K8Ultra-U Series

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Trademark

Disclaimer

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FCC Compliance Statement

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. However, there is no guarantee that interference will not occur in a particular installation.

CE Mark

The device is in accordance with 89/336 ECC-ENC Directive.

120410134M1N

Ver:EG100

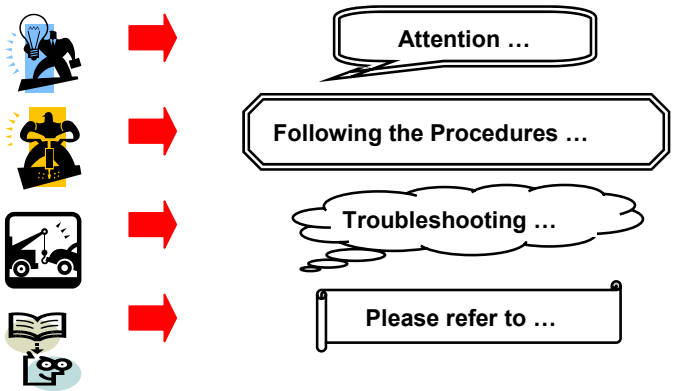
You have to know !!!

- The images and pictures in this manual are for reference only and may vary slightly from actual product installation depending on specific hardware models, third party components and software versions.
- Unplug your computer when installing components and configuring switches and pins.
- This mainboard contains very delicate IC chips. Use a grounded wrist strap when working with the system.
- Do not touch the IC chips, leads, connectors or other components.
- Unplug the AC power when you install or remove any device on the mainboard.

Package Contents

- K8Ultra-U series mainboard
- IDE Cable/ FDC Cable
- USB Bracket (optional)
- Game Port Bracket (optional)
- SPDIF & FRONT AUDIO Port Bracket (optional)
- SATA Power cord/ SATA Cable (optional)
- I/O Shield (optional)
- Installation and Setup Driver CD
- K8Ultra-U Series User Manual

Symbols



K8Ultra-U Series

ULi® M1689

Supports Socket 754 AMD® Athlon™ 64/ Sempron™ Processors

USER Manual

Dimensions (ATX form-factor):

- 194mm x 295mm (WxL)

Operating System:

- Supports most popular operating systems: Windows® 98/ME/2000/XP etc.

Contents

Chapter 1. Getting Started

Introduction

Congratulations on choosing the K8Ultra-U Series mainboard! The K8Ultra-U series includes the K8Ultra-U PRO and K8Ultra-U. The K8Ultra-U series is based on ULi® M1689 chip. It also supports AMD® Athlon™ 64 / Sempron™ processors.

The series provide 2 sockets using 184 pin DDR SDRAM. You can install DDR400/ 333/ 266/ 200 (PC3200/ 2700/ 2100/ 1600) SDRAM. It supports a total capacity of up to 2GB.

The series provide one AGP Slot for 2X/ 4X/ 8X (1.5V only) AGP cards.

The series include built in IDE facilities that support Ultra ATA 66/ 100/ 133. It also includes built in Serial ATA facilities that support transfer rate to 150 MB/s per channel.

The series also come with an AC'97 codec which supports 6 channel audio (5.1 channel audio effect). All of them also support Sony/ Philips Digital Interface.

The series also come with 8 USB 2.0 ports.

The K8Ultra-U PRO also includes built in LAN facility that supports a back panel LAN port capable of 10/ 100 Mbit/s transmission speeds.

All of the information in this manual only for reference. This specification is subject to change without notice.

Specification

CPU

- Supports Socket 754
- Supports AMD® Athlon™ 64/ Sempron™ processors
- HyperTransport™ Link

  - supports 16-bit to be capable of operating up to 800MHz (1600 MT/s) with a bandwidth of up to 3.2 GB/s in each direction

Speed

- 33 MHz, 32 bit PCI interface (PCI 2.3 compliant)
- 66 MHz AGP 2.0 compliant interface that supports 2X/ 4X data transfer modes
- 66 MHz AGP 3.0 compliant interface that supports 8X data transfer modes

Chipset

- Single chip – ULi M1689
- I/O Controller – Winbond Super I/O W83627HF
- AC'97 Codec – Realtek ALC655
- LAN PHY Chip – Realtek RTL8201CL (only for K8Ultra-U PRO)

DRAM Memory

- Supports DDR400 (PC3200)/ DDR333 (PC2700)/ DDR266 (PC2100) SDRAM
- Supports 64 MB/ 128 MB/ 256 MB/ 512 MB/ 1 GB unbuffered with (or without) ECC DIMM modules
- Supports up to two memory modules with a total capacity of 2 GB

Shadow RAM

- This mainboard is equipped with a memory controller providing shadow RAM and support for ROM BIOS

BUS Slots

- Provides 1 AGP slot (1.5V only)
- Provides 4 PCI bus slots

Flash Memory

- Supports flash memory functionality
- Supports ESCD functionality

Hardware Monitor Function

- Monitors CPU and Chassis Fan Speed
- Monitors CPU & system Temperature
- Monitors System Voltage

AC'97 Sound Codec Onboard

- High performance CODEC with high S/N ration (>90dB)
- Compliant with AC'97 2.3 specification
- 6 audio playback channels capability (Super 5.1 channel audio effect)
- 3D Stereo enhancement
- Sony/ Philips Digital interface (S/PDIF)

LAN Function (only for K8Ulta-U PRO)

- 10/ 100/ Mbps Ethernet support

IDE Facilities

- Supports Ultra ATA 66, Ultra ATA 100, Ultra ATA 133
- Supports IDE interface with CD-ROM
- Supports high capacity hard disk drives
- Supports installation of up to 4 drives, with separate IDE connections for Primary and Secondary connectors

Universal Serial Bus:

- Supports up to 8 USB ports for USB interface devices
- Supports USB 2.0 Enhanced Host Controller Interface (EHCI) and dual USB 1.1 Open Host Controller Interface (OHC1)

Serial ATA facilities

- Compatible with SATA Spec 1.0
- Supports Serial ATA specification of 150 MB/S transfers

I/O facilities

- One multi-mode Parallel Port capable of supporting the following specifications:
  1. Standard & Bi-direction Parallel Port
  2. Enhanced Parallel Port (EPP)
  3. Extended Capabilities Port (ECP)
- Supports two serial ports 16550 UART
- Supports PS/2 mouse and PS/2 keyboard
- Supports 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB floppy disk drives
- MIDI compatible
- Supports one game port header

BIOS

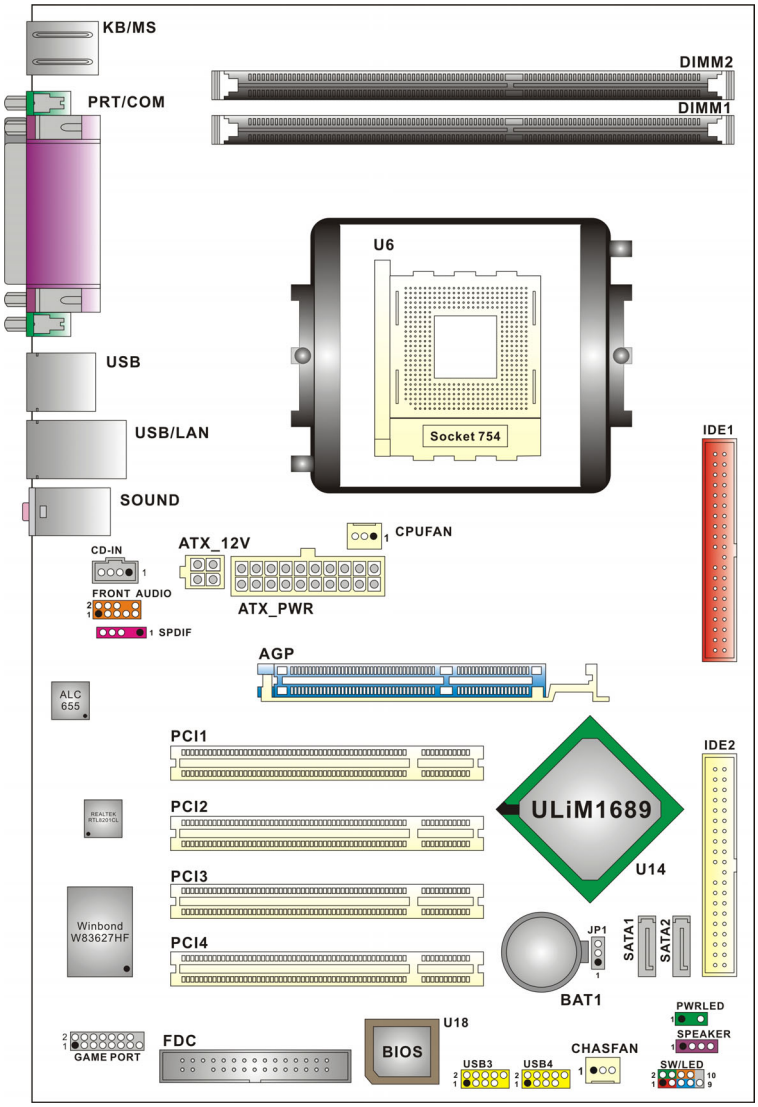
- Phoenix-Award™ BIOS
- Supports APM1.2
- Supports ACPI power management

