



## Item Checklist

This item checklist is only available for retail market. Completely check your package, If you discover damaged or missing items, contact your retailer.

- K7S746FX mainboard
- QDI Utility CD
- User's manual
- IDE ribbon cable
- Floppy ribbon cable
- I/O shield(option)
- Cable with bracket for USB Connectors(option)



### Notice

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# Declaration of conformity



**QUANTUM DESIGNS(HK) LTD.**

**20th Floor, Devon House, Taikoo Place, 979 King's Road,  
Quarry Bay, Hong Kong**

declares that the product

**Mainboard**

**K7S746FX**

is in conformity with

(reference to the specification under which conformity is declared in  
accordance with 89/336 EEC-EMC Directive)

- EN 55022 Limits and methods of measurements of radio disturbance characteristics of information technology equipment
- EN 50081-1 Generic emission standard Part 1:  
Residential, commercial and light industry
- EN 50082-1 Generic immunity standard Part 1:  
Residential, commercial and light industry

European Representative:

QDI COMPUTER ( UK ) LTD

QDI COMPUTER ( SCANDINAVIA ) A/S

QDI SYSTEM HANDEL GMBH

QDI EUROPE B. V.

QDI COMPUTER (FRANCE) SARL

QDI COMPUTER HANDELS GMBH

LEGEND QDI SPAIN S.L

QDI COMPUTER (SWEDEN) AB

Signature :

Place / Date : HONG KONG/2003

Printed Name : Xu Wenge

Position/ Title : Assistant President

# Declaration of conformity



Trade Name: QDI Computer ( U. S . A. ) Inc.  
Model Name: **K7S746FX**  
Responsible Party: QDI Computer ( U. S. A.) Inc.  
Address: 41456 Christy Street  
Fremont, CA 94538  
Telephone: (510) 668-4933  
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Equipment Classification: FCC Class B Subassembly  
Type of Product: Mainboard  
**Manufacturer: Quantum Designs (HK) Inc.**  
Address: 20th Floor, Devon House, Taikoo Place  
979 King's Road, Quarry Bay, HONG  
KONG

## Supplementary Information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tested to comply with FCC standards.

Signature : 

Date : 2003

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Board Layout



**Caution**

**Be sure to unplug the AC power supply before adding or removing expansion cards, RAM or other system peripherals, otherwise your mainboard and RAM might be seriously damaged.**



**Caution**

**Be sure to add some Silicone Grease between the CPU and the heatsink to keep them fully contacted to meet the heat sink requirement.**



**This manual is suitable for mainboards of K7S746FX. Each mainboard is carefully designed for the PC user who wants diverse features.**

**-6A: with 6-channels onboard Audio**

**-6AL: with 6-channels onboard Audio and LAN**

**-6AFL: with 6-channels onboard Audio, LAN and IEEE 1394 ports**

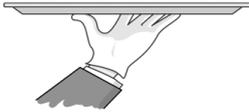
**-6ALFS: with 6-channels onboard Audio, LAN ,IEEE 1394 ports and SATA(optional)**



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# Chapter 1



## Introduction

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K7S746FX mainboards utilize ( SIS 746FX + SIS 963/963L) chipset providing a fully compatible, high performance and cost-effective ATX platform. The new integrated technologies, together with AGP 8X support, AC'97 audio(2/6-channels), integrated LAN(optional), 6 USB 2.0 ports, 2 DRR 400 slots, 2 IEEE 1394 ports (optional), and 2 SATA connectors(optional), give customers an advanced, multimedia solution at reasonable price. It provides 200/266/333MHz host bus speed to support AMD socket 462 processors and the largest DDR memory capacity is up to 2GB. It also provides advanced features such as Wake-on-LAN, AntiVirus function, ACPI function and so on. The optimal implementation of the Advanced Configuration and Power interface (ACPI) specification makes the PC's power consumption drop to the lowest possible level and enable quick wakeup.

