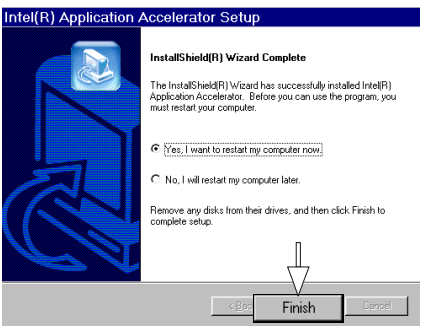
(5)
Click "Next".



(6)
Click "Yes".



(7)
Click "Next".



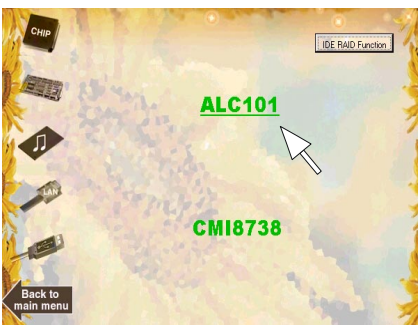
(8)
Click "Next".

3.4 Installing Audio Driver

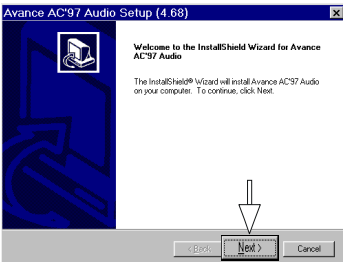
This motherboard comes with an AC97 CODEC and the sound controller is in Intel South Bridge chipset. You can find the sound driver from this Auto-run menu.

(1)
Click "Driver" Item.

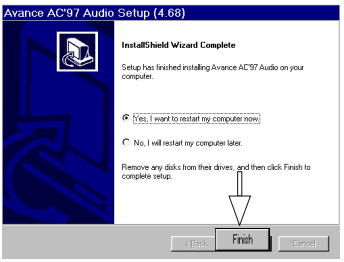
(2)
Click "Audio" Item.



(3)
Click "ALC101" Item.



(4)
Click "Next".

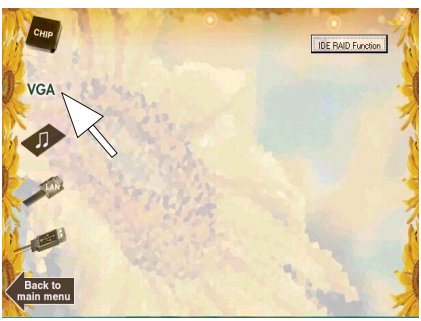


(5)
Click "Finish".

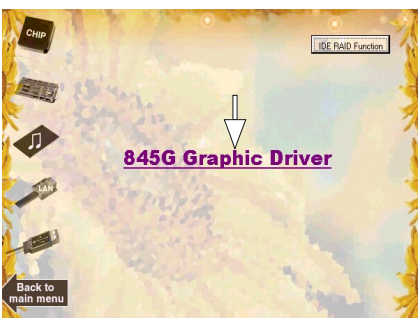
3.5 Installing VGA Driver

A 2D/3D graphics interface is already integrated into Intel 845GL chipset. Follow the illustration below to install the integrated VGA driver:

(1)
Click "Driver" Item.

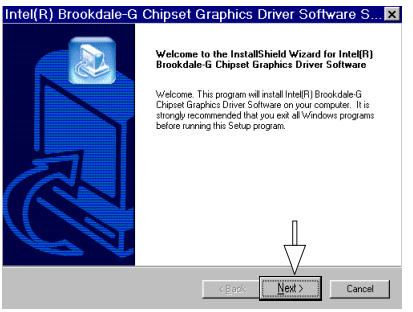


(2)
Click "VGA" Item.