Watch Dog Timer

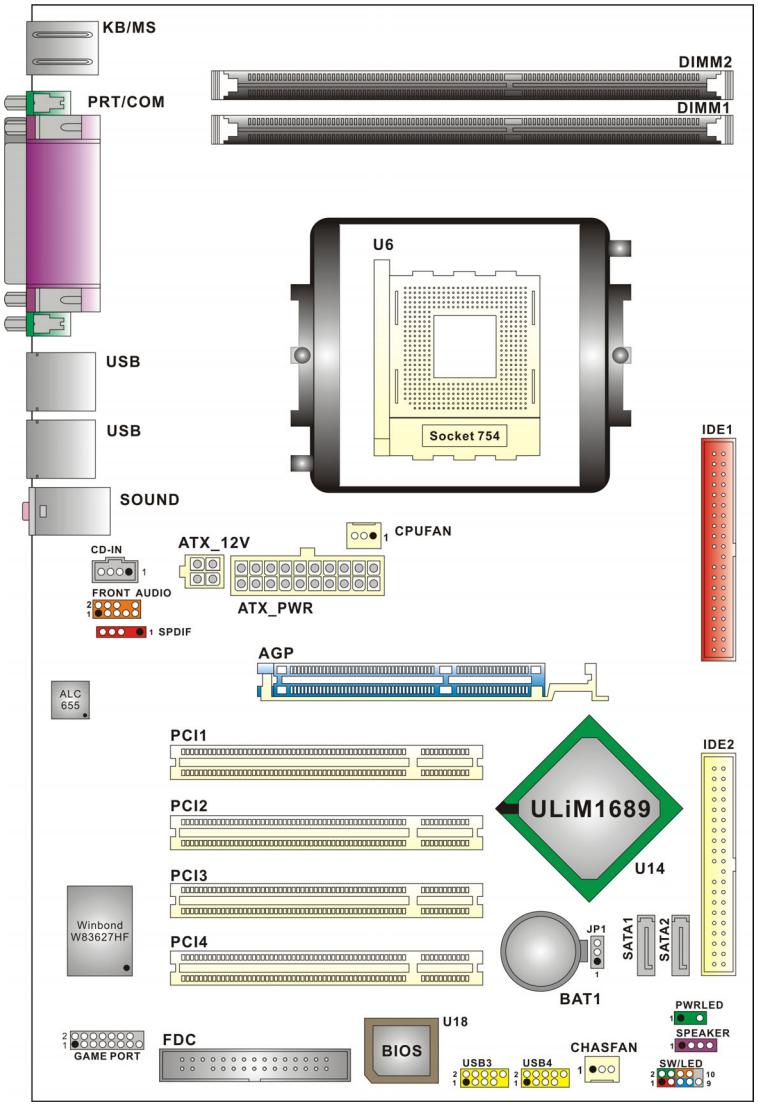
- The mainboard contains a special feature called the "Watch Dog Timer" which is used to detect when the system is unable to handle over-clocking configurations during POST stage. Once detected the system will reset the configurations and reboot the system after five seconds.

Configuration

Layout of K8Ultra-U PRO



Layout of K8Ultra-U



Hardware Installation

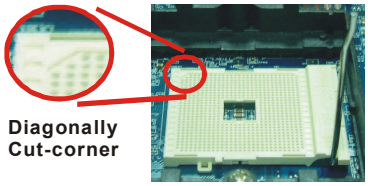
This section will assist you in quickly installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage your system components.

CPU Processor Installation

This mainboard supports AMD® Athlon™ 64/ Sempron™ processors using a Socket 754. Before building your system, we suggest you visit the AMD website and review the Processor installation procedures. *http://www.amd.com*

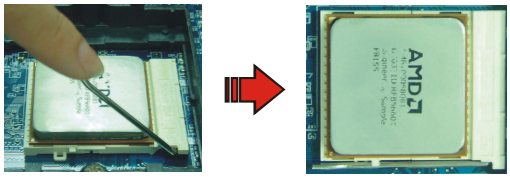
CPU Socket 754 Configuration Steps:

1. Locate the CPU socket on your mainboard and nudge the locking lever away from the socket. Then lift the lever to a 90-degree angle.
2. On the socket, locate the corner which has the "diagonally cut-corner" on the rectangular shaped pattern of pinholes (see diagram below-left). Match that corner with the "gold triangle" on the CPU (see diagram below-right) and lower the CPU onto the socket. The bottom of the CPU should be flush with the face of the socket.

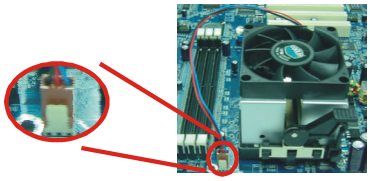


Gold triangle

3. Lower the lever until it snaps back into position. This will lock down the CPU.



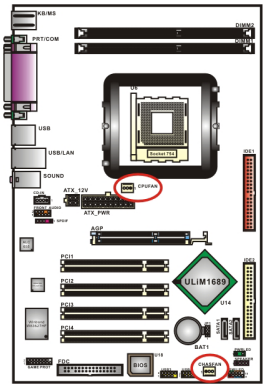
4. Smear thermal grease on top of the CPU. Lower the CPU fan onto the CPU and use the clasps on the fan to attach it to the socket. Finally, extend the power cable from the fan and insert it onto the "CPUFAN" adapter.

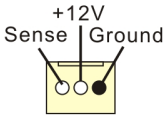


Attention: Overheating may damage the CPU and other sensitive components. Please check the installation completely before starting the system. Make sure the heatsink and the CPU fan are properly installed.

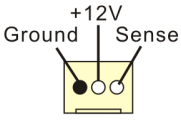
FAN Headers

Three power headers are available for cooling fans, which play an important role in maintaining the ambient temperature in your system.





CPUFAN

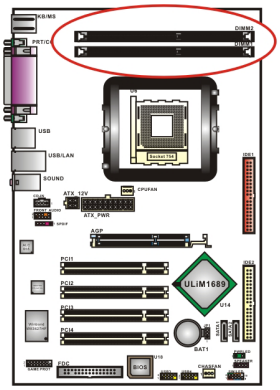


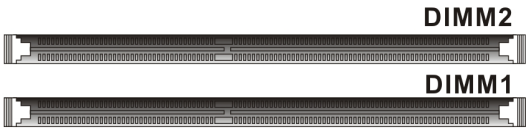
CHASFAN

Attention: We strongly recommend that you use a CPU fan sink with your CPU. You can attach the CPU fan to the CPUFAN header.

Memory Installation

The K8Ultra-U series contain 2 sockets, which use 184- pin DDR SDRAM with a total memory capacity of up to 2 GB. You can install unbuffered with (or without) ECC DDR400 (PC3200)/ DDR333 (PC2700)/ DDDR266 (PC2100)/ DDR200 (PC1600) SDRAM.



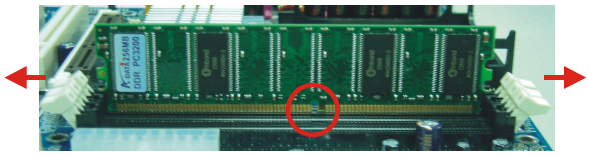


Please refer the table below to install the memory DIMMs.

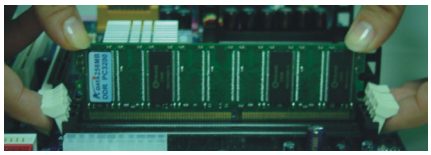
Number of DIMMs	DIMM 1	DIMM 2	Maximum DRAM SPEED	
			1T	2T
1	x8 or x16 single side	X	DDR400	DDR400
1	X	x8 or x16 single side	DDR400	DDR400
1	x8 double side	X	DDR400	DDR400
1	X	x8 double side	DDR400	DDR400
2	x8 or x16 single side	x8 or x16 single side	DDR400	DDR400
2	x8 or x16 single side	x8 double side	DDR400	DDR400
2	x8 double side	x8 or x16 single side	DDR400	DDR400
2	x8 double side	x8 double side	DDR333	DDR333

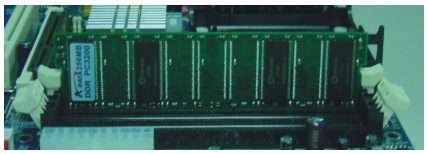
RAM Module Installation:

1. Pull the white plastic tabs on each side of the slot away from the slot.
2. Match the notch on the button of the RAM module with the corresponding pattern in the DIMM slot. This ensures that the module is inserted PROperly.



3. Lower the RAM module into the DIMM Slot and press firmly using both thumbs until the module snaps into place.

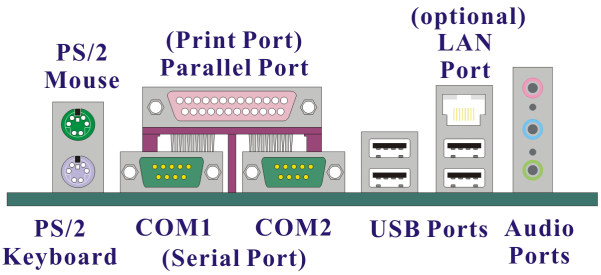




4. Repeat steps 1, 2 and 3 for the remaining RAM modules.

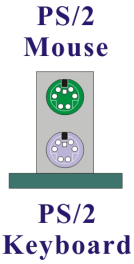
* The pictures above are for reference only and may vary slightly for your mainboard.

