Chapter 1

Thank you for your buying Foxconn's 650/651M02 series motherboard. This series of motherboard is one of our newest products, and offers superior performance, reliability and quality, at a reasonable price. This motherboard adopts the advanced SiS 650GX/ 651+962L/962 chipsets, providing users a computer platform with a high integration-compatibility-performance price ratio.

This chapter includes the following information:

- Main Features
- Motherboard Layout

Main Features

Size

- mATX form factor of 9.6" x 8.5"

Microprocessor

- Supports Intel® Pentium®4 Socket 478 (Willamette/Northwood) processors
- Supports Intel® Celeron® Socket 478 (Willamette/Northwood) processors
- Supports FSB at 400MHz/533MHz (FSB 533MHz Supported on 651M02 only)
- Supports up to 2.8GHz Socket 478 Northwood processor

Chipset

- 650M02: SiS650GX (North Bridge) + 962L/962 (South Bridge)
- 651M02: SiS651 (North Bridge) + 962L/962 (South Bridge)

System Memory

- Provides two 184-pin DDR DIMM Sockets
- Supports for PC 1600/PC 2100/PC 2700 (PC 2700 supported on 651M02 only)
- Supports for 64Mb/128Mb/256Mb/512Mb technology up to 2GB

USB 2.0 Ports

- Supports hot plug
- Six USB 2.0 ports (four rear panel ports, one onboard USB headers providing two extra ports)
- Supports wake-up from S3 (optional), S1
- Supports USB 2.0 Protocol, 480 Mbps transmission rate

Onboard 1394 (optional)

- Support hot plug
- With rate of transmission at 400Mbps
- Self-configured addressing
- Can connect with 2 independent 1394 units synchronously at most, such as HDD, CD-ROM

Onboard LAN

- Supports 10/100Mbit/sec Ethernet
- 10/100M LAN interface built-in on board

Onboard IDE

- Supports up to four independent drives
- Supports Ultra DMA 133/100/66
- Two IDE interfaces can connect with four IDE units, including hard disk and CD-ROM/DVD-ROM etc.

Onboard I/O

- One FDD interface; supports two 3.5" or 5.25" FDDs with 360K/720K/1.2M/ 1.44M/2.88M format
- One high-speed 16550 COM interface with 16-byte FIFO buffer
- One infrared interface (optional)
- Four USB ports (with 6 ports supported at most)
- one 1394 port (with 2 ports supported at most) (optional)
- One parallel port supporting SPP/EPP/ECP mode
- All I/O ports can be enabled/disabled in the BIOS setup

Onboard Audio 6 channel

- AC' 97 2.2 Specification Compliant
- Supports S/PDIF output (optional)
- Onboard Line-in jack, Microphone jack, Line-out jack
- Supports 5.1 channels audio (optional)

Onboard Graphics

- Supports integrated VGA display functions
- Supports external AGP 2.0 specification; supports 4X display cards

BIOS

- Licensed advanced AWARD (Phoenix) BIOS, supports flash ROM, plug-and play ready
- Supports IDE, CD-ROM, SCSI HDD and USB device boot up

Green Function

- Supports ACPI (Advanced Configuration and Power Interface)
- Supports five system modes—S0 (normal), S1 (power on suspend), S3 (suspend to RAM)(optional), S4 (Suspend to disk – depends on OS), and S5 (soft-off)

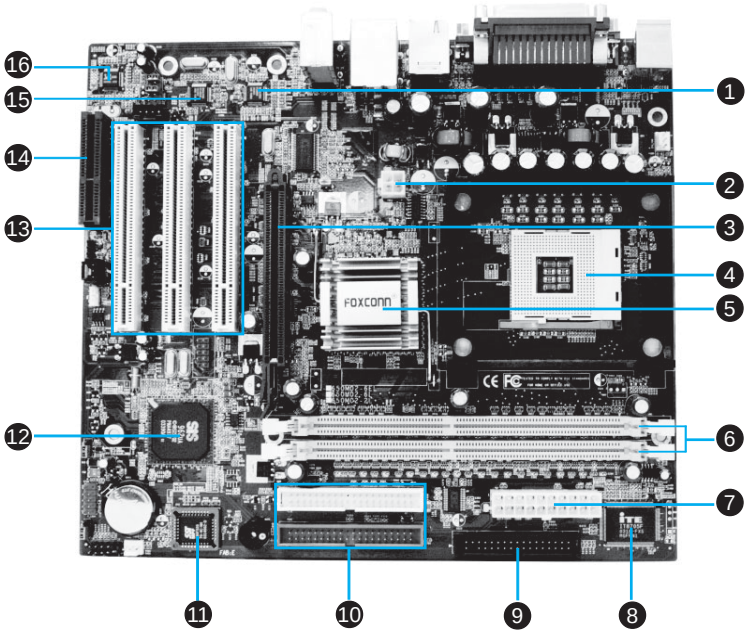
Expansion Slots

- Three PCI slots
- One AGP slot
- One CNR slot (optional)

Advanced Features

- PCI 2.2 Specification Compliant
- Supports Windows 98/2000/ME/XP soft-off
- Supports Wake-on-LAN

Motherboard Layout



Note:

The above motherboard layout is provided for reference only; please refer to the physical motherboard.

1 1394 PHY (optional)

The RTL8801B is IEEE 1394a 100/200/400 Mbps 2-Port Cable Transceiver/ Arbiter (PHY) Chip. Provides two fully compliant cable ports at 100/200/400 Mbps.

2 ATX 12V connector

This power connector connects the 4-pin 12V plug from the ATX 12V power supply.

3 AGP slot

This Accelerated Graphics Port (AGP) slot supports 1.5V AGP4X mode graphics cards for 3D graphical applications.

4 CPU socket

A 478-pin surface mount, Zero Insertion Force (ZIF) Socket for the Intel® Pentium® 4 processor, with 533/400MHz system bus that allows 4.2GB/s and 3.2GB/s data transfer rates, respectively.

5 North Bridge controller

The SiS650GX/651 controller integrates a high performance host interface for the Intel® Pentium® 4 processor, a memory controller and SiS MuTIOL technology.

6 DDR DIMM sockets

These two 184-pin DIMM sockets support up to 2GB system memory using unbuffered non-ECC PC2700 (651M02 series only)/PC2100/PC1600 DDR DIMMs.

7 ATX power connector

This 20-pin connector connects to an ATX power supply. The power supply must have at least 1A on the +5V standby lead (+5VSB).

8 Super I/O controller

The Pin Count (LPC) interface provides the commonly used Supper I/O functionality. The chipset supports a high-performance floppy disk controller for a 360K/720K/1.44M/2.88M floppy disk drive, a multi-mode parallel port, one serial port, the mouse and keyboard interface and a Flash ROM interface.

9 Floppy disk connector

This connector accommodates the provided ribbon cable for the floppy disk drive. One side of the connector is slotted to prevent incorrect insertion of the floppy disk cable.

10 IDE connectors

These dual-Channel bus master IDE connectors support Ultra DMA 133/100/66, PIO Modes 3 & 4 IDE devices. Both the primary (blue) and secondary (white) connectors are slotted to prevent incorrect insertion of the IDE ribbon cable.

11 Flash Rom

This 2Mb firmware contains the programmable BIOS program.

12 South Bridge controller

Referred to as the SiS962/SiS962L MuTIOL Media I/O, this controller integrates the audio controller with AC'97 interface, Ethernet MAC, Dual Universal Serial Bus Host controller, IDE Master/Slave controllers, and the MuTIOL Connect to PCI Bridge.

13 PCI Slots

These three 32-bit PCI 2.2 expansion slots support bus master PCI cards like SCSI or LAN cards with 133MB/s maximum throughput.

14 CNR Slot (optional)

This slot is specifically designed for the Communication and Networking Riser (CNR) card. The CNR supports V.90 analog modem, CNR audio card, etc.

15 LAN PHY

The SiS 962L/962 integrated 10/100Mbps Fast Ethernet with Realtek external PHY supports your local area networking needs.

16 6-Channel Audio CODEC (optional)

The ALC655 is an AC'97 CODEC that allows 6-Channel audio playback. The audio CODEC provides six DAC channel for 5.1 surround sound, S/PDIF output and Line-in stereo inputs, integrated headphone amplifier, greater than 90dB dynamic range with the jack sense and jack enumeration feature.

Chapter 2

This chapter introduces the hardware installation process, including the installation of the CPU, memory, power supply, slots, rear panel and pin headers, and the mounting of jumpers. Caution should be exercised during the installation of these modules. Please refer to the motherboard layout prior to any installation and read the contents in this chapter carefully.

This chapter includes the following information:

- CPU
- Memory
- Power supply
- Rear Panel
- Connectors
- Expansion Slots
- Jumpers

Notes:

Take note of the following precautions before you install motherboard Components or change any motherboard settings.

1. Unplug the power cord form the wall socket before touching any component.
2. Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
3. Hold components by the edges to avoid touching the ICs on them.
4. Whenever you uninstall any component, place it on a grounded Antistatic pad or in the bag that came with the component.
5. Before you install or remove any component, ensure that the ATX power supply is switched off. Failure to do so may cause severe damage to the motherboard, peripherals, and /or components.

CPU

This motherboard supports socket 478 CPU with a FSB 400/533 MHz (FSB 533MHz Supported on 651M02 only).

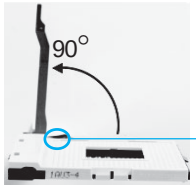
Attention:

The CPU pins must be properly aligned with the slots in the socket, otherwise the CPU may be damaged.

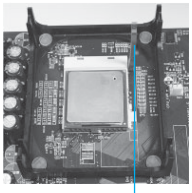
Installation of CPU

Follow these steps to install a CPU.

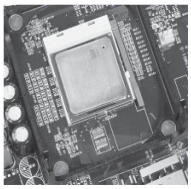
1. Unlock the socket by pressing the lever sideways, then lift it up to a 90^0 angle.



2. Align the cut edge to the gap in the base of the socket. Carefully insert the CPU into the socket until it fits in place.



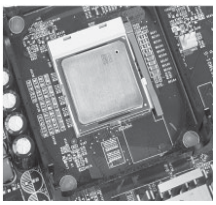
3. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



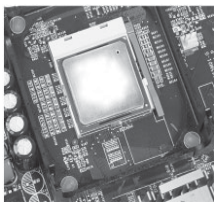
Installation of CPU Fan

New technology allows processors to run at higher and higher frequencies. To avoid problems arising from high-speed operation, for example, overheating, you need to install the proper fan. The following procedures are provided for reference only, please refer to your CPU fan user guide to install it.

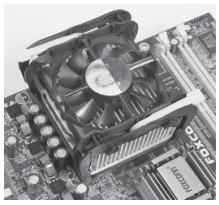
1. Locate the CPU slot and base for fan on the motherboard.



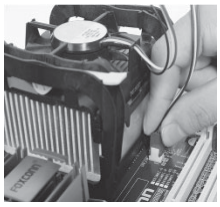
2. Apply a little silica gel to the back of the CPU.



3. Attach the fan to the base.



4. Connect the power fan's power cable to the appropriate 3-pin connector on the motherboard.

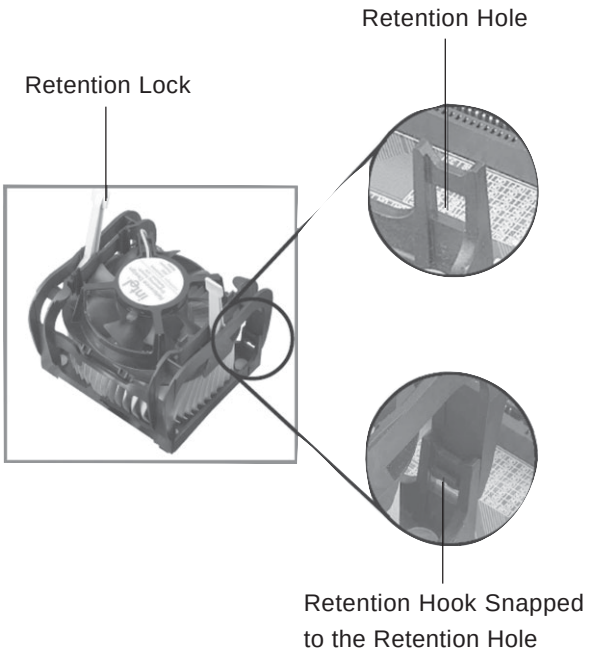


Note :

Excessive temperatures will severely damage the CPU and system. Therefore, make sure that the cooling fan works normally at all times in order to prevent overheating and damaging to the CPU.

Attention:

1. Position the fan with the retention mechanism on top of the heatsink. Align and snap the four hooks of the retention mechanism to the holes on each corner of the module base.
2. Make sure that the fan and retention mechanism assembly perfectly fits the heatsink and module base, otherwise you cannot snap the hooks into the holes.



Warning:

Keep the retention locks lifted upward while fitting the retention mechanism to the module base.

Attention:

1. Push down the locks on the retention mechanism to secure the heatsink and fan to the module base.
2. When secure, the retention locks should point to opposite directions.

CPU Qualified Vendor List

The following table lists the CPU modules that have been tested and qualified for use with this motherboard.

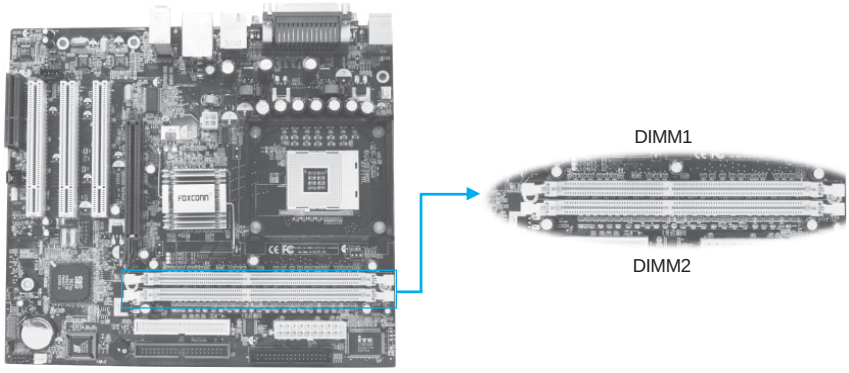
Vendor	Type	FSB	Frequence
Intel	Pentium (Willamette)	400 MHz	1.4G, 1.5G, 1.6G, 1.7G, 1.8G
Intel	Celeron (Willamette)	400 MHz	1.7G, 1.8G
Intel	Pentium (Northwood)	400 MHz	2.0G, 2.2G, 2.4G, 2.5G, 2.6G
Intel	Celeron (Northwood)	400 MHz	2.0G, 2.1G, 2.2G, 2.4G
Intel	Pentium (Northwood)	533 MHz	2.4G, 2.53G, 2.66G, 2.8G

Note:

Make sure to use only the tested and qualified CPU listed above. Other CPU manufactured by other vendors may not be suitable for this motherboard.

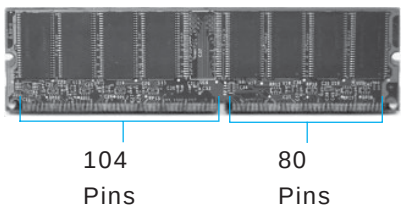
Memory

This motherboard includes two 184-pin slots with 2.5 V DDR DIMM, so you can install PC 1600/PC 2100/PC 2700 (PC 2700 supported on 651M02 only) memory module. You must install at least one memory module to ensure normal operation.

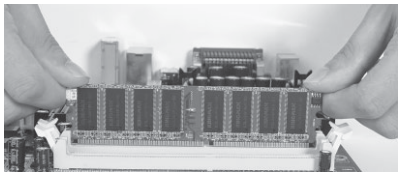


Installation of DDR Memory

1. There is only one gap in the center of the DIMM slot, and the memory module can be fixed in one direction only. Unlock a DIMM slot by pressing the module clips outward.
2. Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot.



3. The plastic clips at both sides of the DIMM slot will lock automatically.



Warning :

Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, especially the memory devices, otherwise your motherboard or the system memory might be seriously damaged.

Memory Qualified Vendor List

The following table lists the Memory modules that have been tested and qualified for use with this Motherboard.