---



## **Key Features**

### **Form factor**

- ATX form factor of 295mm x 200mm

### **Microprocessor**

- Supports AMD socket 462 Duron/Athlon/Athlon XP CPU of 200/266/333MHz host bus speed
- Supports 200/266/333MHz host bus speed

### **System memory**

- Provides two 184-pin DDR SDRAM interfaces
- Supports DDR266/DDR333/DDR400 SDRAM
- Supports 64/128/256/512Mb technology up to 2GB

### **Onboard IDE**

- Supports Independent timing of up to 4 drives
- Supports Ultra ATA 133/100/66/33, PIO mode
- Two fast IDE interfaces supporting four IDE devices including IDE hard disks and CDROM/DVDROM drives

### **Onboard LAN (Optional)**

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

### **USB Ports**

- USB 2.0 compliant, operates at 480Mbps, about 40X times faster than USB 1.1 which currently works at a snails pace of just 12Mbps

### **IEEE 1394 Ports(Optional)**

- Supports two IEEE 1394a ports

### **AGP Interface**

- AGP 1.5V Connector supports AGP 2.0 including AGP 4x data transfers and AGP 3.0 including AGP 8x data transfers



### **6-Channel Onboard Audio(Optional)**

- AC'97 2.2 Specification Compliant
- Provides Front left&right, Rear left&right/Line-in Jack and Center&Woofer/ Microphone-in Jack,which can be specified by software
- 5.1 channels output

### **Onboard I/O**

- One floppy port supporting one 3.5" or 5.25" floppy drives with 360K/ 720K/1.2M/1.44M/2.88M format
- One high speed 16550 compatible UARTs ( COM1 ) with 16 byte send/receive FIFO
- One parallel port supports SPP/EPP/ECP mode
- Infrared interface
- All I/O ports can be enabled/disabled in the BIOS setup

### **Onboard SATA & Raid(available on -6ALS mainboard)(optional)**

- Supports hot-plug
- Two SATA devices including SATA HDD and CDROM/DVD ROM devices
- Supports 150Mbps transfer rate.
- Supports Raid 0 or Raid 1(optional).

### **BIOS**

- Licensed advanced AWARD(Phoenix) BIOS, supports flash ROM, plug and play ready
- Supports IDE CDROM/SCSI and USB devices boot up

### **Green function**

- Supports ACPI (Advanced Configuration and Power Interface) and ODPM (OS Directed Power Management)
- Supports ACPI power status: S0 (full-on), S1 (power on suspend), S4(STD,suspend to Disk,depends on OS) and S5 (soft off)

### **Expansion slots**

- 1 AGP slot
- 5 PCI slots



## Advanced Features

- PCI 2.2 Specification Compliant
- Provides Trend ChipAwayVirus On Guard
- Supports Windows 98/2000/ME/XP soft-off
- Supports Wake-on-LAN
- Supports Wake up by keyboard password
- Supports system monitoring(monitors CPU and system temperatures, system voltages, fan speed. available on several models)

## Main Expansion Slots and Connectors

Slot/Port (Quantity)	Description
PCI( 5 )	PCI slots
AGP( 1 )	AGP slot
IDE( 2 )	IDE Ports
FLOPPY( 1 )	Floppy Drive port
DDR( 2 )	DDR Sockets
USB( 6 )	USB Connectors
IEEE 1394(2) (optional)	IEEE 1394 Connector
UART( 1 )	UART Connectors
PARALLEL( 1 )	Parallel Connector
IrDA( 1 )	IrDA Connector



## Chapter 2



### Installation Instructions

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This section covers External Connectors and Jumper Settings. Refer to the mainboard layout chart for locations of all jumpers, external connectors, slots and I/O ports. Furthermore, this section lists all necessary connector pin assignments for your reference. The particular state of the jumpers, connectors and ports are illustrated in the following figures. Before setting the jumpers or inserting these connectors, please pay attention to the directions.

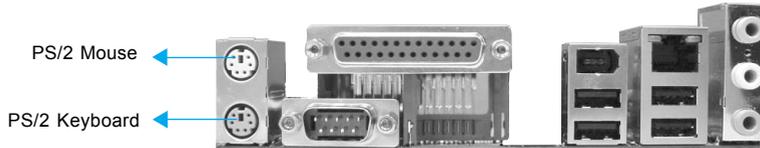
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## External Connectors

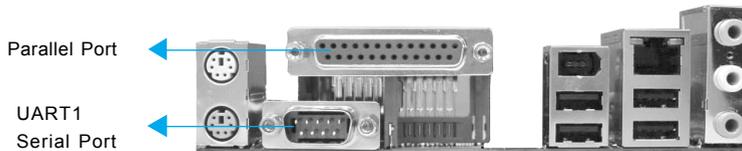
### PS/2 Keyboard/Mouse Connector

PS/2 keyboard connector is for the usage of PS/2 keyboard. If using a standard AT size keyboard, an adapter should be used to fit this connector. PS/2 mouse connector is for the usage of PS/2 mouse.