Back Panel Configuration



PS/2 Mouse & PS/2 Keyboard Connectors: KB/MS

This series provides a standard PS/2 mouse connector and PS/2 Keyboard connector. The pin assignments are described below:



Pin	Assignment	Pin	Assignment
1	Data	4	+5 V (fused)
2	No connect	5	Clock
3	Ground	6	No connect

USB & LAN Connectors: USB/ (LAN = > optional)

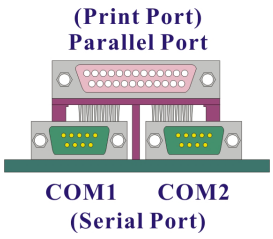
There are 4 USB connectors on the back panel. These USB connectors are used to attach to USB devices such as: keyboards, mice and other USB devices. You can plug the USB devices directly into this connector. The K8Ultra-U PRO also provides a LAN port. You can plug LAN devices directly into this connector.

Pin	Assignment	Pin	Assignment
1	TX+	5	TRD2-
2	TX-	6	RX-
3	RX+	7	TRD3+
4	TRD2+	8	TRD3-

Pin	Assignment	Pin	Assignment
1/5	+5 V (fused)	3/7	USBP0+/P1+
2/6	USBP0-/P1-	4/8	Ground

Serial and Parallel Interface Ports

The K8Ultra-U series come equipped with 2 serial ports and one parallel port on the back panel. The interface ports will be explained below:



Parallel Interface Port: PRT

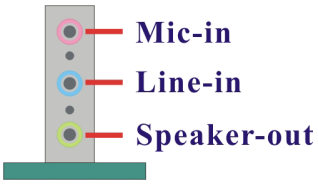
The parallel port on your system has a 25-pin, DB25 connector and is used to interface with parallel printers and other devices using a parallel interface.

The Serial Interface: COM1/COM2

The serial interface port is sometimes referred to as a RS-232 port or an asynchronous communication port. Mice, modems and other peripheral devices can be connected to a serial port.

Audio Port Connectors: SOUND

The series comes equipped with 3 Audio Ports. The three ports, Mic-in, Line-in and Front Speaker-out are standard audio ports that provides basic audio functionality.



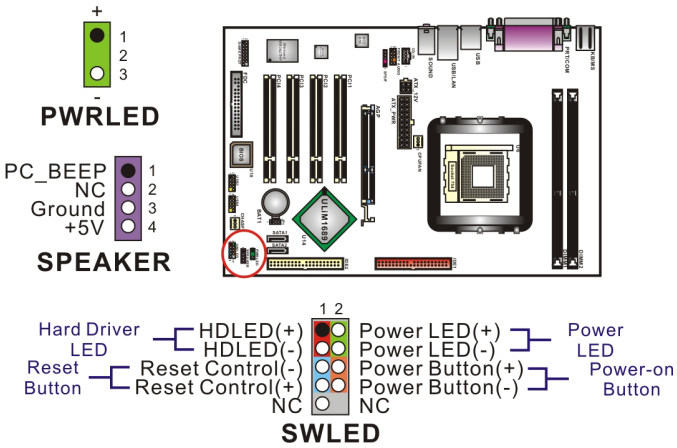
Front Speaker-Out (Green) Connects to standard audio speakers. This port becomes the front speakers when 6 Channel Audio Effects driver is installed and enabled. Also note that this port provides the most amperage of all the ports making it suitable for headphones and speakers without power cables.

Line In (Blue) Connects to an external audio device such as a CD player, tape player or other audio devices that provide audio out.

Mic In (Pink) Connects to a microphone.

This series supports 6 Channel Audio effects. See appendix I for more information.

Front Panel Indicator: SW/LED、PWRLED、SPEAKER



HD LED (Hard Drive LED Connector/ red)

This connector can be attached to an LED on the front panel of a computer case. The LED will flicker during disk activity. This disk activity only applies to those IDE drives directly attached to the system board.

RST SW (Reset Switch Connector/ blue)

This connector can be attached to a momentary SPST switch. This switch is normally left open. When closed it will cause the mainboard to reset and run the POST (Power On Self Test).

PWR-LED (2-pin Power LED Connector/ green)

The mainboard PROvides two power LED connector.If there is a 2-pin power LED cable on the front panel of a computer case. You can attach it to the 2-pin power LED connector. The LED will illuminate while the computer is powered on.

PWR SW (Power Button Connector/ orange)

This connector can be attached to a front panel power switch. The switch must pull the Power Button pin to ground for at least 50 ms to signal the power supply to switch on or off (the time required is due to internal debounce circuitry on the system board). At least two seconds must pass before the power supply will recognize another on/off signal.

PWR-LED (3-Pin Power LED Connector/ green)

The mainboard provides two power LED connector. If there is a 3-pin power LED cable on the front panel of a computer case. You can attach it to the 3-pin power LED connector.

SPEAKER (Speaker Header/ violet)

A front panel speaker can be connected to this connector. When you boot your computer, the speaker sounds a short "beep". If there is something wrong during the Power On Self-Test, the speaker sounds "irregular beep" to warning you.

Connectors

Floppy Disk Connector: FDC

The mainboard PROvides a standard floppy disk connector (FDC) that supports 360K, 720K, 1.2M, 1.44M and 2.88M floppy diskettes. This connector supports the floppy drive ribbon cables provided in the packaging.

Hard Disk Connectors: IDE1/ IDE2、SATA1/ SATA2

The mainboard has a 32-bit Enhanced PCI IDE Controller that supports Ultra ATA 33, Ultra ATA 66, Ultra ATA 100 and Ultra ATA 133. It has two HDD connectors, IDE1 and IDE2.

IDE1 (Primary IDE Connector)

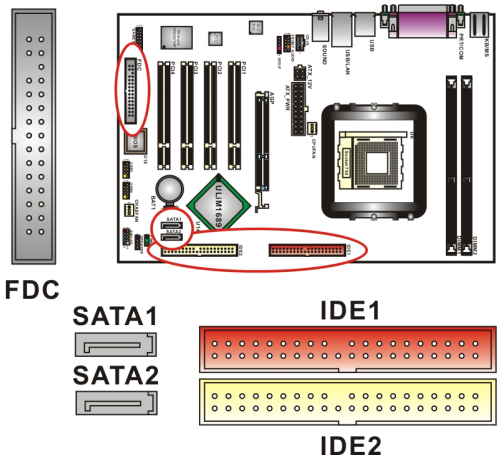
You can connect up to two hard drives to IDE1. If you attach two drives, you must use a ribbon cable with three connectors. You must also configure one drive as the master and one drive as the slave, using the jumpers located on each drive.

IDE2 (Secondary IDE Connector)

The IDE2 controller can also support a Master and a Slave drive. The configuration is similar to IDE1.

SATA1/ SATA2

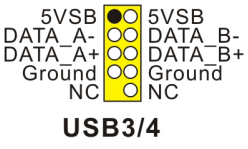
The SATA connectors support transfer rate to 150 MB/s. The connectors only can connect one serial ATA hard disk device each. Please

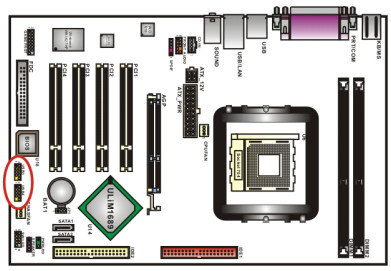


Headers & Jumpers

Front USB Headers: USB3/ USB4

The K8Ultra-U series also provides 2 USB headers on the board allowing for 4 more USB ports. These attach to USB connectors embedded into the computer case or connected to a USB bracket (optional).

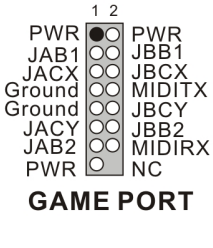


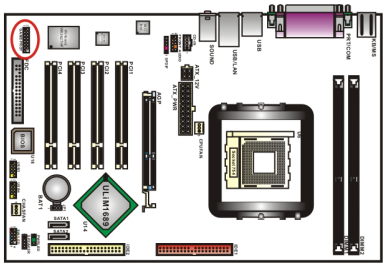


If you are using a USB 2.0 device with Windows 2000/XP, you will need to install the USB 2.0 driver from the Microsoft® website. If you are using Service pack 1 (or later) for Windows® XP, and using Service pack4 (or later) for Windows® 2000,you will not have to install the driver.