Vender	Type	Size
Infineon	PC2100 (DDR 266)	256M
Infineon	PC2700 (DDR 333)	256M, 512M
Micron	PC2100 (DDR 266)	128M, 256M, 512M
Micron	PC2700 (DDR 333)	128M, 256M, 512M
Samsung	PC2100 (DDR 266)	128M, 256M
Samsung	PC2700 (DDR 333)	256M, 512M, 1G
Kingmax	PC2100 (DDR 266)	128M, 256M
Kingmax	PC2700 (DDR 333)	256M, 512M
Kingston	PC2100 (DDR 266)	256M
Kingston	PC2700 (DDR 333)	256M, 512M
Hynix	PC2100 (DDR 266)	128M, 256M
Hynix	PC2700 (DDR 333)	256M, 512M
Transcend	PC2100 (DDR 266)	256M
Transcend	PC2700 (DDR 333)	256M, 512M
Apacer	PC2100 (DDR 266)	256M

Vender	Type	Size
Apacer	PC2700 (DDR 333)	256M, 512M
A-DATA	PC2100 (DDR 266)	256M
A-DATA	PC2700 (DDR 333)	256M
Nanya	PC2100 (DDR 266)	128M, 256M, 512M
Nanya	PC2700 (DDR 333)	128M, 256M, 512M
Winbond	PC2700 (DDR 333)	256M, 512M

Note:

Make sure to use only the tested and qualified DDR DIMMS listed above. Other DDR DIMMs manufactured by other vendors may not be suitable for this motherboard.

Power Supply

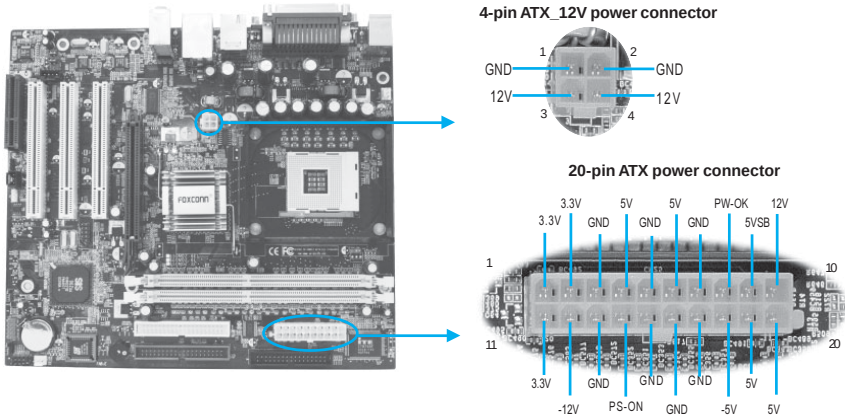
This motherboard uses an ATX power supply. In order to avoid damaging any devices, make sure that they have been installed properly prior to connecting the power supply.

20-pin ATX power connector: PWR1

PWR1 is the ATX power supply connector. Make sure that the power supply cable and pins are properly aligned with the connector on the motherboard. Firmly plug the power supply cable into the connector and make sure it is secure.

4-pin ATX_12V Power Connector: PWR2

The ATX power supply connects to PWR2 and provides power to the CPU.

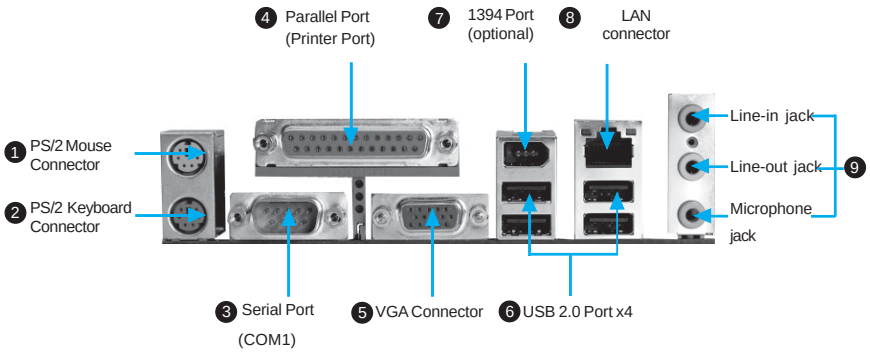


Attention:

You have to press the power button for more than four seconds if you change the default “Instant Off” setting to “Delay 4 Sec” from the “Power Button Override” option in the BIOS Power Management Setup.

Rear Panel

This motherboard provides the ports as below:



❶PS/2 Mouse Connector
This green 6-pin connector is for a PS/2 Mouse.

❷PS/2 Keyboard Connector
This purple 6-pin connector is for a PS/2 keyboard.

❸Serial Port (COM1)
This 9-pin COM1 port is for pointing devices or other serial devices.

❹Parallel Port (Printer Port)
This 25-pin port connects a parallel printer, a scanner, or other devices.

❺VGA Connector
The VGA connector is for output to a VGA-compatible device.

❻USB 2.0 ports
These four Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

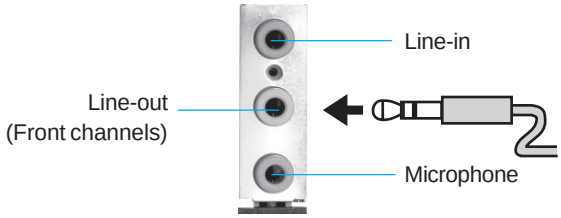
❼1394 port (optional)
This digital interface supports electronic devices such as digital cameras, scanners and printers.

❽ LAN connector

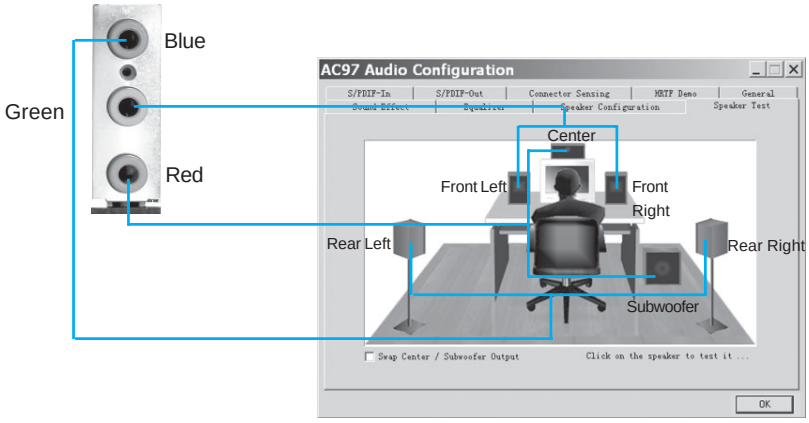
This port allows connection to a Local Area Network (LAN) through a network hub.

❾ Line-in jack, Line-out jack, Microphone jack

When using a two-Channel sound source, the Line-out jack is used to connect to speakers or headphones; the Line-in port connects to an external CD player, tape player or other audio device. The Microphone jack is used to connect to the microphone.



When using a 6-Channel sound source (optional), connect the front speaker to the green audio output; connect the surround sound speaker to the blue audio input; connect the center speaker/subwoofer to the red Microphone input, as shown in the following figure:

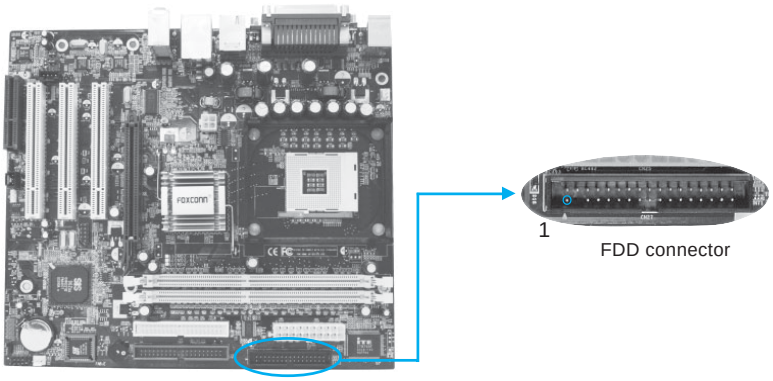


Connectors

This motherboard includes connectors for FDD, IDE HDD, USB, CPU fan, system fan and others.

FDD

This motherboard includes a standard FDD connector, supporting 360K, 720K, 1.2M, 1.44M and 2.88M FDDs.

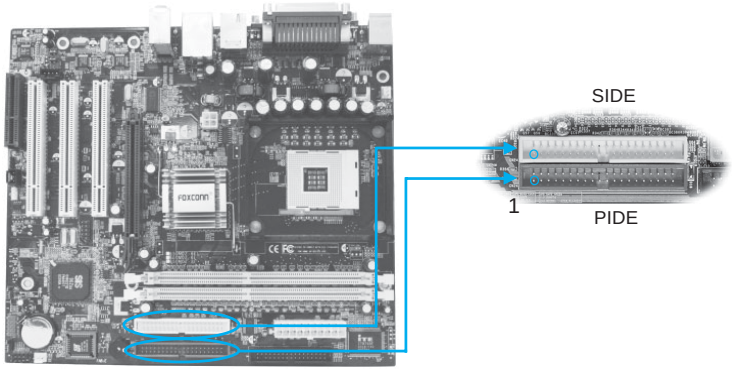


HDD connectors: PIDE & SIDE

These connectors supports the provided UltraDMA 133/100/66 IDE hard disk ribbon cable. Connect the cable's blue connector to the primary (recommended) or secondary IDE connector, then connect the gray connector to the Ultra DMA 133/100/66 slave device (hard disk drive) and the black connector to the Ultra DMA 133/100/66 master device. If you install two hard disks, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

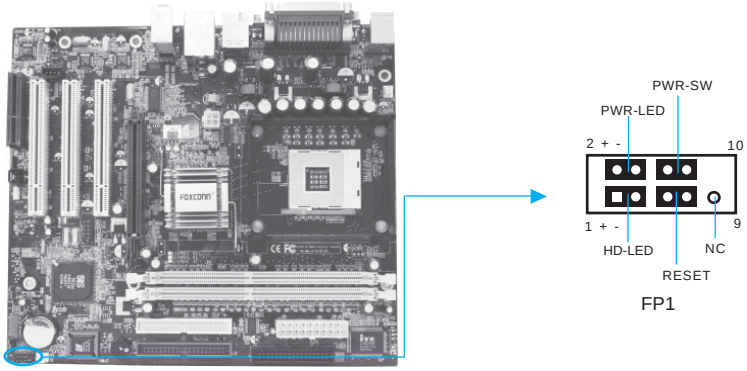
Attention:

Ribbon cables are directional, therefore, make sure to always connect with the cable on the same side as pin 1 of the PIDE/ SIDE or FDD connector on the motherboard.



Front Panel Connector: FP1

This motherboard includes one connector for connecting the front panel switch and LED indicators.



Hard Disk LED Connector (HD-LED)

The connector connects to the case's HDD indicator LED indicating the activity status of IDE hard disk.

Reset Switch (RESET)

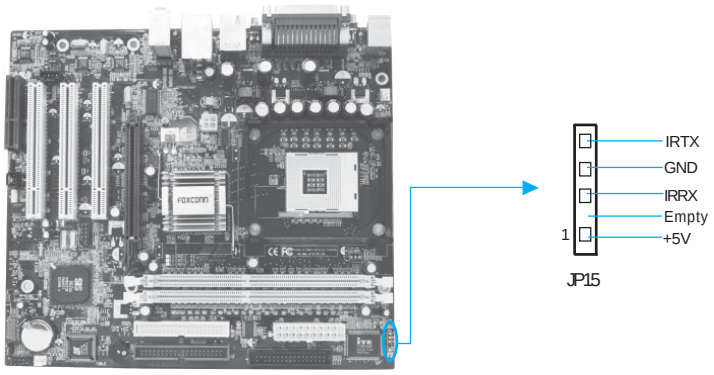
Attach the connector to the Reset switch on the front panel of the case; the system will restart when the switch is pressed.

Power LED Connector (PWR LED)

Attach the connector to the power LED on the front panel of the case. The Power LED indicates the power supply's status. When the system is in S0 status, the LED is on. When the system is in S1 status, the LED is blink; When the system is in S3 or S5 status, the LED is off.

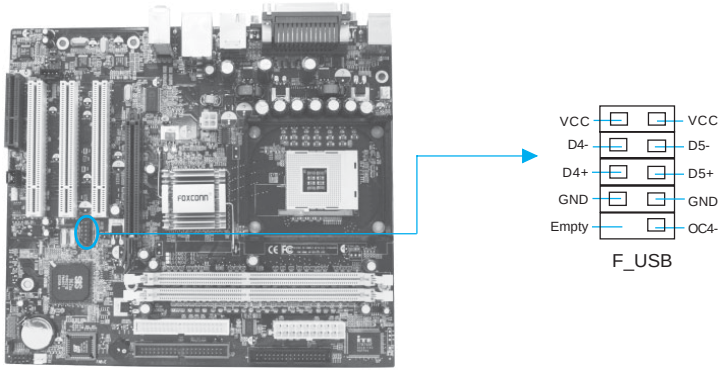
IrDA Header: JP15 (optional)

This connector supports wireless transmitting and receiving device. Before using this function, configure the settings for IR Address, IR Mode and IR IRQ from the "INTEGRATED PERIPHERALS" section of the CMOS SETUP.



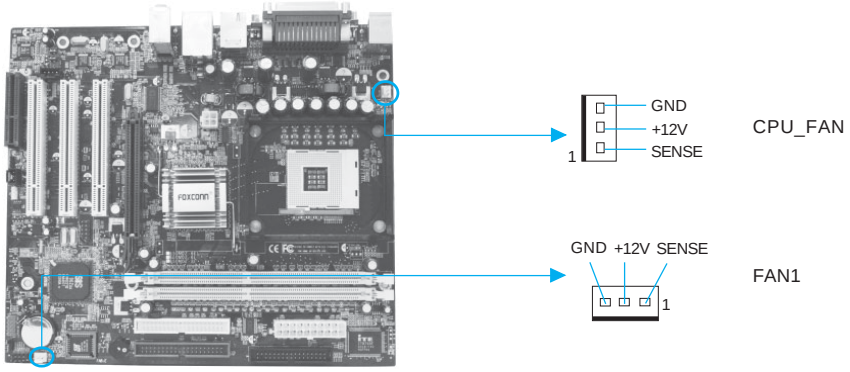
USB Headers: F_USB

Besides four USB ports on the rear panel, the series of motherboards also have one 10-pin headers on board which may connect to front panel USB cable (optional) to provide additional two USB ports.



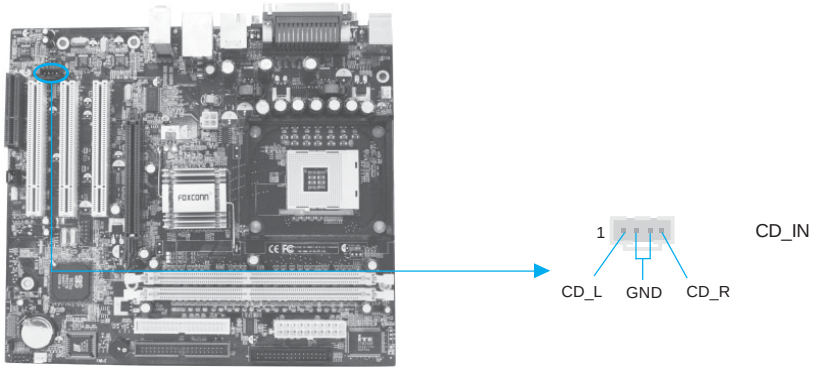
Fan Connectors (CPU_FAN, FAN1)

The speed of CPU_FAN and FAN1 can be detected and viewed in “PC Health Status” section of the CMOS SETUP. These fans will be automatically turned off after the system enters suspend mode.



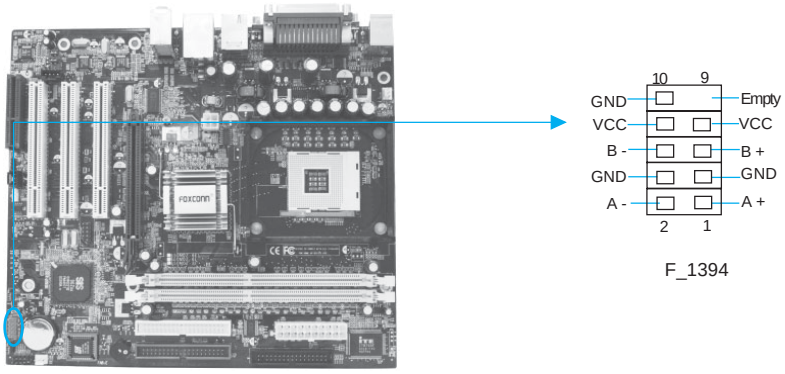
Audio Connectors (CD_IN)

CD_IN is Sony standard CD audio connector, it can be connected to a CD-ROM drive through a CD audio cable.