### Parallel Port & Serial Port Connector (COM1)

The parallel port connector can be connected to a parallel device such as a printer. The serial port COM1 connector can be connected to a serial port device such as a serial port mouse. You can enable/disable them and choose the IRQ or I/O address in "Integrated Peripherals" from AWARD BIOS SETUP.



**Warning:**

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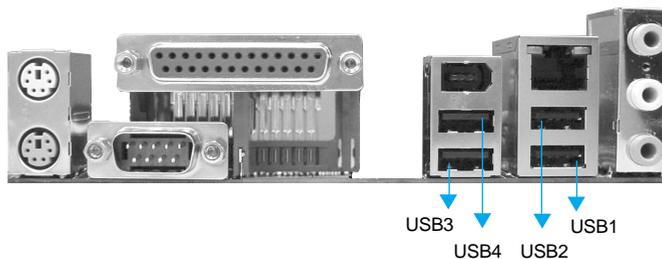
*Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, otherwise your mainboard and expansion cards might be seriously damaged.*

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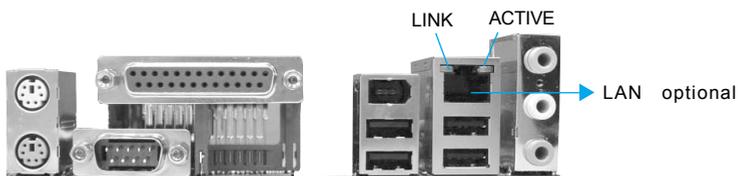
### USB1, USB2, USB3, USB4 Connectors

Four USB 2.0 ports are for connecting USB devices.



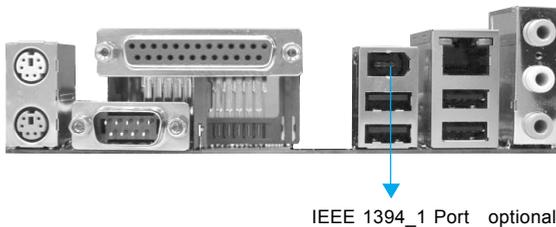
### LAN Connectors (optional)

The RJ-45 connector is for onboard LAN.



### IEEE 1394 Port (IEEE 1394\_1)(optional)

IEEE 1394 port is for connecting IEEE 1394 devices.



### Line-in jack, Microphone-in jack & Speaker-out jack

The Line-in jack can be connected to devices such as a cassette or minidisc player to playback or record. The Microphone-in jack can be connected to a microphone for voice input. The Speaker-out jack allows you to connect speakers or headphones for audio output from the internal amplifier.



### 6-Channel Audio

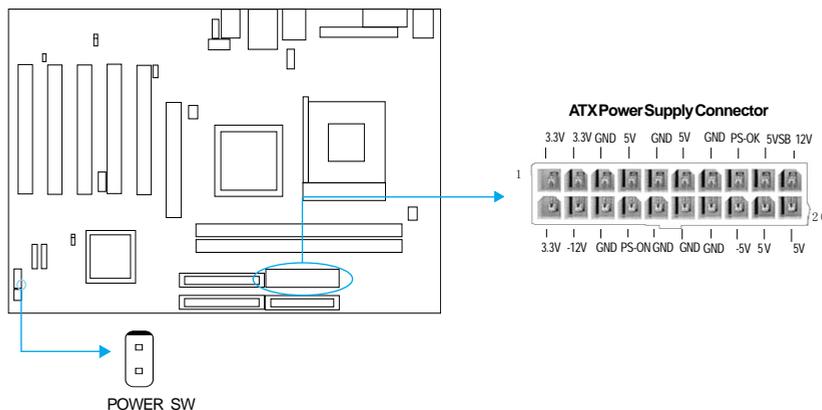
This mainboard utilizes ALC655chip providing 6-channel Audio, which consists of Front Left, Front Right, Rear Left, Rear Right, Center and Woofer for a complete surround sound effect. When 6-Channel audio is available, the front Left&Right jack can be connected to the Front speakers, the Back Left&Right jack can be connected to the rear speakers and the Center&Woofer jack can be connected to the center speaker and woofer. Microphone function is offered by Microphone In or F\_AUDIO Connector on the mainboard