Game Port Header: GAME PORT

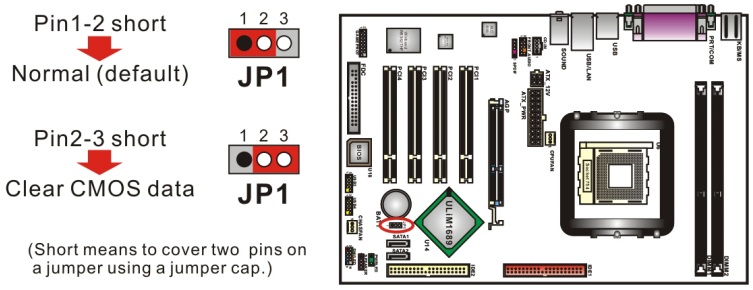
This mainboard supports a front game port header. To use this header you can install a COM port & Game port bracket (optional) with a Game port wire extending to this header. You can then attach gaming devices to the game port on the bracket.





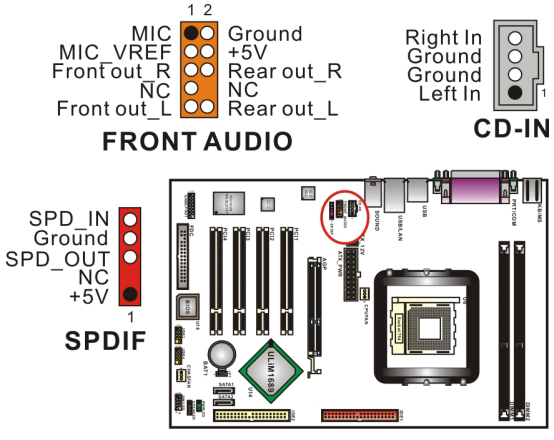
Clear CMOS Jumper: JP1

The "Clear CMOS" jumper is used when you cannot boot your system due to some CMOS configuration such as a password that is forgotten. This jumper allows you to reset the CMOS configurations, and then reconfigure.



The following steps explain how to reset your CMOS configurations when you have forgotten your system password.
1. Turn off your system and disconnect the AC power cable.
2. Set JP1 to OFF (2-3 Closed).
3. Wait several seconds.
4. Set JP1 to ON (1-2 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

Audio Connectors



CD-ROM Audio-In Header: CD-IN

This header is used to connect to the CD-ROM/ DVD audio cable.

Front Panel Audio Header: FRONT AUDIO

If your computer case has been designed with embedded audio equipment or you are using an audio bracket (optional). You can attach these components to the FRONT_AUDIO header of the mainboard. First remove the jumper caps covering the FRONT_AUDIO pins. Use pins 1, 3 to connect to the case microphone. Use pins 9,5 to connect to the earphone. If you do not intend to use the FRONT_AUDIO panel, do not remove the jumper caps. The front panel audio & the back panel audio can not use simultaneously.

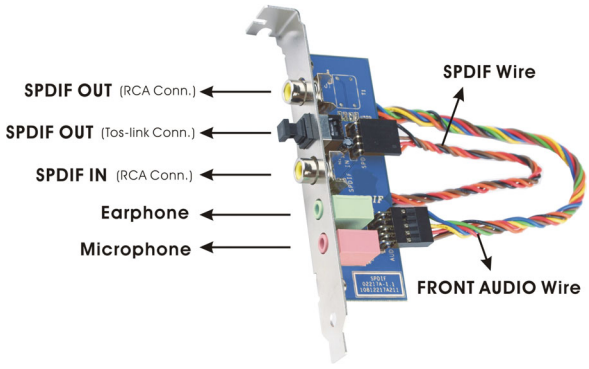
If the jumper caps are in place, jumper cap 1 is on pin 5, pin 6 and jumper cap 2 is on pin 9, pin 10. If you do not intend to use the FRONT_AUDIO panel, do not remove the jumper caps.

S/PDIF Header: SPDIF

S/PDIF (Sony/Philips Digital Interface) is an audio transfer file format, which provides high quality audio using optical fiber and digital signals. This mainboard is capable of delivering audio output and receiving audio input through the SPDIF header. One way you would use this header is by using an SPDIF & FRONT AUDIO bracket (optional) attached to your computer. This bracket will have two wires that you can attach to the SPDIF header and the FRONT_AUDIO header. This bracket has RCA connectors similar to that used with most consumer audio products. Using the RCA connectors, the data can then be output to and input from an S/PDIF device. This bracket will also have the TOS-LINK connectors. You can also use the TOS-LINK connectors to output and input audio from an S/PDIF device. The devices that are receiving and sending information from this header must be S/PDIF compliant for optimal effect. Note that the SPDIF bracket is optional in the packaging that comes with this mainboard.

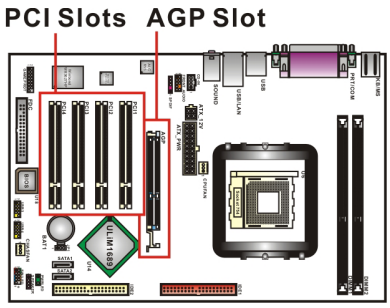
SPDIF & FRONT AUDIO bracket

You can connect the bracket to the SPDIF and FRONT AUDIO Headers.



Slots

The slots in this mainboard are designed for expansion cards used to complement and enhance the functionality of the mainboard.



AGP Slot: AGP

The mainboard is equipped with a 2X/ 4X/ 8X & 1.5V only Accelerated Graphics Port (AGP) to support video cards.

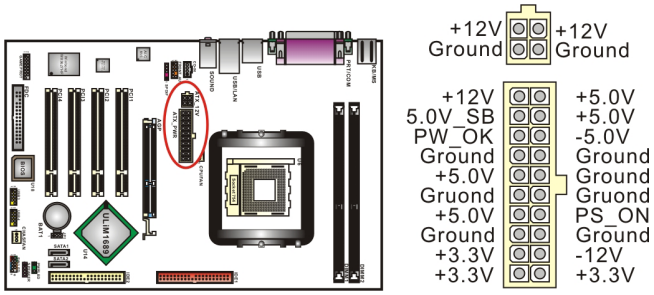
PCI Slots: PCI1-4

This mainboard is equipped with 4 standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which has, for the most part, supplanted the older ISA bus standard. This PCI slot is designated as 32 bit.

Power Supply Attachments

ATX Power Connector: ATX_PWR、ATX_12V

This mainboard requires two ATX power connectors; a 20-pin connector and a 4-pin connector. Your power supply must have both connectors. Attach the 4-pin connector first then attach the 20-pin connector. Make sure the connectors are secure before applying power.



Chapter 2. BIOS Setup

Introduction

This section describes PHOENIX-AWARD™ BIOS Setup program which resides in the ROM BIOS firmware. The Setup program allows users to modify the basic system configuration. The configuration information is then saved to CMOS RAM where the data is sustained by Li-battery after power-down.

The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. As well, the BIOS controls the first stage of the boot process, loading and executing the operating system.

The PHOENIX-AWARD™ BIOS installed in Flash ROM is a custom version of an industry standard BIOS. This means that it supports the BIOS of AMD® based Processors.

This version of the PHOENIX-AWARD™ BIOS includes additional features such as virus and password protection as well as special configurations for fine-tuning the system chipset. The defaults for the BIOS values contained in this document may vary slightly with the version installed in your system. (When you boot up the computer, the BIOS version will appear at up-left of the POST screen.)

Plug and Play Support

This PHOENIX-AWARD™ BIOS supports the Plug and Play Version 1.0A specification as well as ESCD (Extended System Configuration Data) write.

APM Support

This PHOENIX-AWARD™ BIOS supports Version 1.1 & 1.2 of the Advanced Power Management (APM) specification. These features include system sleep and suspend modes in addition to hard disk and monitor sleep modes. Power management features are implemented using the System Management Interrupt (SMI).

PCI Bus Support

This PHOENIX-AWARD™ BIOS also supports Version 2.2 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

Supported CPUs

This PHOENIX-AWARD™ BIOS supports the AMD® Athlon™ 64/ Sempron™ CPU.

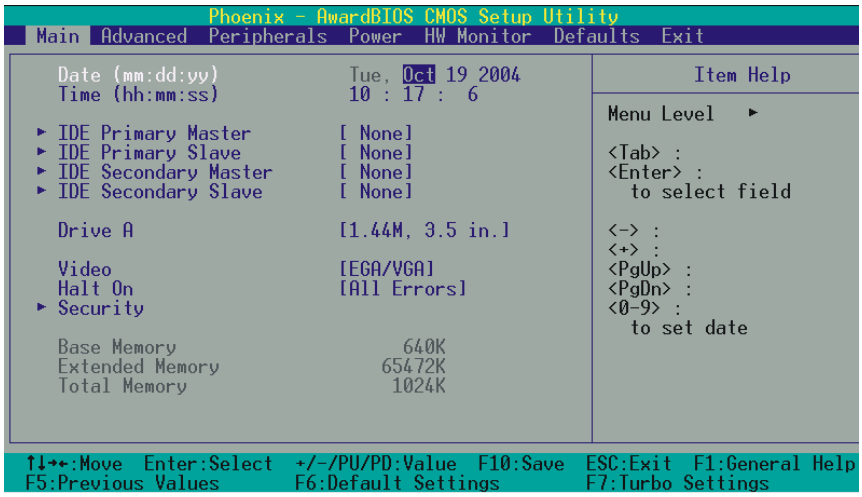
Key Function

In general, you can use the arrow keys to highlight items, 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 within the BIOS Setup program.