1394 Header: F_1394 (optional)

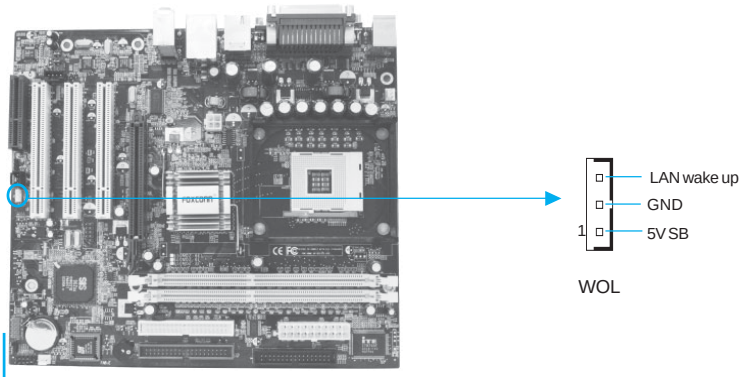
The 1394 expansion cable can be connected to either the front (provided that the front panel of your chassis is equipped with the appropriate interface) or real panel of the chassis.



F_1394

Wake-Up On LAN: WOL

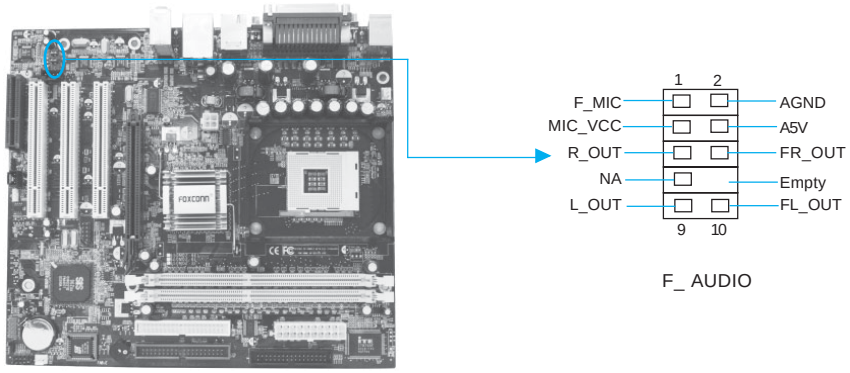
Through the Wake-Up On LAN function, a wake event occurring from the network can wake up the system. To utilize this function, please be sure an ATX 12V power supply with a 5VSB line capable of delivering a current of at least 720mA, and a LAN adapter which supports this function. Then connect the header to the relevant connector on the LAN adapter, set “MACPME Power Up Control” and “PCIPME Power Up Control” to enable in the “POWER MANAGEMENT SETUP” section of the CMOS SETUP. Save and exit, then boot the operating system once to make sure this function takes effect.



WOL

Audio Interface: F_AUDIO

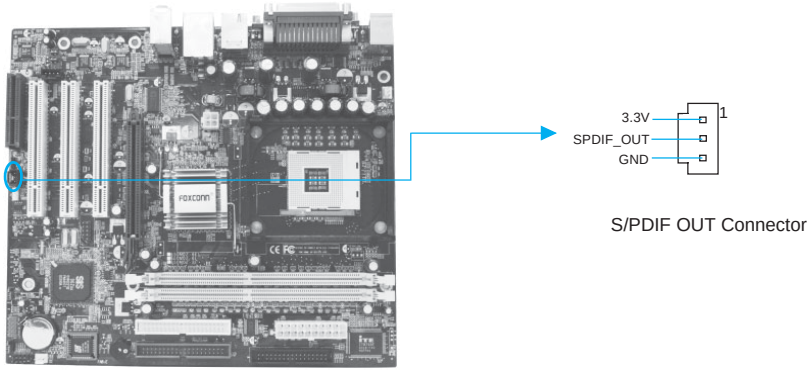
The audio interface provides two kinds of audio output choices: the Front Audio, the Rear Audio. Their priority is sequenced from high to low (Front Audio to Rear Audio). If headphones are plugged into the front panel of the chassis (using the Front Audio), then the Line-out (Rear Audio) on the rear panel will not work. If you do not want to use the Front Audio, pin 5 and 6, pin9 and 10 must be short, and then the signal will be sent to the rear audio port.



F_ AUDIO

S/PDIF OUT Connector (optional)

The S/PDIF out connector is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder.



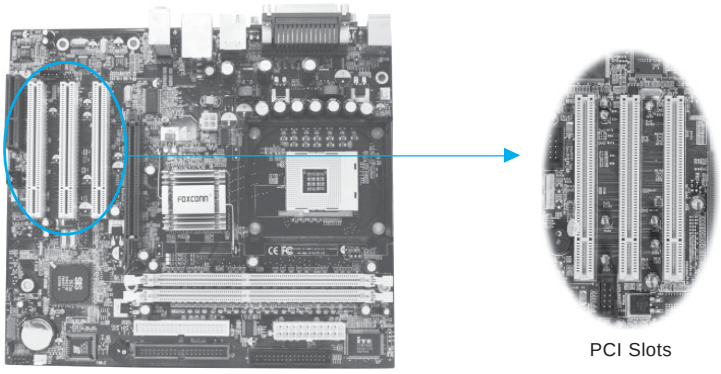
S/PDIF OUT Connector

Slots

This motherboard includes three 32-bit Master PCI bus slots, one AGP slot, one CNR slot (optional).

PCI Slots

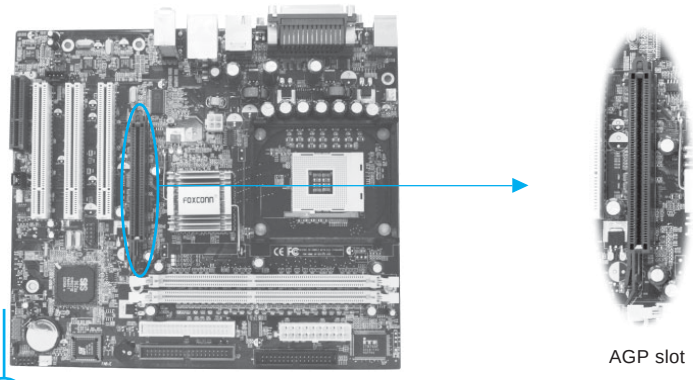
The expansion cards can be installed in the three PCI slots. When you install or take out such cards, you must make sure that the power plug has been pulled out. Please read carefully the instructions provided for such cards, and install and set the necessary hardware and software for such cards, such as the jumper or BIOS setup.



PCI Slots

AGP Slot

This motherboard has an AGP slot that supports AGP 2.0 AGP cards. AGP is an interfacing specification designed to display 3D images. It provides a specialized 66MHz, 32-bit channel to allow the graphic controller to directly access the master memory and supports 4X speeds.



AGP slot

Warning:

Note the notches on the card golden fingers to ensure that they fit the AGP slot on your motherboard.

Installing an expansion card

1. Before installing the expansion card, read carefully the documentation that came with it and make the necessary hardware settings for the card.
2. Make sure to unplug the power cord before adding or removing expansion cards.
3. Remove the bracket opposite the slot that you intend to use.
4. Align the card connector with the slot and press firmly until the card is com pletely seated in the slot.
5. Secure the card to the chassis with the screw you removed earlier.

AGP Qualified Vendor List

The following table lists the CPU modules that have been tested and qualified for use with this Motherboard.

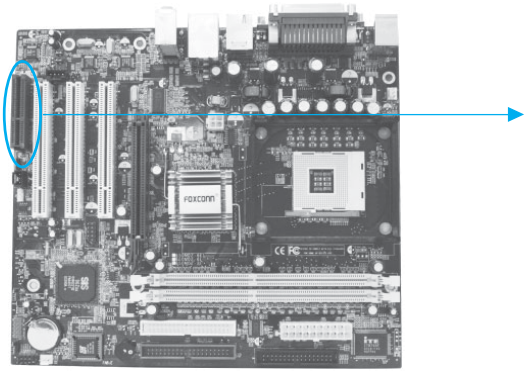
Vender	Type	Video Memory
CP	ATI Radeon 7000	128M DDR/SDRAM
Leadtek	S650	128M DDR/SDRAM
UNIKA	GeForce 4 MX400	32M SDRAM
ELSA	GLADIAC920	32M SDRAM
ELSA	Geforce2 MX400	32M DDR
ECS	315T	32M SDRAM
CP	ATI 7500	32M SDRAM
GIGA-BYTE	GeForce2 MX	32M SDRAM

Note:

Make sure to use only the tested and qualified AGP card listed above. Other AGP card manufactured by other vendors may not be suitable for this Motherboard.

CNR Slot (optional)

The motherboard provides this Communication and Networking Riser (CNR) interface which can support audio and modem functions. Mechanically the CNR shares the PCI3 slot, thus when you insert the CNR card, the neighboring PCI3 slot cannot be used.



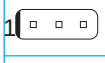
CNR slot

Jumpers

The users can change the jumper settings on this motherboard if needed. This section explains how to use the various functions of this motherboard by changing the jumper settings. Users should read the following contents carefully prior to modifying any jumper settings.

Description of Jumpers

1. For the jumpers on this motherboard, pin 1 can be identified by the silk-screen printed " ▲ " next to it. However, in this manual, pin 1 is simply labeled as "1".
2. The following table provides some explanation of the jumper pin settings. User should refer to this when adjusting jumper settings.

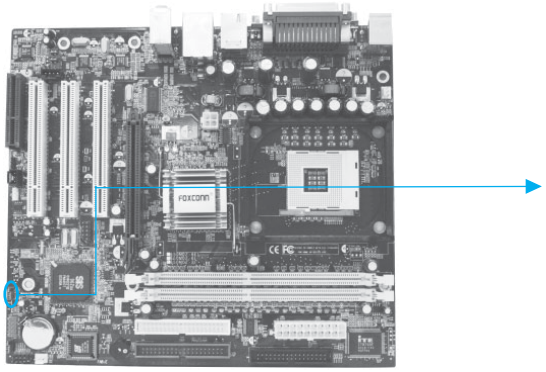
Jumper	Diagram	Definition	Description
		**1-2**	Set pin1 and pin2 closed
		**2-3**	Set pin2 and pin3 closed
		Closed	Set the pin closed
		Open	Set the pin opened

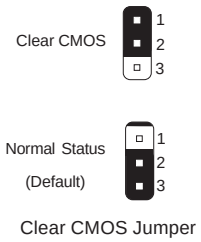
Clear CMOS Jumper: CLS_CMOS

This motherboard uses the CMOS RAM to store all the set parameters. The CMOS can be cleared by removing the CMOS jumper.

How to clear CMOS?

1. Turn off the AC power supply and connect pins 1 and 2 together using the jumper cap.
2. Return the jumper setting to normal (pins 2 and 3 together with the jumper cap).
3. Turn the AC power supply back on.





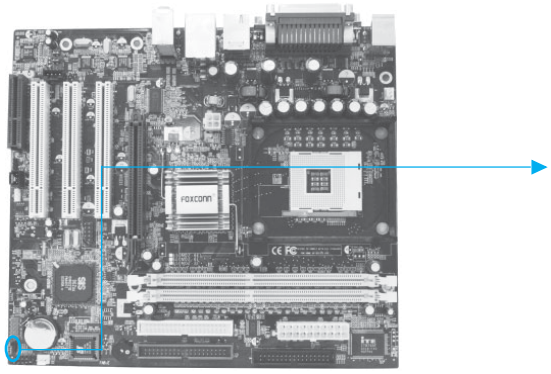
Clear CMOS Jumper

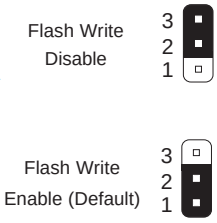
Warning:

1. Disconnect the power cable before adjusting the jumper settings.
2. Do not clear the CMOS while the system is turned on.

BIOS-Protection Jumper: FWH_EN

If the jumper FWH_EN is set as disable (Pin2 & Pin3), the system BIOS is protected from being attacked by serious virus, such as the CIH virus. You will be unable to flash the BIOS to the motherboard when the system BIOS is protected.

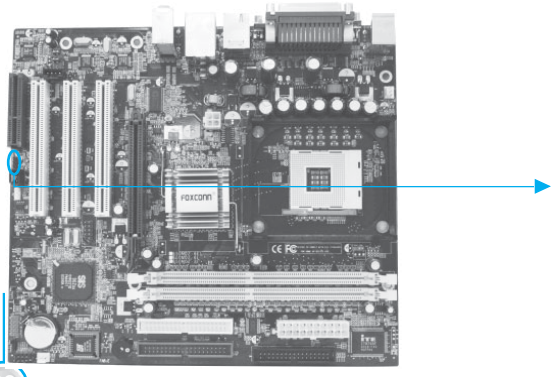


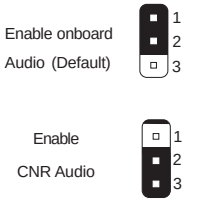


BIOS-Protection Jumper

CNR Audio Selection Jumper: J22

This jumper is used to set enable or disable CNR audio. The default status for J22 is set to disable (Pin1 & Pin2), then you cannot use the CNR audio and onboard audio is available. If you want to use the CNR audio, set J22 to enable (Pin2 & Pin3).





CNR Audio
Selection Jumper

Starting up for the first time

1. After making all the connections, replace the system case cover.
2. Be sure that all switches are off.
3. Turn on the devices in the following order.
   a. Monitor
   b. External SCSI devices (starting with the last device on the chain)
   c. System power
4. After applying power Led on the system front panel case, lights up. For ATX power supplies, the system LED lights up when you press the ATX power switch. If your monitor complies with green standards or if it has a power standby feature, the monitor LED may light up or switch between orange and green after the system LED turns on. The system then runs the power-on tests. While the tests are running, the BIOS beeps or additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.
5. Power on the computer and hold down <Delete> to enter BIOS Setup. Follow the instructions in Chapter 3.

Powering off the computer

1. Using the OS shut down function

If you use windows 98/ME/2000/XP, click the Start button, click Shut Down, then the OK button to shut down the computer. The power supply should turn off after Windows shuts down.

2.Using the dual function power switch

While the system is ON, pressing the power switch for less than 4 seconds puts the system to sleep mode or to soft-off mode, depending on the BIOS setting. Pressing the power switch for more than 4 seconds lets the system enter the soft-off mode regardless of the BIOS setting.

Chapter 3

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

You have to run the Setup Program when the following cases occur:

1. An error message appears on the screen during the system POST process.
2. You want to change the default CMOS settings.

This chapter includes the following information:

- Enter BIOS Setup
- Main Menu
- Standard CMOS Features
- BIOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PnP/PCI Configurations
- PC Health Status
- Frequency/Voltage Control
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor/User Password
- Save & Exit Setup
- Exit Without Saving

Enter BIOS Setup

The BIOS is the communication bridge between hardware and software, correctly setting up the BIOS parameters is critical to maintain optimal system performance. Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <Del> key to enter the AWARD BIOS CMOS Setup Utility.

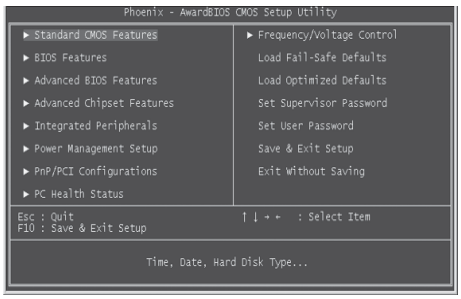
Press TAB to show POST screen, DEL to enter SETUP.

Note:

We do not suggest that you change the default parameters in the BIOS Setup and we shall not be responsible for any damage that result from any changes that you make.

Main Menu

The main menu allows you to select from the list of setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept or go to the sub-menu.



Main Menu

The items in the main menu are explained as below:

Standard CMOS Features

The basic system configuration can be set up through this menu.

BIOS Features

The special features can be set up through this menu.

Advanced BIOS Features
The advanced system features can be set up through this menu.

Advanced Chipset Features
The values for the chipset can be changed through this menu, and the system performance can be optimized.

Integrated Peripherals
All onboard peripherals can be set up through this menu.

Power Management Setup
All the items of Green function features can be set up through this menu.

PnP/PCI Configurations
The system's PnP/PCI settings and parameters can be modified through this menu.

PC Health Status
This will display the current status of your PC.

Frequency/Voltage Control
Frequency and voltage settings can be adjusted through this menu.

Load Fail-Safe Defaults
The default BIOS settings can be loaded through this menu.