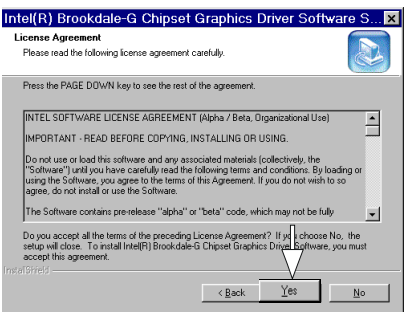


(3)
Click "845G Graphic" Item.

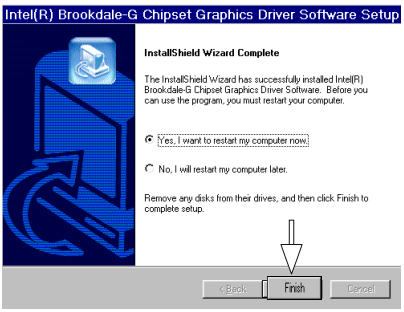
(4)
Select your O.S.



(5)
Click "Next".



(6)
Click "Yes".

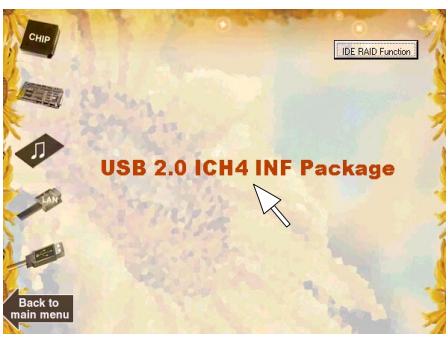


(5)
Click "Finish".

3.6 Installing USB 2.0 Device

Please read carefully the pop-up text file after click the above item. The text file will notify you how to install your USB devices in your O.S. completely.

(1)
Click the "USB " item.



(1)
Click the "USB 2.0 ICH4 INF Package".

Note: Please note that this USB 2.0 is only available in Win 2000 and Win XP.

3.6.1 Install USB2.0 driver for Win 2000

檔案(F) 編輯(E) 格式(O) 說明(H)

```
Install USB2.0 Driver windows 2000 Driver Manually

1. Right click the "My Computer" icon on the desktop.
   When the menu appears click "Properties" item.

2. Select "Hardware" page and then click [Device Manager] button.

3. View device by type and find "PCI Universal Serial Bus" node.

4. Right click the "PCI Universal Serial Bus" node.

5. When the menu appears, click the "Properties" item.

6. Please select [Driver] page and click "Update Driver..." button.

7. When the "Upgrade Device Driver Wizard" window appears, click Next to continue.

8. Select "Search for a suitable driver for my device(recommended)" option and click Next.
   Choose "Specify a location" check box and then click Next.

   or you can also select "Display a list of the known drivers for this device so that
   I can choose a specific driver" option and click Next. Click "Have Disk..." button.

9. Type or browse the path (CD ROM Drive):\MB\USB2.0\USB2 to the driver.

10. Follow the instruction to complete the installation.
```

3.6.2 Install USB2.0 driver for Win XP

檔案(F) 編輯(E) 格式(O) 說明(H)

```
Install USB2.0 Driver windows XP Driver Manually

1. Click the "Start" button.

2. Right click the "My Computer".
   When the menu appears click "Properties" item.

3. Select "Hardware" page and then click [Device Manager] button.

4. View device by type and find "PCI Universal Serial Bus" node.

5. Right click the "PCI Universal Serial Bus" node.

6. When the menu appears, click the "Properties" item.

7. Please select [Driver] page and click "Update Driver..." button.

8. When the "Upgrade Device Driver Wizard" window appears, click Next to continue.

9. Select "Search for a suitable driver for my device(recommended)" option and click Next.
   Choose "Specify a location" check box and then click Next.

  or you can also select "Display a list of the known drivers for this device so that
   I can choose a specific driver" option and click Next. Click "Have Disk..." button.

10. Type or browse the path (CD-ROM Drive):\MB\USB2.0\USB2 to the driver.
```