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 the item you desire
PgUp key	Increase the numeric value or enter changes
PgDn key	Decrease the numeric value or enter changes
+ Key	Increase the numeric value or enter changes
- Key	Decrease the numeric value or enter changes
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

Main Menu

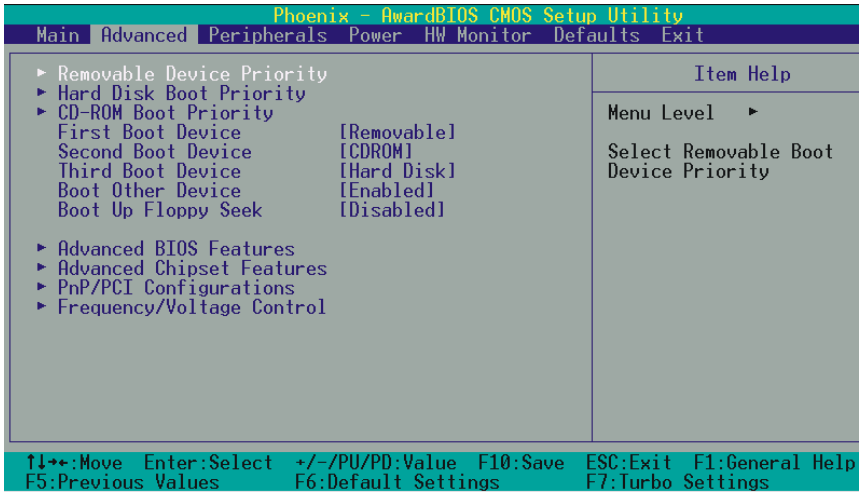
When you enter the PHOENIX-AWARD™ BIOS Utility, the Main Menu will appear on the screen. The Main menu allows you to select from several configuration options. Use the left/right arrow keys to select a particular configuration screen from the top menu bar or use the down arrow key to access and configure the information below.



Main Menu Setup Configuration Options

Item	Options	Description
Date	mm dd yyyy	Set the system date. Note that the 'Day' automatically changes when you set the date.
Time	Hh: mm: ss	Set the current time of the system.
IDE Primary Master	Options contained in sub menu.	Press <Enter> to enter the sub menu.
IDE Primary Slave	Options contained in sub menu.	Press <Enter> to enter the sub menu.
IDE Secondary Master	Options contained in sub menu.	Press <Enter> to enter the sub menu.
IDE Secondary Slave	Options contained in sub menu.	Press <Enter> to enter the sub menu.
Drive A	360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device.
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 you.
Security	Options contained in sub menu.	Press <Enter> to enter the sub menu.
Base Memory	N/A	Displays the amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.
Total Memory	N/A	Displays the total memory available in the system.

Advanced BIOS Features



Removable Device Priority

Select removable device priority. Just like floppy, LS120, ZIP-100, USB-FDD and USB-ZIP.

Hard Disk Boot Priority

Select hard disk boot priority.

CD-ROM Boot Priority

Select CD-ROM boot priority.

First /Second/Third Boot Device

Select the order in which devices will be searched in order to find a boot device.

Options: Removable (default for first boot device)、CD ROM (default for second boot device)、Hard Disk (default for third boot device)

Boot Other Device

Set to "Enabled" allows the system to try to boot from other devices if the system fails to boot from the 1st/ 2nd/ 3rd boot devices. Options: Enabled (default)、Disabled

Boot Up Floppy Seek

When Enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks. Drives with 720KB, 1.2MB, and 1.44MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to "Disabled". Options: Enabled、Disabled (default)

Advanced BIOS Features

Virus Warning

Set the virus warning feature for IDE hard disk boot sector protection. If the function is enabled, any attempt to write data into this area will cause a beep and warning message display on screen. Options: Disabled (default)、Enabled

CPU Internal Cache

Make CPU internal cache active or inactive. System performance may degrade if you disable this item. Options: Enabled (default)、Disable.

External Cache

This option allows you to enable or disable "Level 2" secondary cache on the CPU to enhance performance. Options: Enabled (default)、Disabled

Quick Power On Self Test

Allow the system to skip certain tests while booting. This will speed up the boot process.

Options: Enabled (default)、Disabled.

Boot Up NumLock Status

Selects the power on state for NumLock.

Options:	On (default)	Numpad keys are number keys.
	Off	Numpad keys are arrow keys.

Typematic Rate Setting

When "Enabled", the "typematic rate" and "typematic delay" can be configured. Typematic Rate determines the keystroke repeat rate used by the keyboard controller. Options: Disabled (default)、Enabled

Typematic Rate (Chars/Sec)

The rate at which a character repeats when you hold down a key.

Options: 6 (default)、8、10、12、15、20、24、30

Typematic Delay (Msec)

The delay before keystrokes begin to repeat. Options: 250 (default)、500、750、1000

APIC Mode

By enabling this option, "MPS version control for OS" can be configured.

Options: Disabled、Enabled (default)

MPS Version Control For OS
The 1.1 version is the older version that supports 8 more IRQs in the Windows NT environment. Choose the new 1.4 version for Windows 2000 and Windows XP.

Options: 1.4 (default)、1.1

OS Select For DRAM > 64MB
Select "OS2" only if you are running the OS/2 operating system with greater than 64 MB of RAM. Options: Non-OS2 (default)、OS2

HDD S.M.A.R.T. Capability
Self Monitoring Analysis and Reporting Technology is a technology that enables a PC to attempt to predict the possible failure of storage drives. Options: Disabled (default)、Enabled

Advanced Chipset Features
DRAM Configuration
Max Memclock(MHz)
This item allows you to select the memory clock. When it set to "Auto", the system will automatically detected the memory clock. Options: Auto (default)、100、133、166

1T/2T Memory Timing
Use this item to select the memory timing that you installed. Options: Auto (default)、1T、2T

CAS# latency (Tcl)
This item determines CAS Latency. When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer. Options: Auto (default)、2.0、2.5、3

RAS# to CAS# delay (Trcd)
Select the DRAM delay time when being read.

Options: Auto (default)、2、3、4、5、6、7

Min RAS# active time (Tras)
This item allows you to select DRAM Active to precharge Delay.
Options: Auto、5、6、7、8、9、10、11、12、13、14、15

Row precharge Time (Trp)
You can set the time to precharge. Options: Auto、2、3、4、5、6

AGP Configuration
Fast Write
The AGP Fast Write technology allows the CPU to write directly to the graphics card bypassing the system AGP 4X speed. Choose "Enable" only when you used with AGP card support. Options: Disabled、Enabled(default)

AGP Aperture Size (MB)

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

Options: 256M(default)、128M、64M、32M

(The 1G and 512M options only appear when you install 8X AGP card.)

Hyper Transport Config

Hammer to M1689 Freq

This item allows you to select the M1689 Hyper transport frequency. Options: 200Mhz, 400Mhz, 600Mhz, 800Mhz(default), 1000Mhz

Memory Hole At 15M-16M

When enabled, you can reserve an area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. Refer to the user documentation of the peripheral you are installing for more information. Options: Disabled (default)、Enabled

System BIOS Cacheable

When enabled, accesses to system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. Options: Enabled、Disabled (default)

PnP/PCI Configurations

Reset Configuration Data

Select "Enabled" to reset the Extended System Configuration Data (ESCD) if you have installed a new add-on card and the system reconfiguration has caused such a serious conflict that the OS cannot boot. Options: Disabled (default)、Enabled

Resources Controlled By

BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you will not be able to manually assign IRQ DMA and memory base address fields, since BIOS automatically assigns them. Options: Auto <ESCD> (default)、Manual

IRQ Resources

When resources are controlled manually, you can assign each system interrupt a type, depending on the type of device using the interrupt. This is only configurable when "Resources Controlled By" is set to "Manual".

IRQ-3	assigned to: PCI device
IRQ-4	assigned to: PCI device
IRQ-5	assigned to: PCI device
IRQ-7	assigned to: PCI device
IRQ-9	assigned to: PCI device
IRQ-10	assigned to: PCI device
IRQ-11	assigned to: PCI device

IRQ-12 assigned to: PCI device
IRQ-14 assigned to: PCI device
IRQ-15 assigned to: PCI device

PCI / VGA Palette Snoop
Some graphic controllers that 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. Options: Disabled (default)、Enabled

PCI Latency Timer (CLK)
This item allows you to set up the PCI Latency Time (0-255). If you select the "32" it will optimize PCI speeds. Options: 0-255、32 (default)

Frequency/Voltage Control

Spread Spectrum
The Spread Spectrum function can reduce the EMI (Electromagnetic Interference) generated. Options: Enabled (default)、Disabled

PCI Speed Setting
This item allows you to set the PCI frequency. Options: Auto (default)、33.0、37.7、44.0

CPU Speed Detected
This item displays the CPU speed information detected by the system.

CPU Host Frequency (MHz)
This item displays the CPU Host frequency. You can set it from 200 to 333 for overclock. The default depends on your CPU frequency. Default: depends on CPU

Hammer Fid control
This field allows you to set the CPU Ratio. If your CPU is locked, you will not be able to adjust this field. The default depends on your CPU.