Load Optimized Defaults
The optimal performance settings can be loaded through this menu, however, the stable default values may be affected.

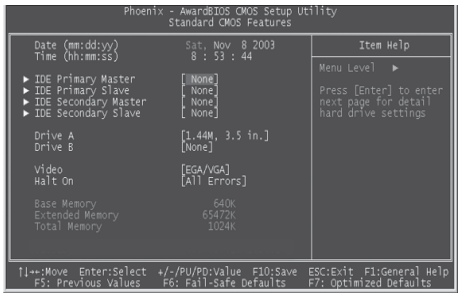
Set Supervisor/User Password
The supervisor/user password can be set up through this menu.

Save & Exit Setup
Save CMOS value settings to CMOS and exit setup.

Exit Without Saving
Abandon all CMOS value changes and exit setup.

Standard CMOS Features

This sub-menu is used to set up the standard CMOS features, such as the date, time, HDD model and so on. Use the arrow keys select the option to set up, and then use the <PgUp> or <PgDn> keys to choose the setting values.



Standard CMOS Features Menu

Date

This option allows you to set the desired date (usually as the current day) with the <day><month><date><year> format.

Day—weekday from Sun. to Sat., defined by BIOS (read-only).

Month—month from Jan. to Dec..

Date—date from 1st to 31st, can be changed using the keyboard.

Year—year, set up by users.

Time

This option allows you to set up the desired time (usually the current day) with <hour><minute><second> format.

IDE Primary/Secondary Master/Slave

These categories identify the HDD types of 2 IDE channels installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and Manual. “None” means no HDD is installed or set; “Auto” means the system can auto-detect the hard disk when booting up; by choosing “Manual” and changing Access Mode to “CHS”, the related information should be entered manually. Enter the information directly from the keyboard and press < Enter>:

Cylinder	number of cylinders	Head	number of heads
Precomp	write pre-compensation	Landing Zone	landing zone
Sector	number of sectors		

Award (Phoenix) BIOS can support 3 HDD modes: CHS, LBA and Large or Auto mode.

CHS	For HDD<528MB
LBA	For HDD>528MB & supporting LBA (Logical Block Addressing)
Large	For HDD>528MB but not supporting LBA
Auto	Recommended mode

Drive A/B

This option allows you to select the kind of FDD to be installed, including "None", [360K, 5.25 in], [1.2M, 5.25 in], [720K, 3.5 in], [1.44M, 3.5 in] and [2.88 M, 3.5 in].

Video

The following table is provided for your reference in setting the display mode for your system.

EGA/VGA	Enhanced Graphics Adapter / Video Graphic Array. For EGA, VGA, SEGA, SVGA, or PGA monitor adapters.
CGA 40	Color Graphic Adapter, powering up in 40 column mode.
CGA 80	Color Graphic Adapter, powering up in 80 column mode.
MONO	Monochrome adapter, including high resolution monochrome adapters.

Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

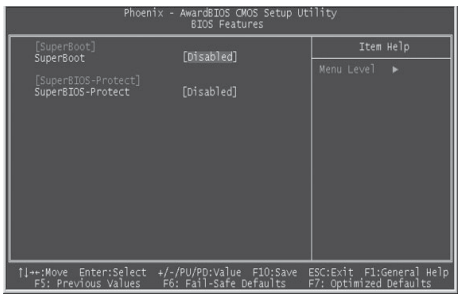
All Errors	Whenever the BIOS detects a nonfatal error, the system will stop and you will be prompted.
No Errors	The system boot will not stop for any errors that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; but it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; but it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error, but it will stop for all other errors.

Memory

This is a Display-Only Category, determined by POST (Power On Self Test) of the BIOS.

Base Memory	The BIOS POST will determine the amount of base (or conventional) memory installed in the system.
Extended Memory	The BIOS determines how much extended memory is present during the POST.
Total Memory	Total memory of the system.

BIOS Features



BIOS Features Menu

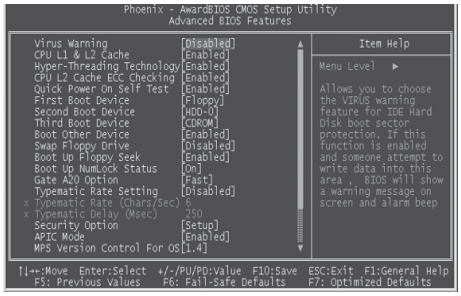
❖ **[SuperBoot] SuperBoot (Default: Disabled)**

SuperBoot allows system-relevant information to be stored in CMOS upon the first normal start-up of your PC, and the relevant parameters will be restored to help the system start up more quickly on each subsequent start-up. The available setting values are: Disabled and Enabled.

❖ **[SuperBIOS-Protect] SuperBIOS-Protect (Default: Disabled)**

SuperBIOS-Protect function protects your PC from being affected by viruses, e.g. CIH. The available setting values are: Disabled and Enabled.

Advanced BIOS Features



Advanced BIOS Features Menu

❖ **Virus Warning (Default: Disabled)**

Allows you to choose the VIRUS warning feature for IDE hard disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and an alarm will beep. The available setting values are: Disabled and Enabled.

Note: Such function provides protection to the start-up sector only; it does not protect the entire hard disk.

❖ **CPU L1 & L2 Cache (Default: Enabled)**

This option is used to turn on or off the L1 and L2 CPU cache. The available setting values are: Disabled and Enabled.

❖ **Hyper-Threading Technology (Default: Enabled)**

This option is used to turn on or off the Hyper-threading function of the CPU. The available setting values are: Disabled and Enabled.

Note: This function will not be displayed until a CPU that supports Hyper-Threading has been installed.

❖ **CPU L2 Cache ECC Checking (Default: Enabled)**

This option is used to enable or disable CPU L2 Cache ECC Checking. The available setting values are: Disabled and Enabled.

❖ **Quick Power On Self Test (Default: Enabled)**

Enable this option to shorten the power on testing (POST) and have your system start up faster. The available setting values are: Disabled and Enabled.

❖**First/Second/Third Boot Device (Default: Floppy/HDD-0/CDROM)**
This option allows you to set the boot device's sequence. The available setting values are: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN and Disabled.

❖**Boot Other Device (Default: Enabled)**
With this function set to enable, the system will to boot from some other devices if the first/second/third boot devices failed. The available setting values are: Disabled and Enabled.

❖**Swap Floppy Drive (Default: Disabled)**
If you have two floppy diskette drivers in your system, this option allows you to swap the assigned drive letters. The available setting values are: Disabled and Enabled.

❖**Boot Up Floppy Seek (Default: Enabled)**
If this option is enabled, BIOS will activate the floppy drive during the system boot and the drive's indicator will flash after the activation. The magnetic head will move back and forth from A to B. The available setting values are: Disabled and Enabled.

❖**Boot Up NumLock Status (Default: On)**
This option defines if the keyboard Num Lock key is active when your system is started. The available setting values are: On and Off.

❖**Gate A20 Option (Default: Fast)**
This option is used to set up the A20 signal control necessary for access to the 1MB memory. The available setting values are: Normal and Fast.

❖**Typematic Rate Setting (Default: Disabled)**
If this option is enabled, you can use the following two items to see the typematic rate and the typematic delay settings for your keyboard. The available setting values are: Disabled and Enabled.

❖**Typematic Rate (Chars/Sec) (Default: 6)**
Use this option to define how many characters per second a held-down key generated.

❖**Typematic Delay (Msec) (Default: 250)**
Use this option to define how many milliseconds must elapse before a held-down key beings generating repeat characters.

❖**Security Option (Default: Setup)**

When it is set to “Setup”, a password is required to enter the CMOS Setup screen; When it is set to “System”, a password is required not only to enter CMOS Setup, but also to start up your PC.

❖**APIC Mode (Default: Enabled)**

This option is used to enable or disable APIC functionality. The available setting values are: Disabled and Enabled.

❖**MPS Version Control For OS (Default: 1.4)**

This option is used to set up the version of MPS Table used in NT4.0 OS. The available setting values are: 1.1 and 1.4.

❖**OS Select For DRAM > 64MB (Default: Non-OS2)**

This option is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this option at the default.

❖**HDD S.M.A.R.T. Capability (Default: Disabled)**

This option is used to enable or disable the hard disk's S.M.A.R.T.(Self Monitoring Analysis And Reporting) capability. The available setting values are: Disabled and Enabled.

❖**Report No FDD For WIN 95 (Default: No)**

If you are using the Windows 95 and running a system with on floppy drive, select ”Yes” for this option to ensure compatibility with Windows 95 logo certification. The available setting values are: No and Yes.

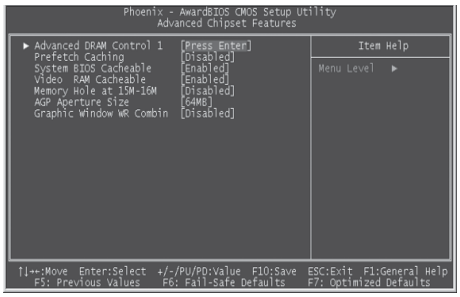
❖**Video BIOS Shadow (Default: Enabled)**

This option is used to enable or disable Video BIOS Shadow. If you enable this option, the video BIOS will be copied to RAM. Video shadow will increase the video speed.

❖**Small Logo (EPA) Show (Default: Disabled)**

This option allows you to enable or disable the EPA logo. The available setting values are: Disabled and Enabled.

Advanced Chipset Features



Advanced Chipset Features Menu

❖ **Advanced DRAM Control 1**

Press enter to set the items about advanced DRAM control 1. Please refer to page 43.

❖ **Prefetch Caching (Default: Disabled)**

This option allows you to enable or disable prefetch caching. The available setting values are: Enabled and Disabled.

❖ **System BIOS Cacheable (Default: Enabled)**

Select “Enabled” to allow caching of the system BIOS which may improve performance. If any other program writes to this memory area, a system error may result. The available setting values are: Enabled and Disabled.

❖ **Video RAM Cacheable (Default: Enabled)**

Select “Enabled” to allow caching of the Video BIOS which may improve performance. If any other program writes to this memory area, a system error may result. The available setting values are: Enabled and Disabled.

❖ **Memory Hole at 15M-16M (Default: Disabled)**

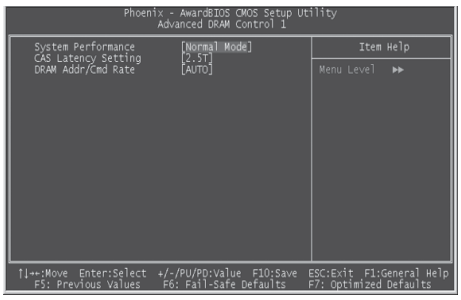
This option is used to determine whether the 15M-16M address field of memory is reserved for the ISA expansion card. The available setting values are: Enabled and Disabled.

❖ **AGP Aperture Size (Default: 64MB)**

This option defines the size of the aperture if you use an AGP graphics adapter. The aperture is a portion of the PCI memory address range dedicated for graphic memory address space. The available setting values are: 4 - 256MB

Note: This function does not work when onboard VGA is used.

❖ **Graphic Window WR Combin (Default: Disabled) (optional)**
This Item is used to disable or enable Graphic Window Write Combine mode.



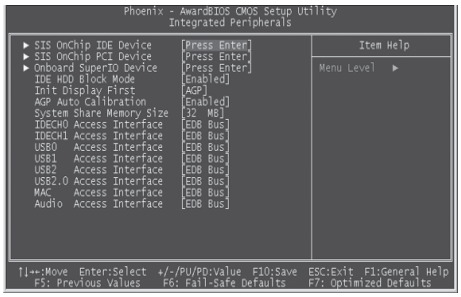
Advanced DRAM Control 1 Menu

❖ **System Performance (Default: Normal Mode)**
This option is used to set system performance mode. The available setting values are: Safe Mode, Normal Mode, Fast Mode, Turbo Mode, Ultra Mode.

❖ **CAS Latency Setting (Default: 2.5T)**
When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. The available setting values are: 2T, 2.5T, 3T.

❖ **DRAM Addr/Cmd Rate (Default: AUTO)**
This option used to set DRAM Addr/Cmd Rate. The available setting values are: AUTO, 1T, 2T.

Integrated Peripherals



Integrated Peripherals Menu

❖**SIS Onchip IDE Device**

Press enter to set onchip IDE device. Please refer to page 46.

❖**SIS Onchip PCI Device**

Press enter to set onchip PCI device. Please refer to page 47.

❖**Onboard SuperIO Device**

Press enter to set onboard SuperIO device. Please refer to page 48.

❖ **IDE HDD Block Mode (Default: Enabled)**

This option is used to set whether the IDE HDD Block Mode is allowed. The available setting values are: Disabled and Enabled.

❖ **Init Display First (Default: AGP)**

This option is used to set which display device will be used first when your PC starts up. The available setting values are: PCI Slot and AGP.

❖ **AGP Auto Calibration (Default: Enabled)**

This option is used to enable or disable AGP auto calibration. The available setting values are: Disabled and Enabled.

❖ **System Share Memory Size (Default: 32 MB)**

This option is used to set system share memory size. The available setting values are: 4 MB, 8 MB, 16 MB, 32 MB, 64 MB.

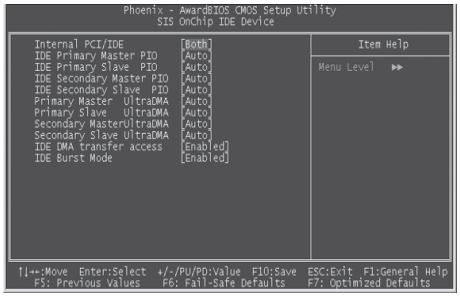
❖ **IDECH0/1 Access Interface (Default: EDB Bus)**

This option is used to set IDE CH0/1 access interface. The available setting values are: PCI Bus and EDB Bus.

❖ **USB0/1/2/2.0 Access Interface (Default: EDB Bus) (optional)**
This option is used to set USB0/1/2/2.0 Access Interface. The available setting values are: PCI Bus and EDB Bus.

❖ **MAC Access Interface (Default: EDB Bus)**
This option is used to set MAC access interface. The available setting values are: PCI Bus and EDB Bus.

❖ **Audio Access Interface (Default: EDB Bus)**
This option is used to set audio access Interface. The available setting values are: PCI Bus and EDB Bus.



SIS Onchip IDE Device Menu

❖ **Internal PCI/IDE (Default: Both)**

This option is used to set the ports of onboard IDE. The available setting values are: Disabled, Primary, Secondary and Both.

❖ **IDE Primary/ Secondary Master/Slave PIO (Default: Auto)**

These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is the best or select a PIO mode from 0-4.

❖ **Primary/Secondary Master/Slave UltraDMA (Default: Auto)**

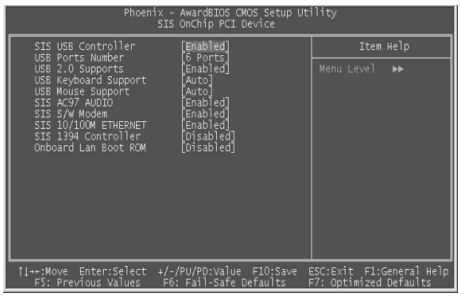
UltraDMA technology provides faster access to IDE devices. If you install a device that supports UltraDMA, change the appropriate items on this list to Auto. The available setting values are: Disabled and Auto.

❖ **IDE DMA transfer access (Default: Enabled)**

This option is used to enable or disable IDE DMA transfer access.

❖ **IDE Burst Mode (Default: Enabled)**

This option is used to enable or disable IDE burst mode.



SIS OnChip PCI Device Menu

❖ **SIS USB Controller (Default: Enabled)**

This option is used to enable or disable SIS USB controller.

❖ **USB Ports Number (Default: 6 ports) (optional)**

This option is used to set the USB ports number.

❖ **USB 2.0 Supports (Default: Enabled)**

This option is used to enable or disable USB 2.0.

❖ **USB Keyboard Support (Default: Auto)**

This option is used to set USB keyboard support. The available setting values are: Auto, Disabled, Enabled.

❖ **USB Mouse Support (Default: Auto)**

This option is used to set USB mouse support. The available setting values are: Auto, Disabled, Enabled.

❖ **SIS AC97 AUDIO (Default: Enabled)**

This option is used to enable or disable SIS AC97 AUDIO.

❖ **SIS S/W Modem (Default: Enabled)**

This option is used to enable or disable CNR Modem.