If set 2-Channel Audio mode on -6A or -6AL mainboard, you can connect two speakers to the Front Left&Right jack, at the same time use the Rear Left&Right jack as Line in jack, and use the Center&Woofer jack as Microphone in jack.



## ATX Power Supply Connector & Power Switch (POWER SW)

Be sure to connect the power supply plug to this connector in its proper orientation. The power switch (POWER SW) should be connected to a momentary switch. When powering up your system, first turn on the mechanical switch of the power supply (if one is provided), then push once the power switch. When powering off the system, you needn't turn off the mechanical switch, just push once the power switch.



### Note:

*If you change "Power Button Override" from default "Instant-off" to "Delay 4 Sec" in the "POWER MANAGEMENT SETUP" section of the BIOS, the power switch should be pressed for more than 4 seconds before the system powers down.*

## Hard Disk LED Connector (HD\_LED)

The connector connects to the case's IDE indicator LED indicating the activity status of IDE hard disk. The connector has an orientation. If one way doesn't work, try the other way.

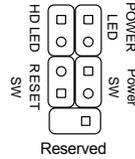
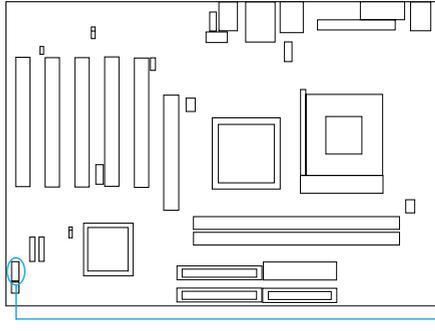
## Reset Switch (RESET)

The connector connects to the case's reset switch. Press the switch once, the system resets.



### Power LED Connector (PWR\_LED)

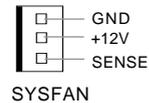
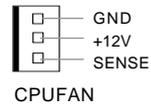
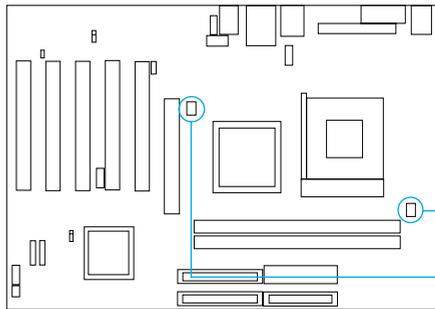
When the system is in S0 status, the LED is blink; When the system is in S5 or S1 status, the LED is off. The connector has an orientation.



HDD LED	HDD LED(+)	PWR LED(+)	POWER LED
	HDD LED(-)	PWR LED(-)	
RESET SW	GND	POWER	POWER SW
	POWER	GND	
	EMPTY	REVERSE	

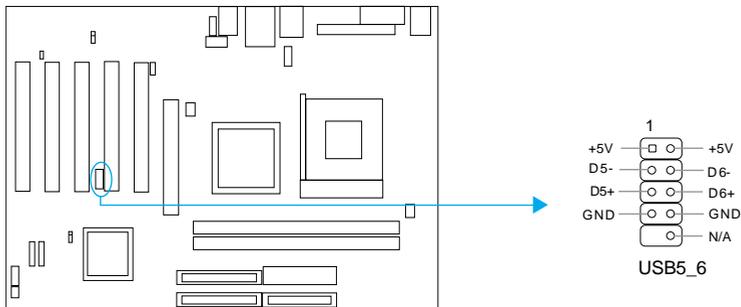
### Fan Connectors (SYSFAN, CPUFAN)

The fan speed of CPUFAN and SYSFAN can be detected and viewed in “PC Health” section of the CMOS SETUP.



**USB5, USB6 port(USB5\_6)**

Besides USB1,2,3,4 on the back panel, the K7S746FX mainboard also have one 10-pin headers on board which may connect to front panel USB cable( optional ) to provide additional two USB ports.