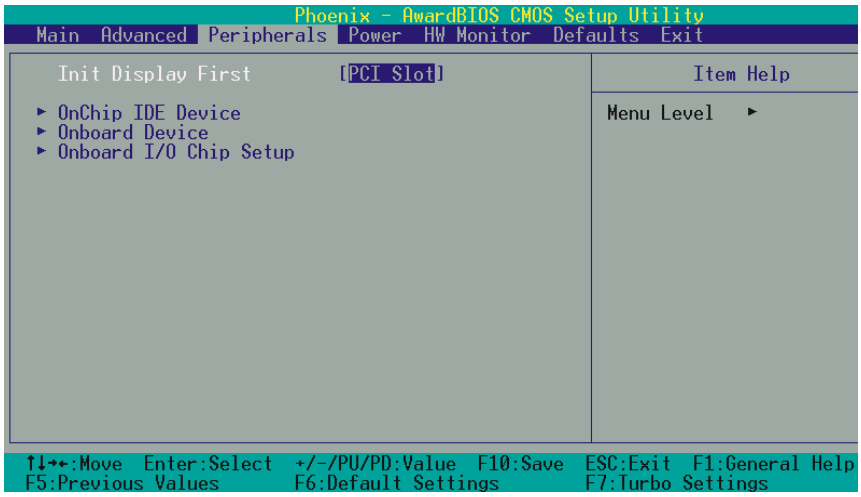
Hammer Vid control
This field allows you to adjust the CPU core voltage. Options: Start Up(default), 1.550V, 1.525V, 1.500V, 1.475V, 1.450V, 1.425V, 1.400V, 1.375V, 1.350V, 1.325V, 1.300V, 1.275V, 1.250V, 1.225V, 1.200V, 1.175V, 1.150V, 1.125V, 1.100V, 1.075V, 1.050V, 1.025V, 1.000V, 0.975V, 0.950V, 0.925V, 0.900V, 0.875V, 0.850V, 0.825V

CPU Voltage (Volt)
This item allows you to adjust your CPU core voltage.
Options: default, +5%, +10%,+15%

DDR Voltage (Volt)
This item allows you to adjust the RAM voltage. Options: default, 2.75.,2.80,2.85

AGP Voltage (Volt)
This item allows you to adjust the AGP Voltage. Options: 1.5 (default)、1.7

Integrated Peripherals



Init Display First

With systems that have multiple video cards, this option determines whether the primary display uses a PCI slot or an AGP slot. Options: AGP、PCI Slot (default)

OnChip IDE Device

IDE HDD Block Mode

Block mode is otherwise known as block transfer, multiple commands, or multiple sector read/write. Select the "Enabled" option if your IDE hard drive supports block mode (most new drives do). The system will automatically determine the optimal number of blocks to read and write per sector. Options: Enabled (default)、Disabled

On-Chip Primary/Secondary IDE

This item allows you to enable or disabled the Primary/ Secondary IDE channel.

Options: Enabled (default)、Disabled

Master/Slave PIO

The IDE PIO (programmed Input / Output) fields let you set a PIO mode (0-4) for each of the IDE devices that the onboard IDE interface supports. Modes 0 to 4 will increase performance incrementally. In Auto mode, the system automatically determines the best mode for each device. Options: Auto (default)、Mode0、Mode1、Mode2、Mode3、Mode4.

Master / Slave UDMA
Ultra DMA/133 functionality can be implemented if it is supported by the IDE hard drives in your system. As well, your operating environment requires a DMA driver (Windows 95 OSR2 or a third party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/133, select "Auto" to enable BIOS support.

Options: Auto (default)、Disabled

Onboard Device

USB Controller
This option should be enabled if your system has a USB port installed on the system board. You will need to disable this feature if you add a higher performance controller.
Options : Enabled (default) 、Disabled

USB 2.0 Controller Support
This option should be enabled if your system has a USB 2.0 device installed on the system board. You will need to disable this feature if you install a USB 1.1 device.
Options: Enabled (default)、Disabled

USB Keyboard Support
Enables support for USB attached keyboard. Options: Disabled (default)、Enabled

OnChip Audio Device
This option allows you to enabled or disabled the onboard audio device.
Options: Enabled (default)、Disabled

OnChip LAN Device (only for K8Ultra-U PRO)
This option allows you to control the onboard LAN device.
Options: Enabled (default)、Disabled

OnChip SATA Device
This option allows you to enable or disable the onboard SATA device.
Options: Enabled (default)、Disabled

Onboard I/O Chip Setup

POWER ON Function
Options: BUTTON ONLY (default)、Password、Hot Key、Mouse Left、Mouse Right、Any Key、Keyboard 98

KB Power ON Password
This it's the password that your system will use as part of the power-on sequence. The field is only configurable when "Power On Function" is set to "Password".

Hot Key Power ON
This option allows you to use the Ctrl key along with a hot key (function key) to power on your system. This field is only configurable when "Power On Function" is set to "Hot Key". Options: Ctrl-F1、Ctrl-F2……Ctrl-F12

Onboard FDC Controller
Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select "Disabled" in this field. Options: Enabled (default)、Disabled

Onboard Serial Port 1
Select an address and corresponding interrupt for the first serial port.

Options: Disabled、3F8/IRQ4 (default)、 2F8/IRQ3、 3E8/IRQ4、 2E8/IRQ3、 Auto

Onboard Serial Port 2
Select an address and corresponding interrupt for the second serial port.

Options: Disabled、2F8/IRQ3 (default)、3F8/IRQ4、3E8/IRQ4、2E8/IRQ3、Auto.

UART Mode Select
This item allows you to select the Infra Red (IR) standard to be used.

Options: Normal (default)、ASKIR、IrDA

RxD,TxD Active
This item determines the RxD and TxD frequencies. This field only configurable if "UART Mode" is set to "ASKIR" or "IrDA". Options: Hi/Lo (default)、Hi/Hi、Lo/Hi、Lo/Lo

IR Transmission Delay
This item allows you to enable/ disable IR transmission delay. This field only configurable if "UART Mode" is set to "ASKIR" or "IrDA". Options: Enabled (default)、Disabled

UR2 Duplex Mode
Select the transmission mode used by the IR interface. Full-duplex mode permits simultaneous bi-directional transmission. Half-duplex mode permits transmission in only one direction at a time. This field only configurable if " UART Mode" is set to "ASKIR" or "IrDA". Options: Half (default)、Full

Use IR Pins
Consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals. This field is only configurable if "UART Mode Select" is set to "ASKIR" or "IrDA". Options : IR-Rx2Tx2 (Enabled)、RxD2, TxD2

Onboard Parallel Port
This item allows you to determine the parallel port interrupt and address.

Options: 378/IRQ7 (default)、278/IRQ5、3BC/IRQ7、Disabled

Parallel Port Mode

This option allows you to select an operating mode for the on board parallel port.

Options:	ECP(default)	Extended Capabilities Port.
	EPP	Enhanced Parallel Port.
	SPP	Standard Printer Port.
	ECP＋EPP	ECP & EPP mode.
	Normal	

EPP Mode Select

Select EPP port type 1.7 or 1.9. Options: EPP 1.7, EPP1.9. (default)

ECP Mode Use DMA

Select a DMA Channel for the port. Options: 3 (default)、1

Game Port Address

Game Port I/O address. Options: 201 (default)、209、Disabled

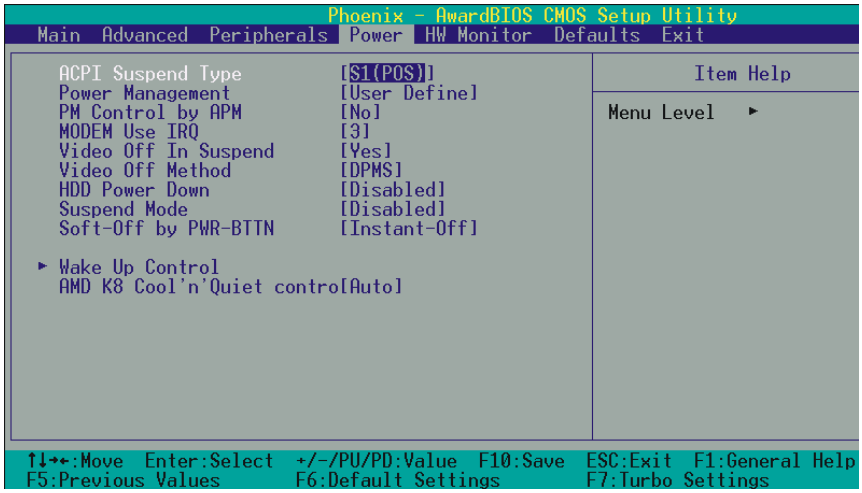
Midi Port Address

Midi Port Base I/O Address. Options: 330、300(default)、290、Disabled

Midi Port IRQ

This determines the IRQ that Midi Port will use. Options: 5 (default)、7、10(default)

Power Management



The Power Management Setup Menu allows you to configure your system to utilize energy conservation features as well as power-up/ power-down options.