❖ **SIS 10/100M ETHERNET (Default: Enabled)**

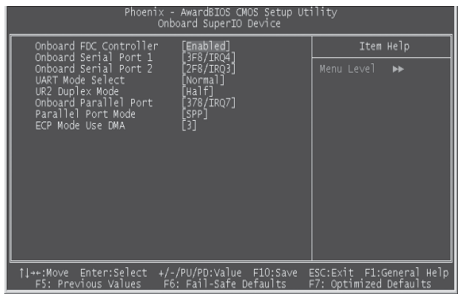
This option is used to enable or disable SIS 10/100M ethernet.

❖ **SIS 1394 Controller (Default: Disabled) (optional)**

This option is used to enable or disable SIS 1394 controller.

❖ **Onboard Lan Boot ROM (Default: Disabled)**

This option is used to decide whether to invoke the boot ROM of the onboard LAN chip. The available setting values are: Disabled and Enabled.



Onboard SuperIO Device Menu

❖**Onboard FDC Controller (Default: Enabled)**

This option is used to set whether the onboard FDC controller is enabled. The available setting values are: Disabled and Enabled.

❖**Onboard Serial Port1/2 (Default: 3F8/IRQ4 / 2F8/IRQ3)**

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 1/2.

Note: Do not try to set the same values for serial ports 1 and 2.

❖**UART Mode Select (Default: Normal)**

Use this option to select the UART mode. Setting values include Normal, IrDA, ASKIR and SCR. The setting value is determined by the infrared module installed on the board.

❖**UR2 Duplex Mode (Default: Half)**

This option is available when UART mode is set to either ASKIR or IrDA. This option enables you to determin the infrared function of the onboard infrared chip. The available setting values are: Half and Full.

❖**Onboard Parallel Port (Default: 378/IRQ7)**

This option allows you to determine onboard parallel port controller I/O address and interrupt request (IRQ). Setting values include: Disabled, 378/IRQ7, 278/IRQ5 and 3BC/IRQ7.

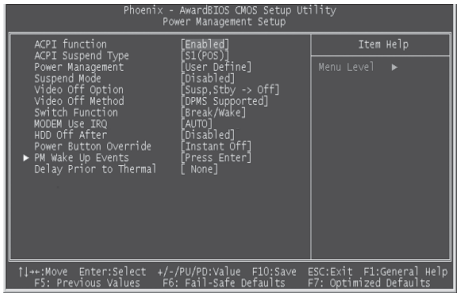
❖**Parallel Port Mode (Default: SPP)**

Select an address and corresponding interrupt for the onboard parallel port. Setting values include SPP, EPP, ECP, ECP+EPP.

❖**ECP Mode Use DMA (Default: 3)**

Select a DMA channel for the parallel port when using the ECP mode. This field is only configurable if Parallel Port Mode is set to ECP. The available setting values are: 3 and 1.

Power Management Setup



Power Management Setup Menu

❖ **ACPI function (Default: Enabled)**

ACPI stands for “Advanced Configuration and Power Interface”. ACPI is a standard that defines power and configuration management interfaces between an operating system and the BIOS. In other words, it is a standard that describes how computer components work together to manage system hardware. In order to use this function the ACPI specification must be supported by the OS (for example, Windows2000 or WindowsXP). The available setting values are: Enabled and Disabled.

❖ **ACPI Suspend Type (Default: S1(POS)) (optional)**

This option is used to set the energy saving mode of the ACPI function. When you select “S1 (P0S)” mode, the power will not shut off and the supply status will remain as it is, in S1 mode the computer can beresumed at any time. When you select “S3 (STR)” mode, the power will be cut off after a delay period. The status of the computer before it enters STR will be saved in memory, and the computer can quickly return to previous status when the STR function wakes. When you select “S1 & S3” mode, the system will automatically select the delay time.

❖ **Power Management (Default: User Define)**

This option is used to set the power management scheme. Available settings are: User Define, Min Saving, and Max Saving.

❖ **Suspend Mode (Default: Disabled)**

This option is used to set the idle time before the system enters into sleep status. The setting values are Disabled and 1 Min-1 hour.

❖ **Video Off Option (Default: Susp, Stby - > off)**

This option is used to set video off option. The setting values are Always On, Suspend -> off, Susp,Stby - > off, All Modes -> off.

❖ **Video Off Method (Default: DPMS Supported)**

This option is used to define the video off method. “Blank Screen” mode means that after the computer enters power saving mode, only the monitor will close, however, the vertical and horizontal scanning movement of the screen continues. When you select the “V/H SYNC + Blank” mode the vertical and horizontal scanning movement of screen stops when the computer enters power saving mode. “DPMS Supported” mode is a new screen power management system, and it needs to be supported by the monitor you’re using.

❖ **Switch Function (Default: Break/Wake)**

This option is used to enable or disable switch function to wake up. The setting values are Break/Wake and disabled.

❖ **MODEM Use IRQ (Default: AUTO)**

This option is used to set the IRQ in which the MODEM can use. The system will automatically wake up when the Modem receives an incoming call.

❖ **HDD Off After (Default: Disabled)**

This option is used to define the continuous HDD idle time before the HDD enters power saving mode. The setting values are Disabled and 1 Min -15 Min.

❖ **Power Button Override (Default: Instant Off)**

This option is used to set the power down method. This function is only valid for systems using an ATX power supply.

When “Instant Off” is selected, press the power switch to immediately turn off power.

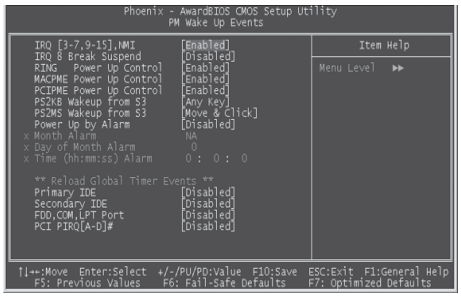
When “Delay 4 Sec” is selected, press and hold the power button for four seconds to turn off power.

❖ **PM Wake Up Events**

Press enter to set the items of PM wake up Events. Please refer to page 51.

❖ **Delay Prior to Thermal (Default: None)**

This option is used to set the delay time before the CPU enters auto thermal mode.The setting values are None, 1Min, 2 Min, 4 Min, 8 Min, 16 Min, 32 Min, 64 Min.



PM Wake UP Events Menu

❖**IRQ [3-7,9-15], NMI (Default: Enabled)**

This option is used to enable or disable IRQ[3-7,9-15], NMI.

❖**IRQ 8 Break Suspend (Default: Disabled)**

This option is used to enable or disable IRQ8 break suspend.

❖**RING Power Up Control (Default: Enabled)**

If this option is enable, it allows the system to resume from a software power down or power saving mode whenever there is an incoming call to an installed fax/modem. This function needs to be supported by the relevant hardware and software. The setting values are Disabled and Enabled.

❖**MACPME Power Up Control (Default: Enabled)**

This option is used to enable or disable the system to be waken up by onboard LAN.

❖**PCIPME Power Up Control (Default: Enabled)**

This option is used to enable or disable the system to be waken up by PCI card.

❖**PS2KB Wakeup from S3 (Default: Any key) (optional)**

This option used to set which action will wake up PS/2 keyboard from S3 status. The setting values are Any Key, Hot Key, Password.

❖**PS2MS Wakeup from S3 (Default: Move & Click) (optional)**

This option used to set which action will wake up PS/2 mouse from S3 status. The setting values are Disabled, Click, Move & Click.

❖**Power UP by Alarm (Default: Disabled)**

This option is used to set the timing of the start-up function. In order to use this function, the start-up password function must be canceled. Also, the PC power source must not be turned off. The setting values are Disabled and Enabled.

❖**Month Alarm**
This option is used to set the timing for the start-up month. The setting values contain 1 - 12 and NA.

❖**Day of Month Alarm**
This option is used to set the timing for the start-up day of the month. The setting values contain 0 - 31.

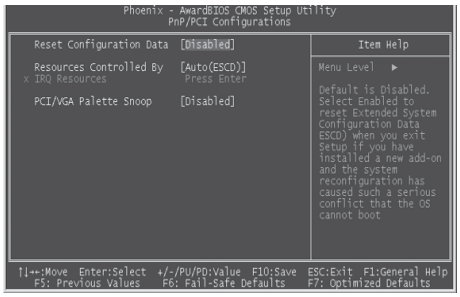
❖**Time (hh:mm:ss) Alarm**
This option is used to set the timing for the start-up time. The setting values contain hh:0 – 23; mm:0 – 59; ss:0 – 59.

❖**Primary/Secondary IDE (Default: Disabled)**
When these items are enabled, the system will restart the power saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels. The setting values are Disabled and Enabled.

❖**FDD, COM,LPT Port (Default: Disabled)**
when this option is enabled, the system will restart the power saving timeout counters when any activity is detected on the floppy disk drive, serial ports, or the parallel port.

❖**PCI PIRQ [A-D]# (Default: Disabled)**
When this option is disabled, any PCI devices set as the master will not power on the system. The setting values are Disabled and Enabled.

PnP/PCI Configurations



PnP/PCI Configurations Menu

❖ **Reset Configuration Data (Default: Disabled)**

This option is used to set whether the system is permitted to automatically distribute IRQ DMA and I/O addresses when each time the machine is turned on. The setting values are Disabled and Enabled.

❖ **Resources Controlled By (Default: Auto (ESCD))**

This option is used to define the system resource control scheme. If all cards you use support PnP, then select Auto (ESCD) and the BIOS will automatically distributes interruption resources. If the ISA cards you installed not supporting PnP, you will need to select “Manual” and manually adjust interruption resources in the event of hardware conflicts. However, since this motherboard has no ISA slot, this option does not apply.

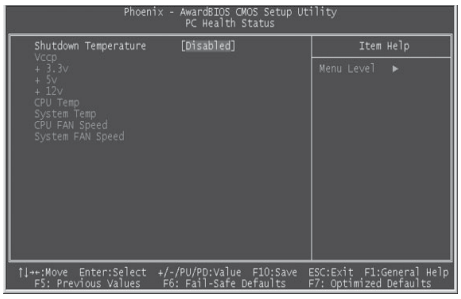
❖ **IRQ Resources**

Press the <Enter> key, then manually set IRQ resources.

❖ **PCI/VGA Palette Snoop (Default: Disabled)**

If you use a non-standard VGA card, use this option to solve graphic acceleration card or MPEG audio card problems (e.g., colors not accurately displayed). The setting values are Disabled and Enabled.

PC Health Status



PC Health Status

❖ **Shutdown Temperature (Default: Disabled)**

This option is used to set the system temperature upper limit. When the temperature exceeds the setting value, the motherboard will automatically cut off power to the computer. The setting values are and 60°C/140°F, 65°C/149°F, 70°C/158°F, Disabled.

❖ **Vccp/ +3.3v/+5v/+12v**

The current voltages will be automatically detected by the system.

❖ **CPU Temp**

The current CPU temperature will be automatically detected by the system.

❖ **System Temp**

The system temperature will be automatically detected by the system.

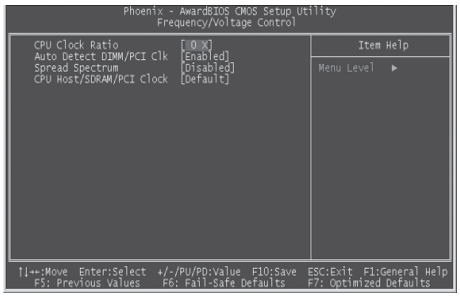
❖ **CPU FAN Speed**

The CPU fan speed will be automatically detected by the system.

❖ **System FAN Speed**

The system fan speed will be automatically detected by the system.

Frequency/Voltage Control



Frequency/Voltage Control Menu

❖ **CPU Clock Ratio (Default: based on CPU specifications)**

This option is used to set the ratio of an unlocked CPU. Using different CPU, the setting values are different.

Note: This option is invisible for locking frequency CPU.

❖ **Auto Detect DIMM/PCI Clk (Default: Enabled)**

This option is used to set whether the clock of an unused DIMM/PCI slot will be disabled to reduce electromagnetic interference. The setting values are Disabled and Enabled.

❖ **Spread Spectrum (Default: Disabled)**

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system. The setting values are Disabled and Enabled.

❖ **CPU Host/SDRAM/PCI Clock (Default: Default)**

This option is used to set CPU host clock/SDRAM clock/PCI clock. The setting values are 100/100/33MHz, 100/133/33MHz, 100/166/33MHz, 133/100/33MHz, 133/133/33MHz, 133/166/33MHz, Default.

Warning:

Be sure your selection is right. CPU over speed will be dangerous! We will not be responsible for any damages caused.

Load Fail-Safe Defaults

Press <Enter> to select this option. A dialogue box will pop up that allows you to load the default BIOS settings. Select <Y> and then press <Enter> to load the defaults. Select <N> and press <Enter> to exit without loading. The defaults set by BIOS set the basic system functions in order to ensure system stability. But if your computer cannot POST properly, you should load the fail-safe defaults to restore the original settings. Then carry out failure testing. If you only want to load the defaults for a single option, you can select the desired option the <F6> key.

Load Optimized Defaults

Select this option and press <Enter>, and a dialogue box will pop up to let you load the optimized BIOS default settings. Select <Y> and then press <Enter> to load the optimized defaults. Select <N> and press <Enter> to exit without loading. The defaults set by BIOS are the optimized performance parameters for the system, to improve the performance of your system components. However, if the optimized performance parameters are not supported by your hardware devices, it will likely cause system reliability and stability issues. If you only want to load the optimized default for a single option, select the desired option and press the <F7> key.

Set Supervisor/User Password

The access rights and permissions associated with the Supervisor password are higher than those of a regular User password. The Supervisor password can be used to start the system or modify the CMOS settings. The User password can also start the system. While the User password can be used to view the current CMOS settings, these settings cannot be modified using the User password. When you select the Set Supervisor/User Password option, the following message will appear in the center of the screen, which will help you to set the password:

Enter Password:

Enter your password, not exceeding 8 characters, then press <Enter>. The password you entered will replace any previous password. When prompted, key in the new password and press <Enter>.

If you do not want to set a password, just press <Enter> when prompted to enter a password, and in the screen the following message will appear. If no password is keyed in, any user can enter the system and view/modify the CMOS settings.

Password Disabled!!!
Press any key to continue …

Under the menu “Advanced BIOS Features Setup”, if you select “System” from the Security Option, you will be prompted to enter a password once the system is started or whenever you want to enter the CMOS setting program. If the incorrect password is entered, you will not be permitted to continue.
Under the menu “Advanced BIOS Features Setup”, if you select “Setup” from the Security Option, you will be prompted to enter a password only when you enter the CMOS setting program.

Save & Exit Setup

When you select this option and press <Enter>, the following message will appear in the center of the screen:

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

Press <Y> to save your changes in CMOS and exit the program; press <N> or <ESC> to return to the main menu.

Exit Without Saving

If you select this option and press <Enter>, the following message will appear in the center of the screen:

Quit Without Saving (Y/N)?N

Press <Y> to exit CMOS without saving your modifications; press <N> or <ESC> to return to the main menu.

Chapter 4

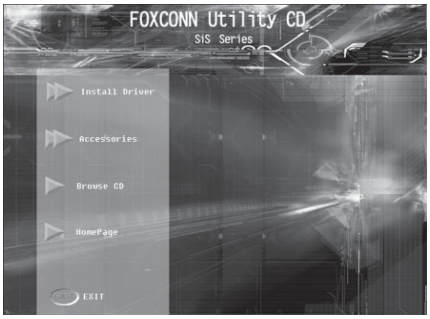
The utility CD that came with the motherboard contains useful software and several utility drivers that enhance the motherboard features.

This chapter includes the following information:

- Utility CD content
- Start to install drivers
  - Install IDE Driver
  - Install AGP Driver
  - Install VGA Driver
  - Install Direct X
  - Install USB2.0 Driver
  - Using 4-/6-Channel Audio
  - Install LAN Driver
- Install Norton Internet Security 2004

Utility CD content

This motherboard comes with one Utility CD. To begin using the CD, simply insert the CD into your CD-ROM drive. The CD will automatically displays the main menu screen.



1. Install Driver

Using this choice, you can install all the drivers for your motherboard. You should install the drivers in order and you need to restart your computer after the drivers all installed.

A. IDE Driver
B. AGP Driver
C. VGA Driver
D. Direct X
E. USB 2.0 Driver
F. Audio Driver
G. LAN Driver

2.Accessories

Use this option to install additional software programs.

A. SuperUtility
B. Adobe Reader
C. Norton Internet Security 2004

3. Browse CD

Click here to browse CD content.

4. Homepage

Click here to visit Foxconn motherboard homepage.