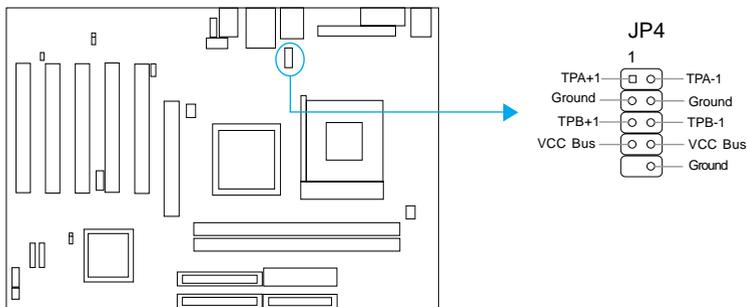
**Warning:**

*Be sure to connect correctly your cable to the connector, otherwise your mainboard and USB devices might be seriously damaged.*

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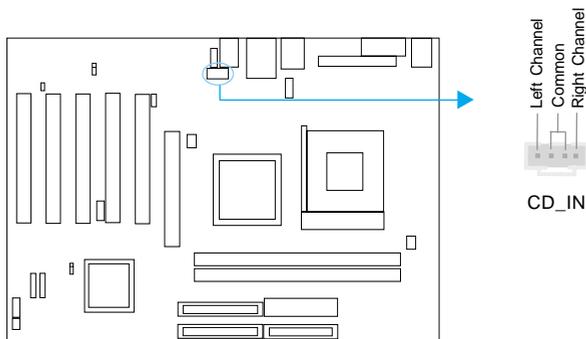
**IEEE 1394\_2 port(optional)**

Besides 1394\_1 on the back panel, the K7S746FX mainboard also have one 10-pin headers on board to provide additional IEEE 1394 port.



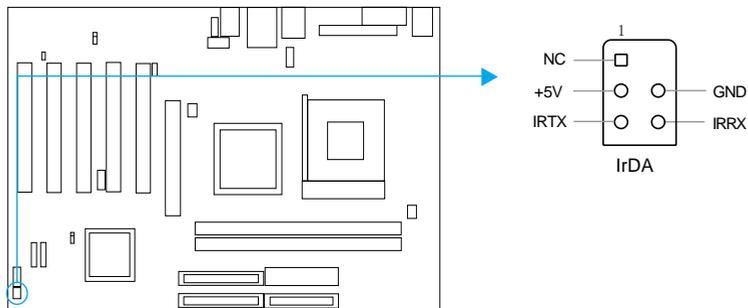
### Audio Connectors (CD\_IN)

CD\_IN is Sony standard CD audio connectors, it can be connected to a CD-ROM drive through a CD audio cable.



### Infrared Header (IrDA)

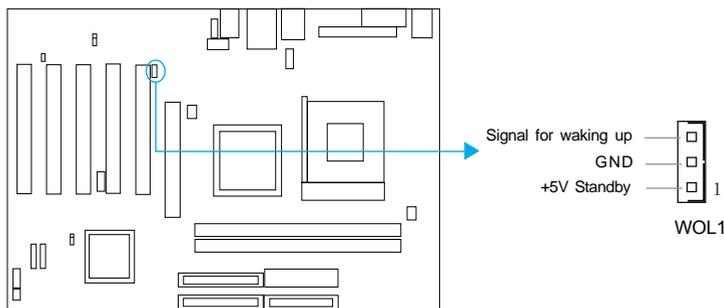
This connector supports wireless transmitting and receiving device. Before using this function, configure the settings for IR Address, IR Mode and IR IRQ from the "INTEGRATED PERIPHERALS" section of the CMOS SETUP.