ACPI Suspend Type

The item allows you to select the suspend type using the ACPI operating system.

Options:	S1 (POS) (default)	Power on Suspend
	S3 (STR)	Suspend to RAM
	S1 & S3	POS and STR

Power Management Option

There are three options of Power Management:

1. Min. Saving

Minimum power management

Suspend Mode = 1hour

2. Max. Saving

Maximum power management (only available for sl CPUs).

Suspend Mode = 1 min.

3. User Defined (default)

Allows you to set each mode individually.

When this option is enabled, the "suspend mode" time is configurable from 1 minute to 1 hour. Note: If you select Min. or Max. Power Saving modes, the "HDD Power Down" value and the "Suspend Mode" value are both fixed.

PM Control by APM

This item allows you to enable or disabled Advanced Power Management for Power Management of the system. Options: No (default)、Yes

MODEM Use IRQ

This determines the modem's IRQ. Options: 3(default)、NA、4、5、7、9、10、11

Video Off in Suspend

This field determines when to activate the video off feature for monitor power management. Options: Yes (Default)、NO

Video Off Method

This option determines the manner in which the monitor goes blank. Options:

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.

HDD Power Down

When enabled, the hard disk drive will power down after a certain configurable period of system inactivity. All other devices remain active.

Options: Disabled (default)、1 Min、2 Min、3 Min、4 Min、5 Min、6 Min、7 Min、8 Min、9 Min、10 Min、11 Min、12 Min、13 Min、14 Min、15Min

Suspend Mode

This item allows you to select the period of inactivity before the system is suspended or put into suspend mode.
Options: Disabled(default)、1Min、2Min、4Min、8Min、12Min、20Min、30Min、40Min、1Hour

Soft-Off by PWR-BTTN

In situations where the system enters a "hung" state, you can configure the BIOS so that you are required to pre the power button for more than 4 seconds before the system enters the Soft-Off state. Options: Instant-Off, Delay 4 Sec.

Wake Up Control

PWRON After PWR-Fail

This option determines whether you want to restart the system after a power failure. Select "On", to boot the system whether or not the system was on before power failure. Choose Former-Sts, to restore the system to the status before the power failure.

Options: Off (default)、On、Former-Sts

PCI PME Wake Up

When you select "Enabled", a PME signal from any PCI card will awaken the system from suspend mode. Options: Disabled (default)、Enabled

Lan Wake Up From S5

This item allows you to select LAN device to awaken the system from S5 mode.

Options: disabled (default)、Enabled

Ring Wake Up

This option allows you to awaken the system upon receiving an incoming call to a modem device. Option: Disabled (default)、Enabled

USB KB Wake Up

This item allows you to select USB devices to awaken the system from suspend mode.

Options: Disabled (default)、Enabled

RTC Wake Up

When "Enabled", you can set the date and time at which the RTC (real-time clock) alarm awakens the system from Suspend mode. Options: Enabled、Disabled (default)

Date (of Month) Alarm

You can choose which month the system will boot up. This field is only configurable when "RTC Wake Up" is set to "Enabled"

Time (hh: mm: ss) Alarm

You can choose the hour, minute and second the system will boot up. This field is only configurable when "RTC Wake Up" is set to "Enabled"

IRQs Activity Monitoring

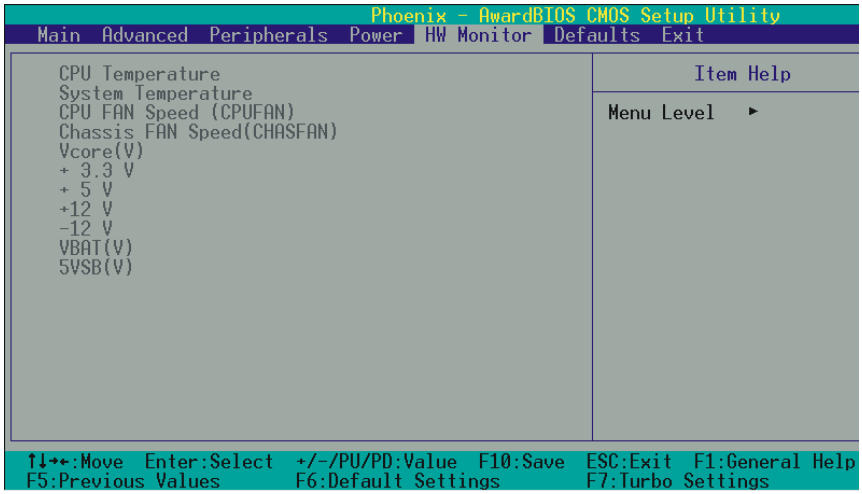
Press Enter to access a sub menu used to configure the different wake up events (i.e. wake on LPT & COMM activity).

IRQ1 (Keyboard)	Enabled
IRQ3 (COM2)	Disabled
IRQ4 (COM1)	Disabled
IRQ5 (LPT2)	Disabled
IRQ6 (Floppy Disk)	Enabled
IRQ7 (LPT1)	Disabled
IRQ8 (RTC Alarm)	Disabled
IRQ9 (IRQ2 Redir)	Disabled
IRQ10 (Reserved)	Disabled
IRQ11 (Reserved)	Disabled
IRQ12 (PS/2 Mouse)(PS2 Mouse)	Enabled
IRQ14 (Hard Disk)(Primary IDE)	Enabled
IRQ15 (Reserved)(Secondary IDE)	Disabled

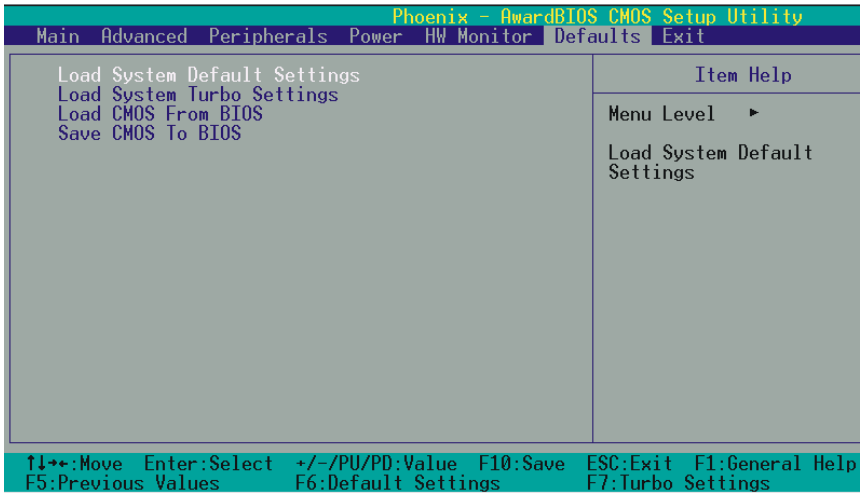
K8 Cool'n' Quiet control

When set to "Auto", the system will auto control the CPU voltage and frequency depends the loading of system. Options: Auto、Disabled (default)

Hardware Monitor



Load Defaults



Load System Default Settings

Load System Default Settings.

Load System Turbo Settings

Load System Turbo Settings.

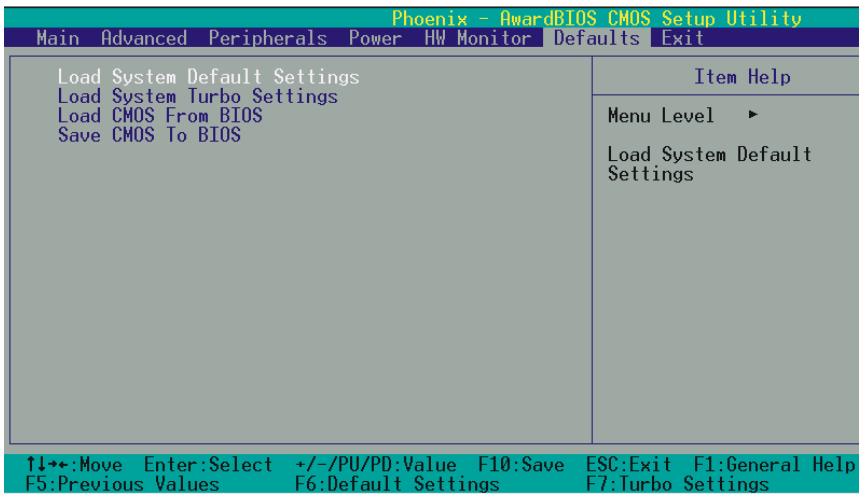
Load CMOS From BIOS

Load defaults from flash ROM for systems without batteries.

Save CMOS To BIOS

Save defaults to flash ROM for systems without batteries.

Exit Menu



Save & Exit Setup

Save all configuration changes to CMOS (memory) and exit setup. A confirmation message will be displayed before proceeding.

Exit Without Saving

Abandon all changes made during the current session and exit setup. A confirmation message will be displayed before proceeding.