Note:

1. Install the latest patch first if your OS is Windows XP or Windows 2000.
2. Follow the CD screen order to install your motherboard drivers.

Start to Install divers

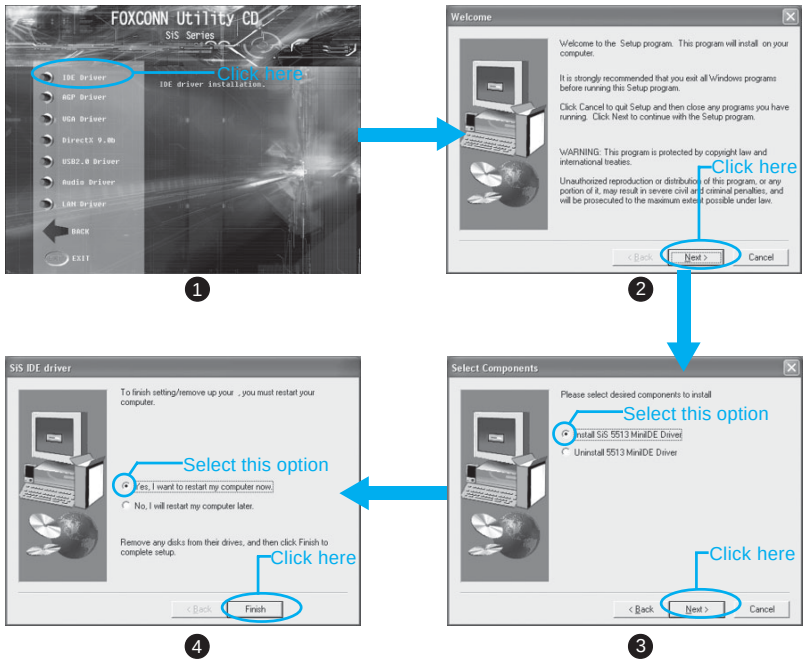
Select <Install Driver>, and click to enter the install driver screen. You can select the driver that you want to install and begin the setup steps.

Note:

The following setup steps are based on Windows XP environment. There may be some differences with other operating systems.

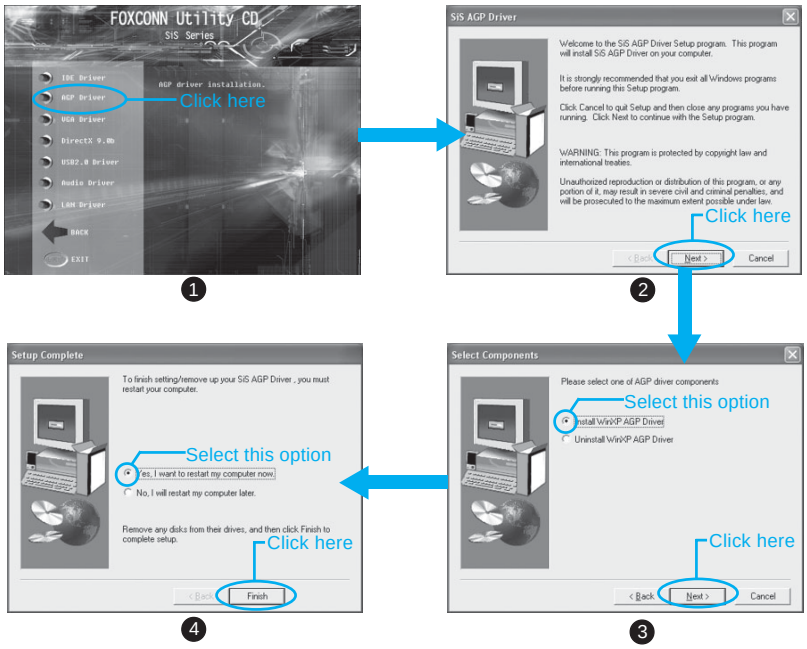
Install IDE Driver

Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <IDE Driver> to start the installation.



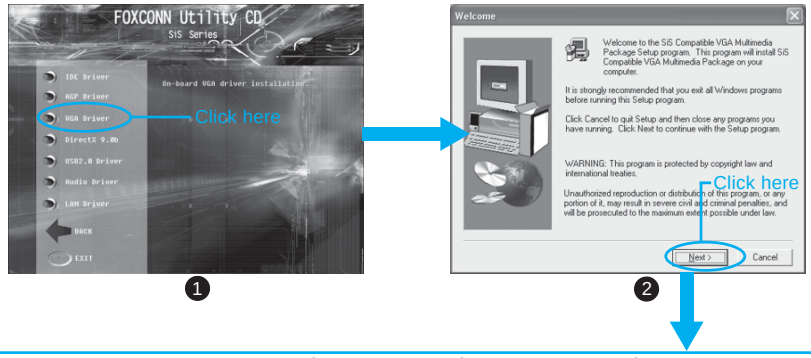
Install AGP Driver

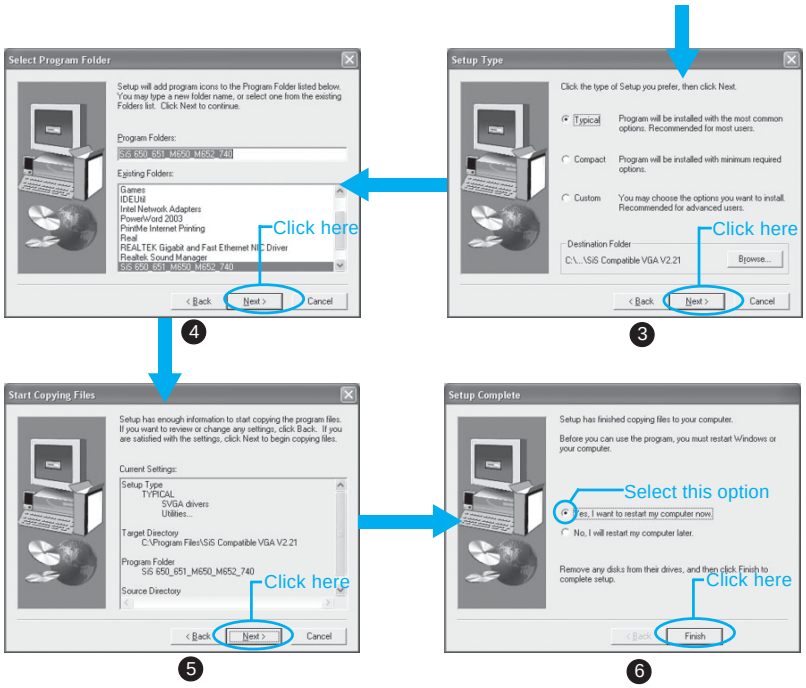
Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <AGP Driver> to start the installation.



Install VGA Driver

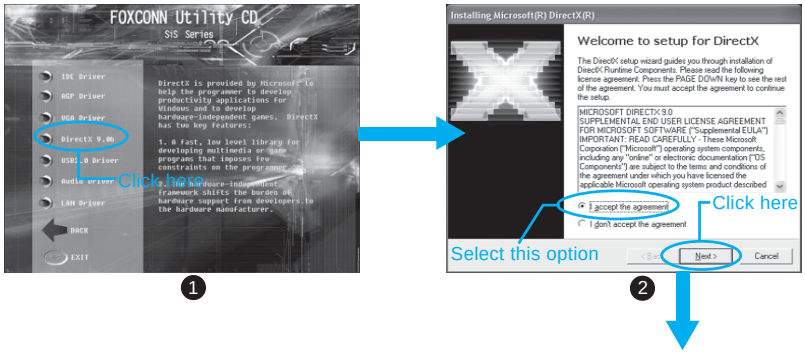
Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <VGA Driver> to start the installation.

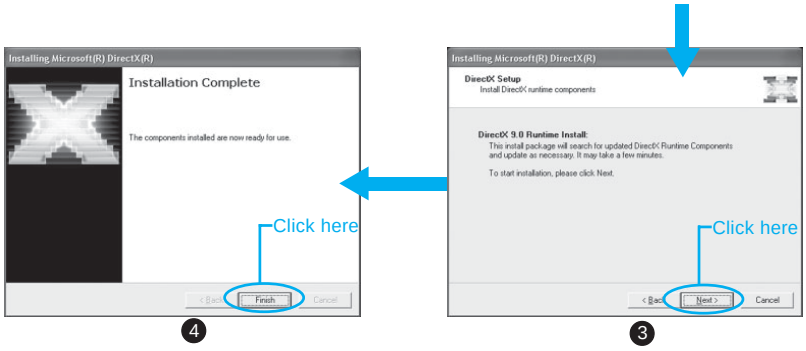




Install DirectX

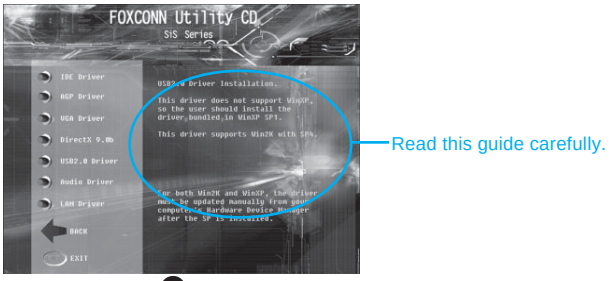
Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <DirectX> to start the installation.





Install USB 2.0 Driver

Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <USB 2.0 Driver> to open the USB 2.0 Installation guide. Please read the guide carefully and select the relevant installation method.

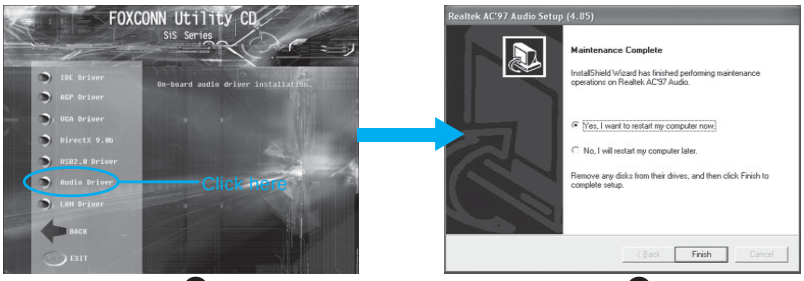


Using 4-/6-Channel Audio

The motherboard is equipped with the Realtek ALC655 chip, which provides support for 6-Channel audio output, including 2 front, 2 rear, 1 center and 1 subwoofer channel. ALC655 allows the board to attach 4 or 6 speakers for a better surround sound effect. This section will tell you how to install and use the 4-/6-Channel audio function on the board.

Install the Audio Driver

You need to install the driver for the Realtek ALC655 chip before you can use the 4-/6-Channel audio function. Follow the procedures described below to install the drivers for different operating systems.



Attaching Speakers

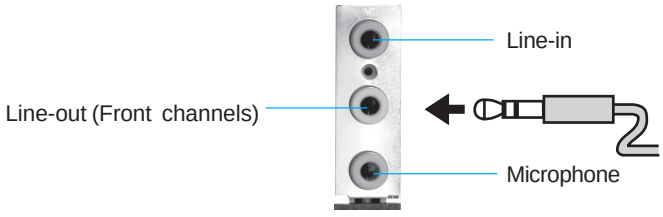
To perform multichannel audio operation, connect multiple speakers to the system. You should connect the same number of speakers as the audio channels you will select in the software utility.

2-Channel Analog Audio Output

The audio connectors on the rear panel already provide 2-Channel analog audio output. The rear panel's audio connectors can be transformed to 4-/6-Channel analog audio connectors automatically when you select the correct setting in the software utility. For information about the setting, refer to Selecting 4- or 6-Channel Setting later in this section.

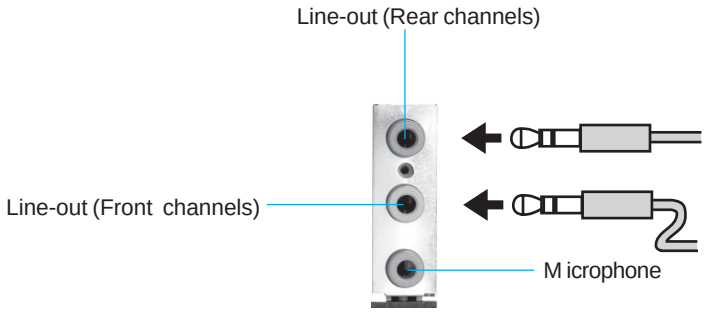
Make sure all speakers are connected to Line-out connectors. Diverse connector configurations for 2-, 4- and 6-Channel using rear panel connectors are described below:

2-Channel Analog Audio Output



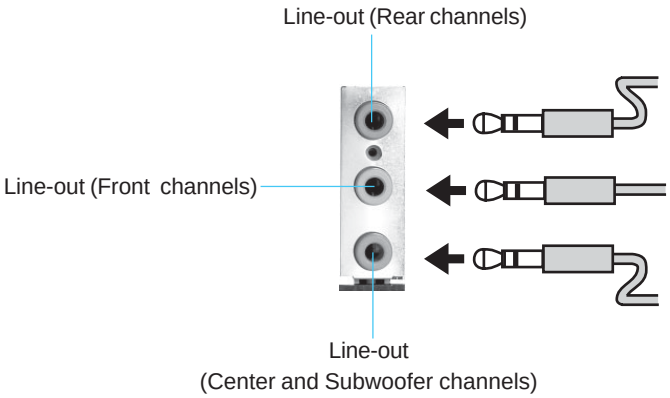
Description: Line-out, Line-in and Microphone functions all exist under 2-Channel configuration.

4-Channel Analog Audio Output



Description: Line-in is converted to Line-out under the 4-Channel configuration.

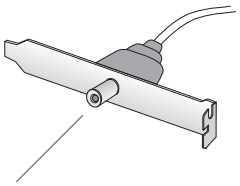
6-Channel Analog Audio Output



Description: Both Line-in and Microphone are converted to Line-out under the 6-Channel configuration.

Digital Audio Output

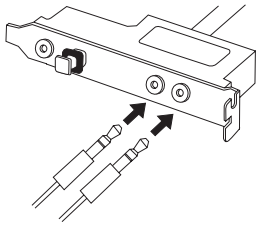
S/PDIF Cable (optional)



Coaxial S/PDIF jack

Or

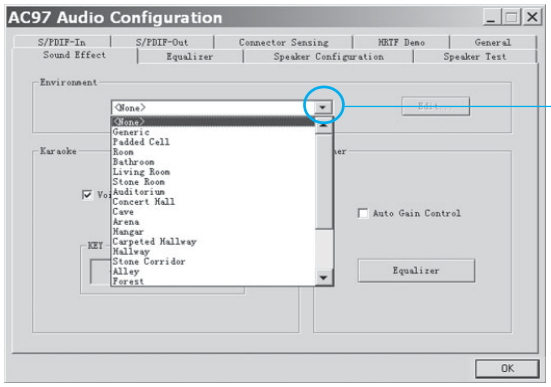
6CH_Bracket (optional)



Description: Connect the S/PDIF speakers to the Coaxial S/PDIF jack.

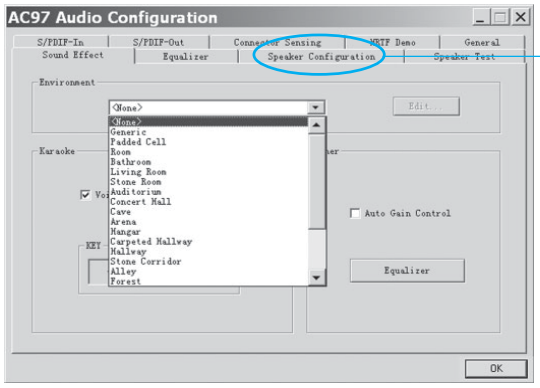
Selecting 4- or 6-Channel Setting

1. Click the audio icon from the Windows tray bar at the bottom of the screen.
2. Select any surround sound effect you prefer from the “Environment” pull-down menu under the **Sound Effect** tab.

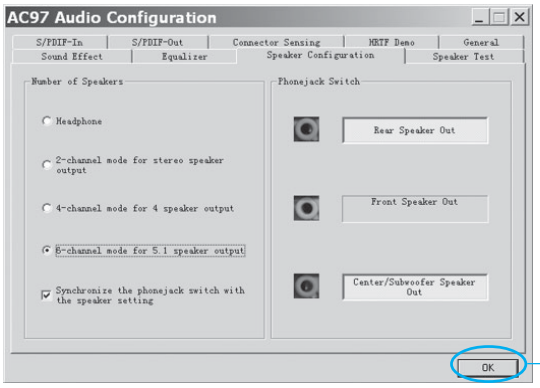


Click here and the pull-down menu will appear.

3. Click the **Speaker Configuration** tab.



4. The following window appears.



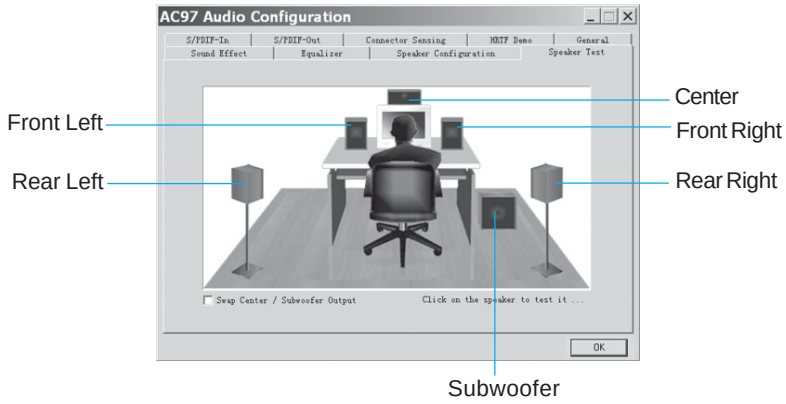
5. Select the multi-Channel operation you prefer from **No. of Speakers.**
6. Click **OK**.

Testing the Connected Speakers

To ensure 4- or 6-Channel audio operation works properly, you may need to test each connected speaker to make sure every speaker works properly. If any speaker fails to sound, then check whether the cable is inserted firmly to the connector or replace the bad speakers with good ones.

Testing Each Speaker

1. Click the audio icon from the window tray bar at the bottom of the screen.
2. Click the **Speaker Test** tab.
3. The following window appears.



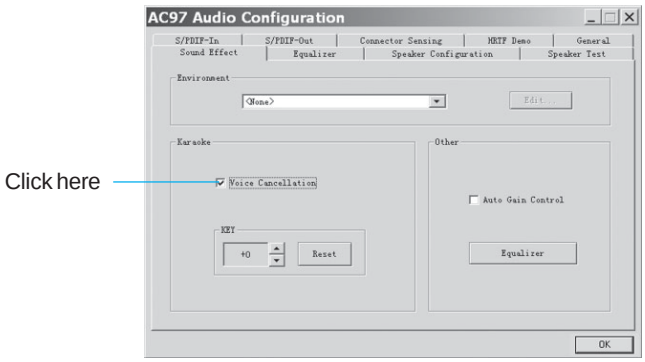
4. Select the speaker which you want to test by clicking on it.

Playing Karaoke

The Karaoke function will automatically remove human voice (lyrics) and leave melody for you to sing the song. **The function can only be used with the 2-Channel audio configuration,** so make sure “2 channels mode” is selected in the “No. of Speakers” column before playing Karaoke.

Playing Karaoke

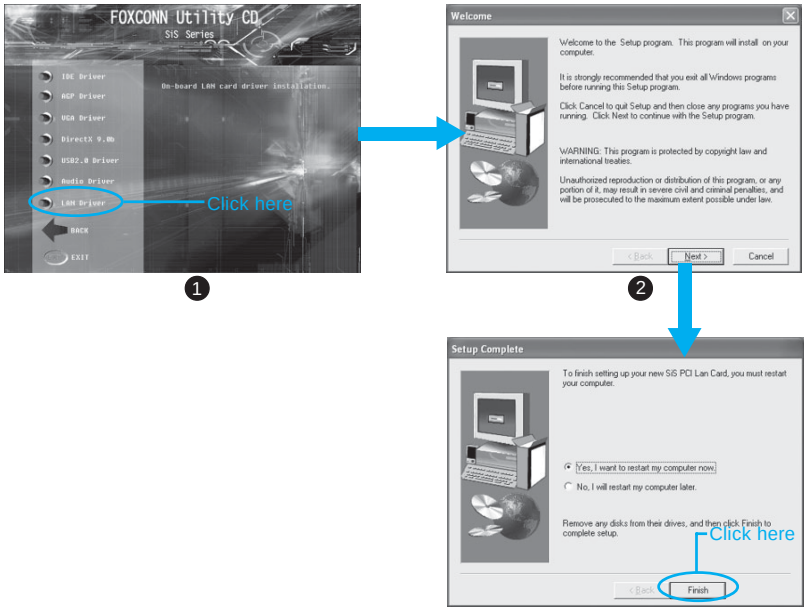
1. Click the audio icon from the window tray at the bottom of the screen.
2. Make sure the **Sound Effect** tab is selected.
3. Select **Voice Cancellation** in the “Karaoke” column.



4. Click **OK**.

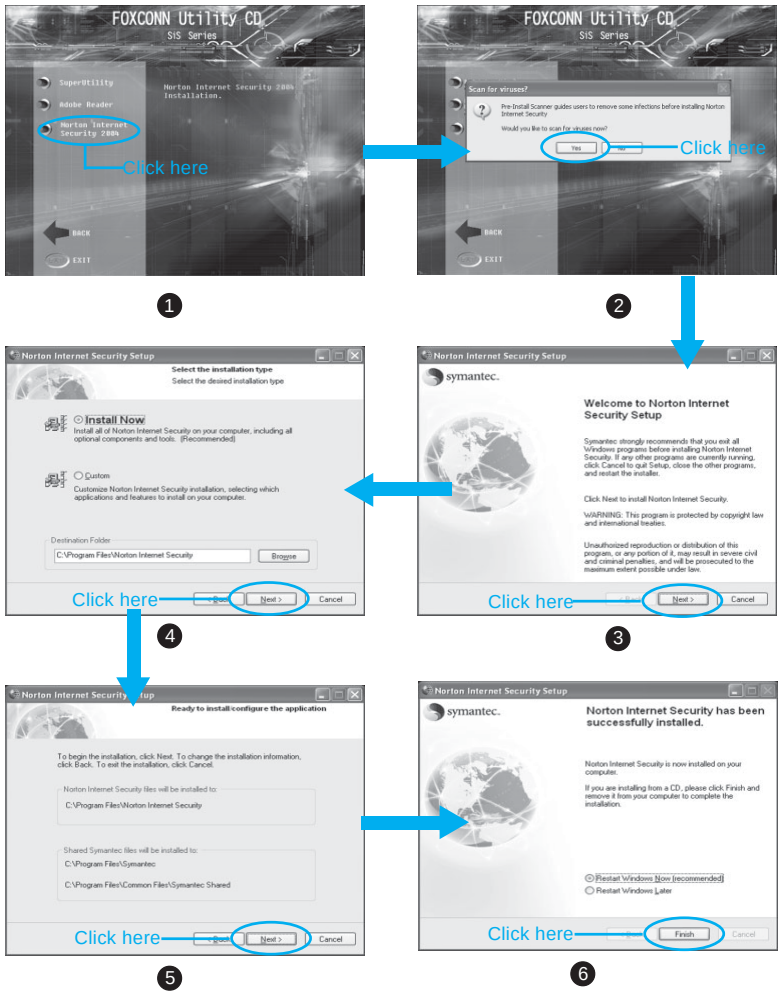
Install LAN Driver

Click <Install Driver> from the main menu and enter the install driver menu (as shown in fig. 1). Click <LAN Driver> to start the installation.



Install Norton Internet Security 2004

From the main menu, select <Accessories> (as shown in following fig. 1). Click <Norton Internet Security 2004> to start the setup.



Note:

If your system is Windows 98 or Window ME, please make sure that your Internet Explorer version is 5.01 with service pack 2 or higher.

Chapter 5

This chapter will introduce how to use attached software.

This chapter provides the following information:

- SuperStep
- SuperLogo
- SuperUpdate

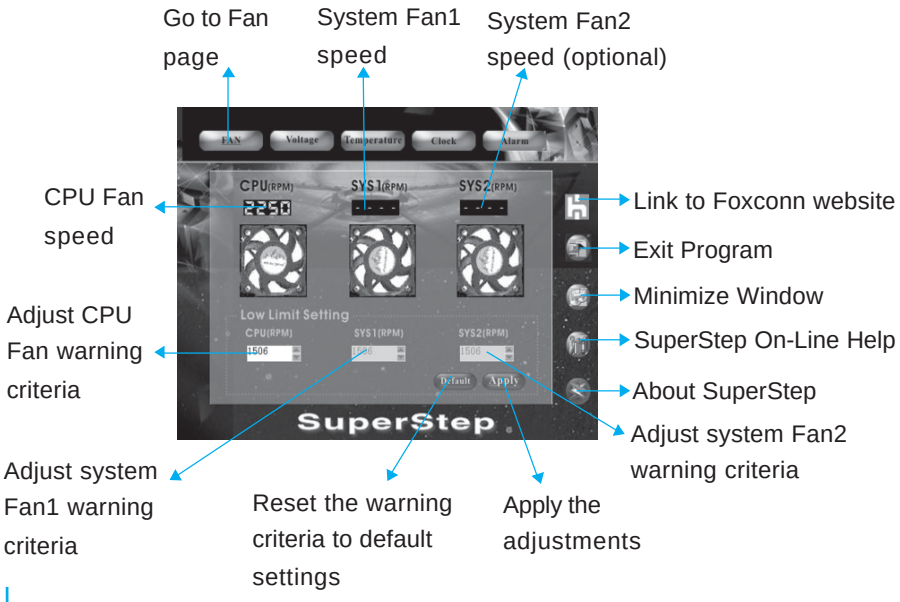
SuperStep

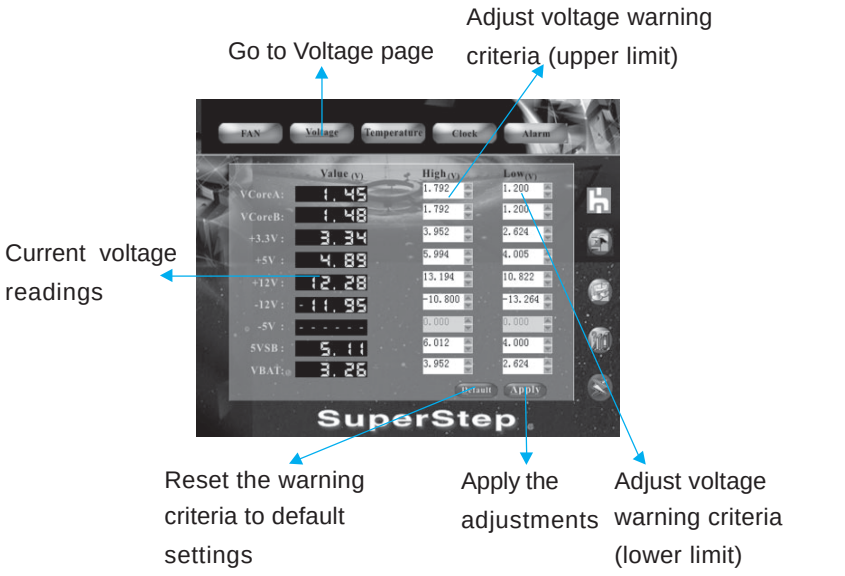
SuperStep is a utility that allows users to change the frequency of the CPU. It also displays system health information including CPU temperature, CPU voltage and PCI/AGP clock.

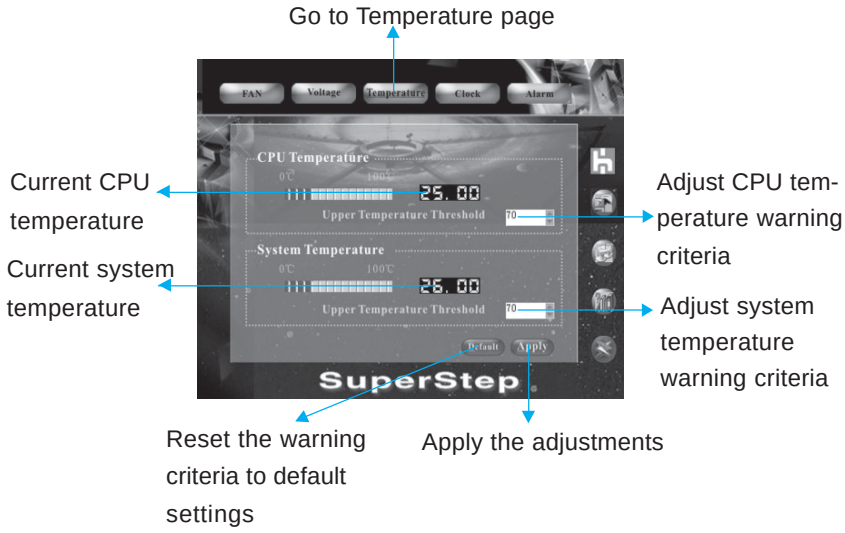
SuperStep features:

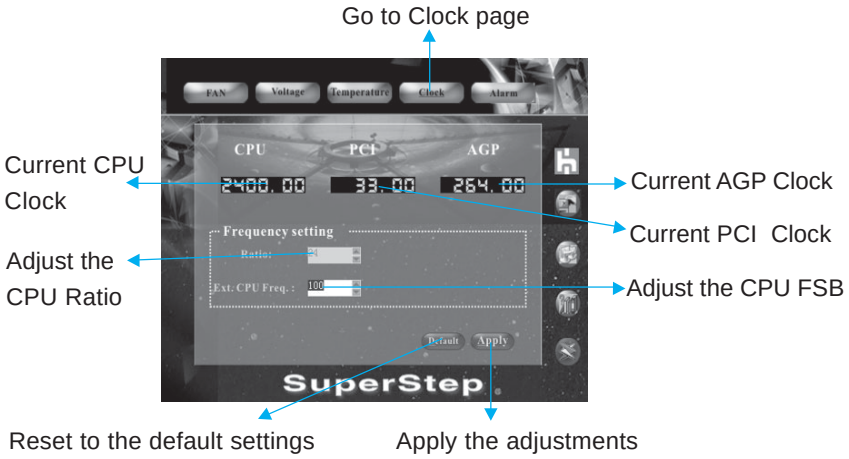
1. Supports Win98SE, WinME, Win2000 and WinXP.
2. Automatic alarm mechanism when system runs irregularly.
3. Adjusts the CPU frequency to speed up your system and achieve better system performance.
4. Simple and easy to operate, with a user-friendly graphics interface.

Using SuperStep:



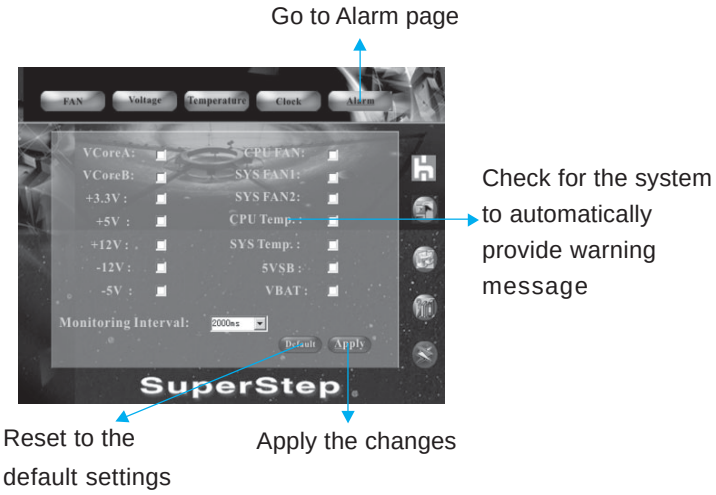

Go to Voltage page
Adjust voltage warning criteria (upper limit)
Current voltage readings
Reset the warning criteria to default settings
Apply the adjustments
Adjust voltage warning criteria (lower limit)
FAN
Voltage
Temperature
Clock
Alarm
SuperStep


Go to Temperature page
Current CPU temperature
Current system temperature
Adjust CPU temperature warning criteria
Adjust system temperature warning criteria
Reset the warning criteria to default settings
Apply the adjustments
CPU Temperature
System Temperature
Upper Temperature Threshold
SuperStep



Note:

When CPU overclock is failed, please **do** use **cold boot** to restart your computer. The system will be resume normally.