Chapter 3: Software Setup

Software List

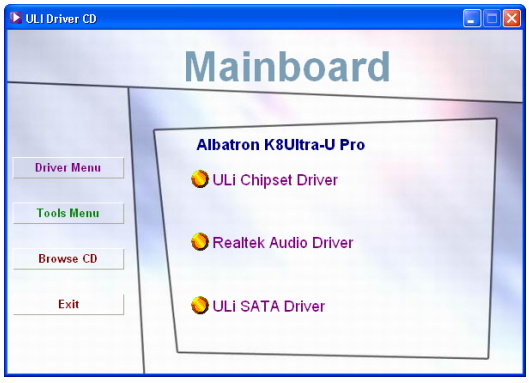
Category	Platform
ULi Chipset Driver	Windows 98 /ME /2000 /XP
Realtek Audio Driver	Windows 98 /ME /2000 /XP
ULi SATA Driver	Windows 98 /ME /2000 /XP
Trend PC-Cillin	Windows 98 /ME /2000 /XP
Mircosoft DirectX	Windows 98 /ME /2000 /XP
Adobe Acrobat Reader	Windows 98 /ME /2000 /XP
ATi_8X Patch	Windows 98 /ME /2000 /XP

Software Installation

◎ The screen and images are only for general reference. The version of the screens you received with your software may vary slightly.

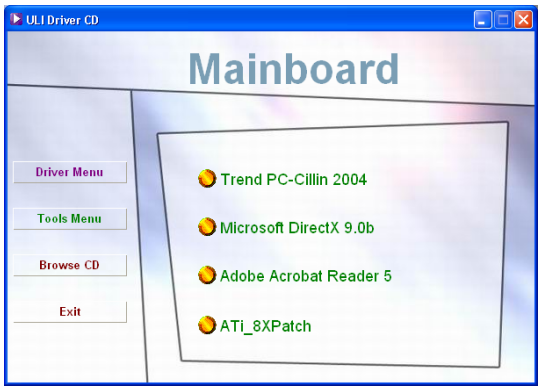
Place the Driver CD into the CD-ROM drive and the Installation Utility will auto-run. You can also launch the Driver CD Installation Utility manually by executing the ULi.exe program located on the Driver CD. (For more details, please refer to the Readme.txt files that in each folder of the Driver CD.)

1. When you insert the driver CD into the CD ROM, you'll see the screen as the picture below. There are several buttons displayed in the main screen as shown below.



- ULi Chipset Driver – provides all the drivers of the functions that built in the single chip
- Realtek Audio Driver – provides the driver of Realtek Audio Codec
- ULi SATA Driver – provides the driver of SATA device

2. Click the "Tool Menu" and you can choose the software to install.



- Trend PC-Cillin 2004 – provides the software of Trend PC-Cillin 2004 (Anti-virus program)
- Microsoft DirectX – provides software of Microsoft DirectX
- Adobe Acrobat Reader – install Adobe Acrobat Reader program that you can browse pdf files
- ATi_8X Patch – provides the software to increase the performance of ATi 8X Graphic Card

3. If you click the "Browse CD" button from the screen, you can browse all the files in the Driver CD.

4. Click "Exit" button to exit the program.

Installing SATA Driver during Windows® 2000/XP Installation.

Follow the instructions in this section if you are performing a new installation of Windows® 2000/XP and you wish to boot from a drive attached to the SATA connector.

1. Copy the "ULi SATA Driver" from the bundle CD Driver to a floppy disk. 【CD File Location Path => CD-ROM : \ Driver \ SATA\ Floppy\ copy all files】
2. Power off the system. Connect the SATA hard disk to one of the SATA connectors. Power up the system.
3. Place your Windows® 2000/XP CD into the CD-ROM/DVD drive. When the "Windows Setup" screen displays, press "F6".
4. Press 's' when setup asks if you want to specify an additional device. Insert the floppy disk which includes the "ULi SATA Driver" into the floppy drive.
   Press 'Enter' and select the appropriate OS device driver.
5. Press 'Enter' again to continue the setup process.
6. Follow the setup instructions and select your choice for partition and file system.
7. After setup examines your disks, it will copy files to the Windows® 2000/ XP installation folders and restart the system. After the system is rebooted the setup program will continue with the installation all the way to completion.
8. Wait until Windows® 2000/ XP finishes installing devices, regional settings, networking settings, components, and the final set of tasks. Reboot the system if you are asked to do so.

Chapter 4: Troubleshooting

Problem 1:
No power to the system. Power light does not illuminate. Fan inside power supply does not turn on. Indicator lights on keyboard are not lit.

Causes:

1. Power cable is unplugged.
2. Defective power cable.
3. Power supply failure.
4. Faulty wall outlet; circuit breaker or fuse blown.

Solutions:

1. Make sure power cable is securely plugged in.
2. Replace cable.
3. Contact technical support.
4. Use different socket, repair outlet, reset circuit breaker or replace fuse.

Problem 2:
System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is active but system seems "hung"

Causes: Memory DIMM is partially dislodged from the slot on the mainboard.

Solutions:

1. Power Down
2. Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

Problem 3:
System does not boot from the hard disk drive but can be booted from the CD-ROM drive.

Causes:

1. Connector between hard drive and system board unplugged.
2. Damaged hard disk or disk controller.
3. Hard disk directory or FAT is corrupted.

Solutions:

1. Check the cable running from the disk to the disk controller board. Make sure both ends are securely attached. Check the drive type in the standard CMOS setup.
2. Contact technical support.
3. Backing up the hard drive is extremely important. Make sure you periodically perform backups to avoid untimely disk crashes.

Problem 4:
System only boots from the CD-ROM. The hard disk can be read and applications can be used but booting from the hard disk is impossible.

Causes: Hard Disk boot sector has been corrupted.

Solutions: Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

Problem 5:
Error message reading "SECTOR NOT FOUND" displays and the system does not allow certain data to be accessed.

Causes: There are many reasons for this such as virus intrusion or disk failure.

Solutions: Back up any salvageable data. Then performs low level format, partition, and then a high level format the hard drive. Re-install all saved data when completed.

Problem 6:
Screen message says "Invalid Configuration" or "CMOS Failure."

Causes: Incorrect information entered into the BIOS setup program.

Solutions: Review system's equipment. Reconfigure the system.

Problem 7:
The Screen is blank.

Causes: No power to monitor.

Solutions: Check the power connectors to the monitor and to the system.

Problem 8:
Blank screen.

Causes:

1. Memory problem.

2. Computer virus.

Solutions:

1. Reboot computer. Reinstall memory. Make sure that all memory modules are securely installed.

2. Use anti-virus programs to detect and clean viruses.

Problem 9:
Screen goes blank periodically.

Causes: Screen saver is enabled.

Solutions: Disable screen saver.

Problem 10:
Keyboard failure.
Causes: Keyboard is disconnected.
Solutions: Reconnect keyboard. Replace keyboard if you continue to experience problems.

Problem 11:
No color on screen.
Causes:
1. Faulty Monitor.
2. CMOS incorrectly set up.
Solutions:
1. If possible, connect monitor to another system. If no color appears, replace monitor.
2. Call technical support.

Problem 12:
The screen displays "C: drive failure."
Causes: Hard drive cable not connected properly.
Solutions: Check hard drive cable.

Problem 13:
Cannot boot the system after installing a second hard drive.
Causes:
1. Master/slave jumpers not set correctly.
2. Hard drives are not compatible / different manufacturers.
Solutions:
1. Set master/slave jumpers correctly.
2.Run SETUP program and select the correct drive types. Call drive manufacturers for possible compatibility problems with other drives.

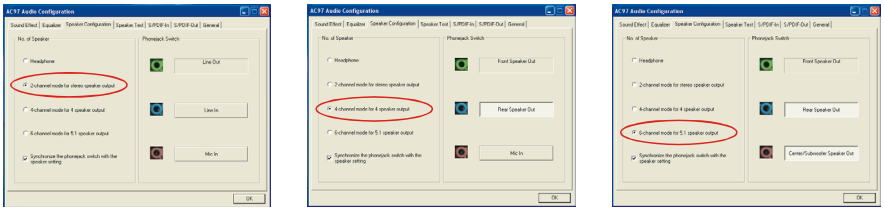
Problem 14:
Missing operating system on hard drive.
Causes: CMOS setup has been changed.
Solutions: Run setup and select the correct drive type.

Problem 15:
Certain keys do not function.
Causes: Keys jammed or defective.
Solutions: Replace keyboard.

Appendix I: Super 5.1 Channel Setup

1. After getting into the system, click the audio icon from the Windows screen.
2. Click Speaker Configuration button, you can see the screen like the picture below.
3. You can choose 2, 4 or 6 channels by your speakers.

2 Channels **4 Channels** **6 Channels**



Super 5.1 Channel Audio Effect

This mainboard comes with an ALC655 Codec which supports high quality 5.1 Channel audio effects. With ALC655, you are able to use standard line-jacks for surround audio output without connecting to any auxiliary external modules. To use this function, you have to install the audio driver in the bonus Pack CD as well as an audio application supporting 5.1 Channel audio effects. See the audio Port Connectors in the Hardware Installation section for a description of the output connectors.

Speaker Test

Make sure the cable is firmly into the connector.

1. Click the audio icon from the Windows screen.
2. Click Speaker Test button, you can see the screen like the pictures below.
3. Select the speaker which you want to test by clicking on it..

2 Channels **4 Channels** **6 Channels**