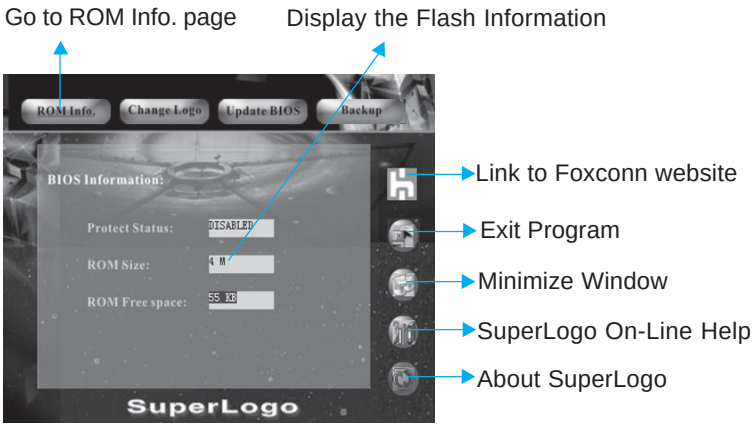
SuperLogo

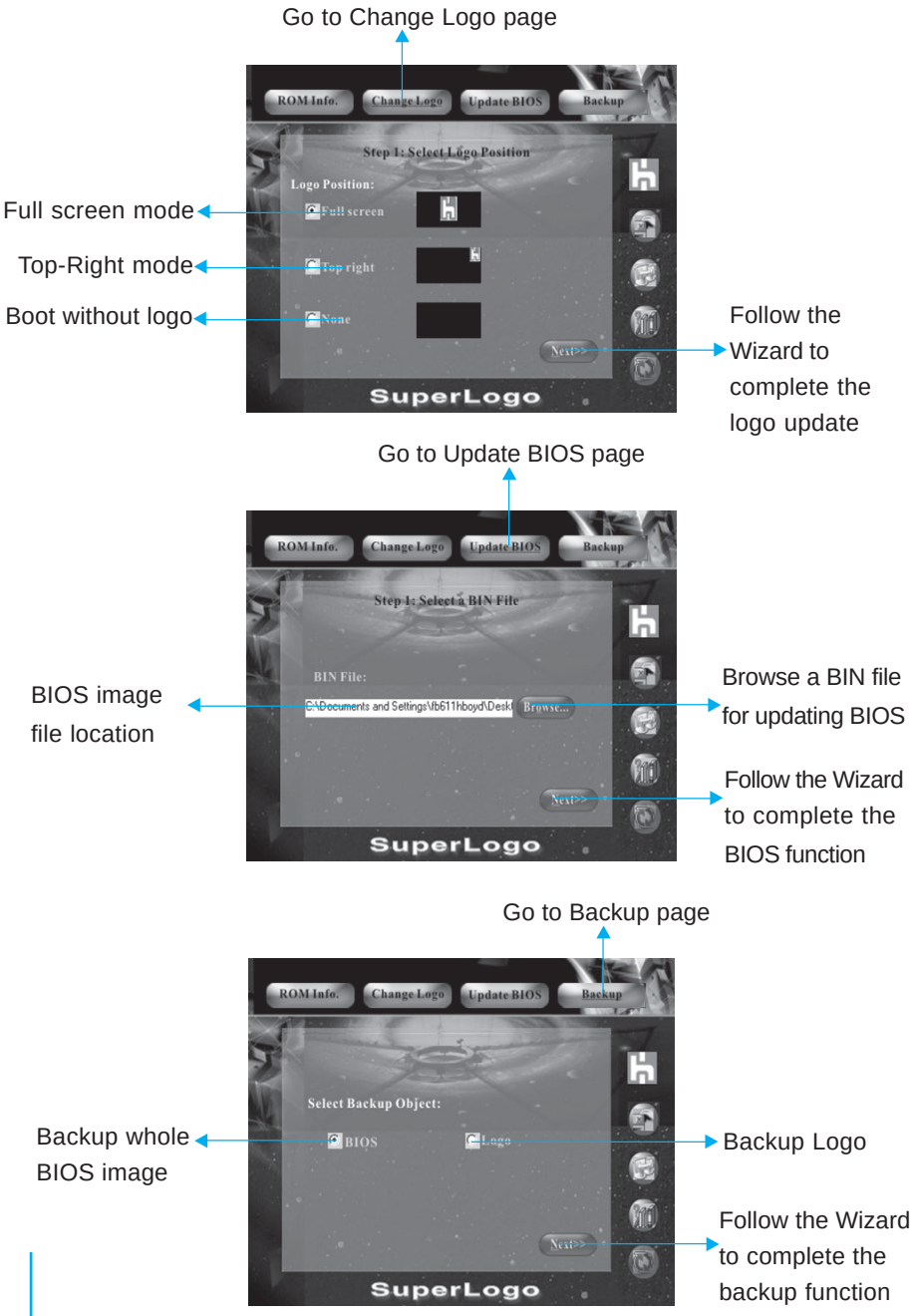
SuperLogo is a Windows utility that allows users to change the BIOS sign on logo. The utility is able to replace and backup the BIOS logo, and update and backup the BIOS image within the Windows environment.

SuperLogo features:

1. Supports Win2000 and WinXP.
2. Supports 2Mb and 4Mb size flash parts, flash write method is independent with flash type.
3. Simple and easy to operate, with a user-friendly graphics interface.
4. Supports BMP and JPEG graphic format files. The best color is 16 or 256 colors. The best resolution is 136 x 84 for top-right logo and 640 x 480 or 800 x 600 for full screen logo.

Using SuperLogo:




Go to Change Logo page
ROM Info.
Change Logo
Update BIOS
Backup
Step 1: Select Logo Position
Logo Position:
Full screen
Top right
None
Next>>
SuperLogo
Full screen mode
Top-Right mode
Boot without logo
Follow the Wizard to complete the logo update
Go to Update BIOS page
Step 1: Select a BIN File
BIN File:
Browse...
BIOS image file location
Browse a BIN file for updating BIOS
Follow the Wizard to complete the BIOS function
Go to Backup page
Select Backup Object:
BIOS
Logo
Backup whole BIOS image
Backup Logo
Follow the Wizard to complete the backup function

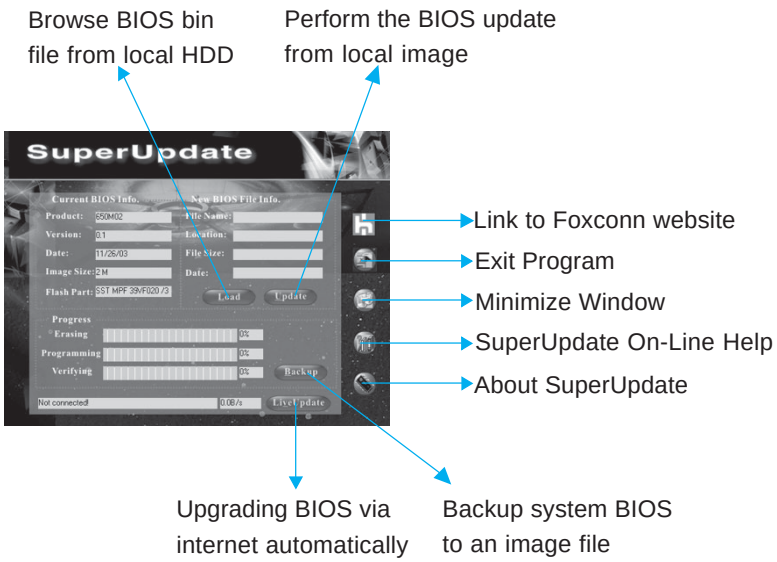
SuperUpdate

SuperUpdate is a Windows utility that allows users to backup and upgrade the system BIOS from local or internet.

SuperUpdate features:

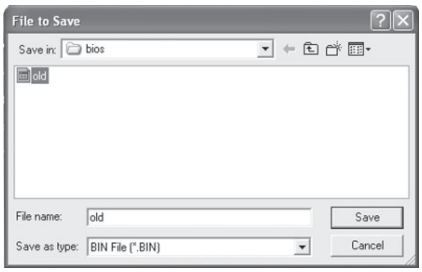
1. Supports Windows 2000 and Windows XP.
2. Supports 2Mb and 4Mb size flash parts; flash write method is independent of flash type.
3. Simple and easy to operate, with a user-friendly graphics interface.

Using SuperUpdate:

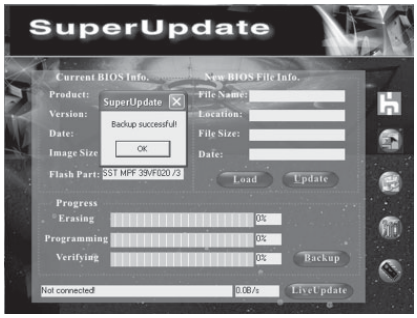


Backup BIOS to local image:

1. Click <Backup> to backup current BIOS file.

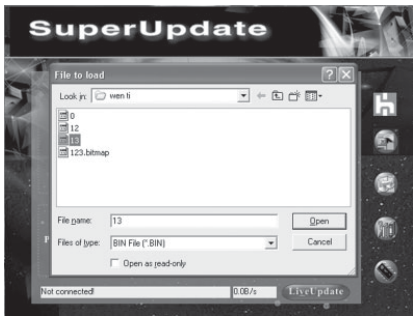


2. Click <OK> to finish the bakeup process.

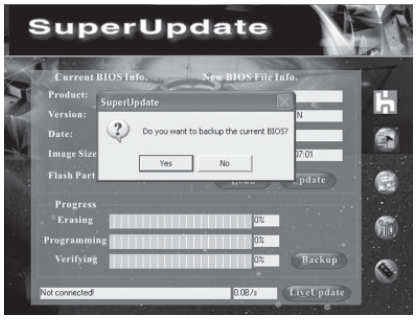


Update BIOS from local image:

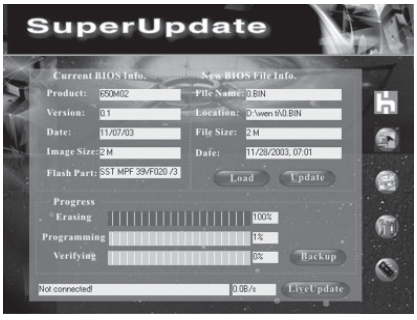
1. Click <Load> to load a new BIOS file.



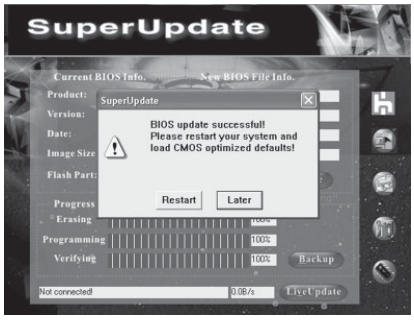
2. Click <Update>, the following message will appear.



3. Click <Yes> to backup the current BIOS, then start to update the BIOS.

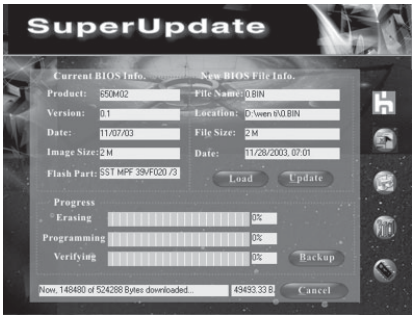


4. Click <Restart >to finish the update process.

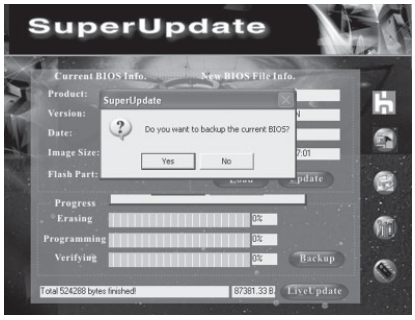


Update BIOS On-line:

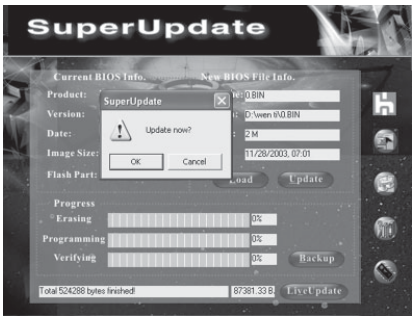
1. Click <Liveupdate> to automatically update the BIOS from the internet.

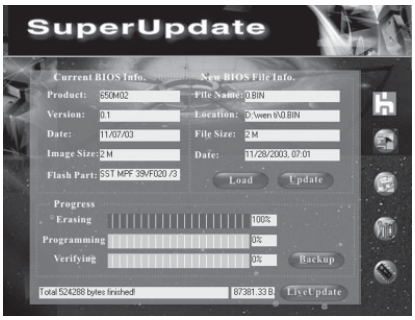


2. Click <Yes> to backup the current BIOS.

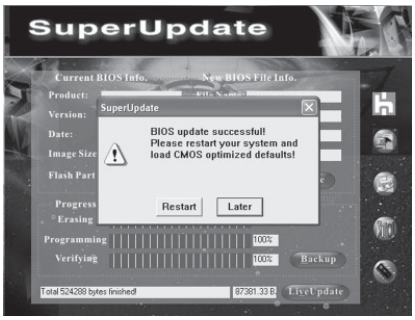


3. Click <OK> to update BIOS.





4. Click <Restart >.



Chapter 6

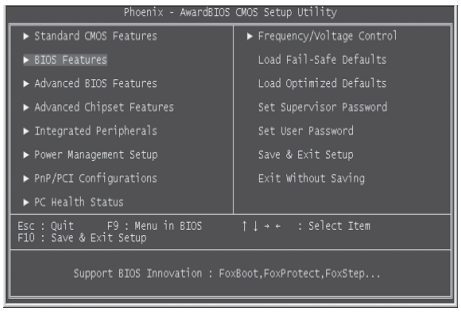
This chapter will introduce special functions of BIOS and how to use them in detail. It can further exert the max potential of motherboard to bring you super-value enjoyment.

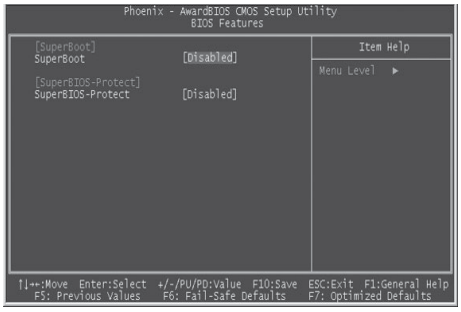
This chapter introduces the following special functions of BIOS:

- SuperBoot
- SuperBIOS-Protect

SuperBoot

SuperBoot technology greatly reduces the long boot process time of computers. A BIOS without SuperBoot has to perform many routines every time when the system starts, such as checking the system core and initializing system peripherals. Now with SuperBoot, a PC can boot up without any unnecessary. SuperBoot is quite easy to use: choose the right option in CMOS setup (refer to BIOS features), SuperBoot saves the information when the PC boots up at the first time, and restores the parameters for the system, thus letting the PC boot freely and rapidly.



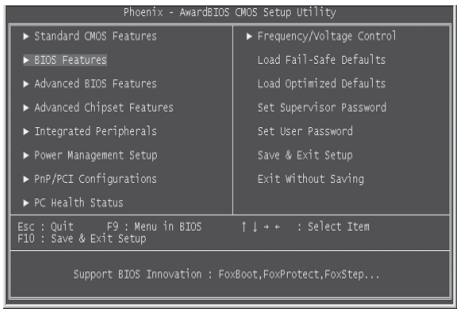


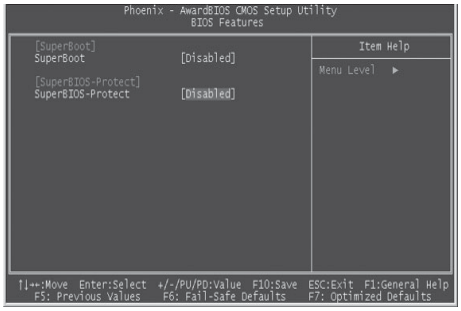
Notes:

1. If the previous boot was not completed then the BIOS will perform a normal POST, even if SuperBoot is enabled.
2. No matter whether SuperBoot is enabled or not, the BIOS will perform a normal POST if the CMOS fails.

SuperBIOS-Protect

The BIOS of the motherboard is contained inside the Flash ROM. Severe viruses, such as the CIH virus, are so dangerous that they may overwrite the BIOS. If the BIOS has been damaged, the system will be unable to boot. We provide the following solution which protects the system BIOS from being attacked by such viruses.





There are two ways to implement this function:

1. Set the jumper (FWH_EN) to disable; the flash ROM cannot be overwritten.
2. Set the jumper (FWH_EN) to enable and enable “SuperBIOS-Protect” in the CMOS section of BIOS Features. In this way, the BIOS cannot be overwritten, but the DMI information can be updated.

Note: FWH_EN default is enable.