## Wake-Up On LAN (WOL1)

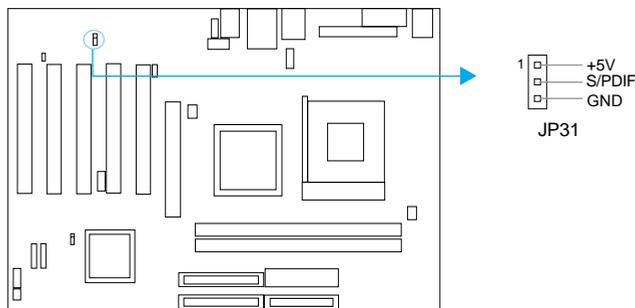
(Only for extend PCI LAN adapter supports the WOL function. On-board Lan need not connect to the connector)

Through the Wake-Up On LAN function, a wake event occurring from the network can wake up the system. If this function is to be used, please be sure an ATX power supply of which 5VSB line is capable of delivering current at least 720mA, and a LAN adapter which supports this function is used. Then connect this header to the relevant connector on the LAN adapter, set “Ring power up control” as Enabled under the sub-section “PM Wake Up Events” 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.



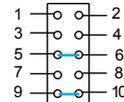
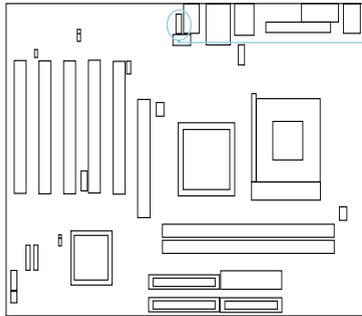
## S/PDIF Output Connector(JP31)

The S/PDIF (Sony/Philips Digital Interface) output connector allow your digital audio output to the SPDIF\_in on the external speaker.



### Audio Interface (F\_Audio)

The audio interface provides two kinds of audio output choices: the Front Audio, the Rear Audio. Their priority level is as sequence. When the Front Audio is available, the Rear Audio will be cut off. An onboard amplifier is provided for the earphone. When the Front Audio is absent, Pin5 and Pin6, Pin9 and Pin10 must be short connected.



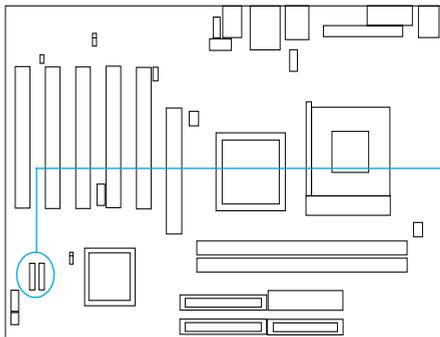
F\_Audio

(F\_Audio Interface)

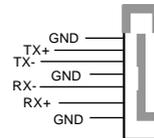
Pin No.	Symbol	Pin No.	Symbol
1	Front MIC	2	GND(ALO)
3	+5VA	4	+5VA
5	Front Out Right	6	Front Right
7	NC	8	NC
9	Front Out Left	10	Front Left

### Onboard SATA(Optional)

The mainboard provides two Serial ATA connectors, SATA is a storage interface that is compliant with SATA 1.0 Specification. With speed of up to 150Mbps, you can connect Serial ATA cable to Serial ATA hard disk.



CON1/CON2



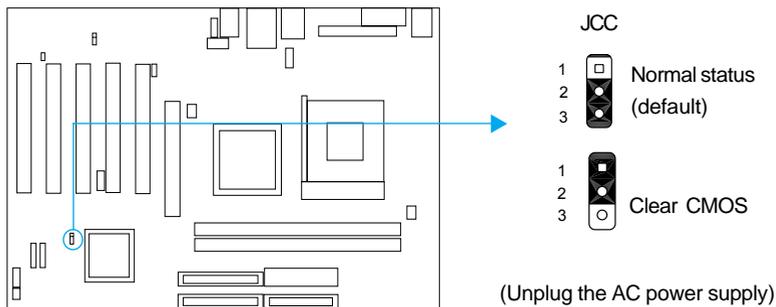
## Jumper Settings

Jumpers are located on the mainboard, clear CMOS jumper CLR\_CMOS and BIOS protection jumper JAV. Pin 1 for all jumpers are located on the side with a thick white line (Pin1-- ) , referring to the mainboard's silkscreen. Jumpers with three pins will be shown as  to represent pin1 & pin2 ("1-2") closed and  to represent pin2 & pin3 ("2-3") closed.

Jumper	Symbol	Description	Represent
3Pin		1-2	set pin1 and pin2 closed
		2-3	set pin2 and pin3 closed
2Pin		close	set the pins closed
		open	set the pins opened

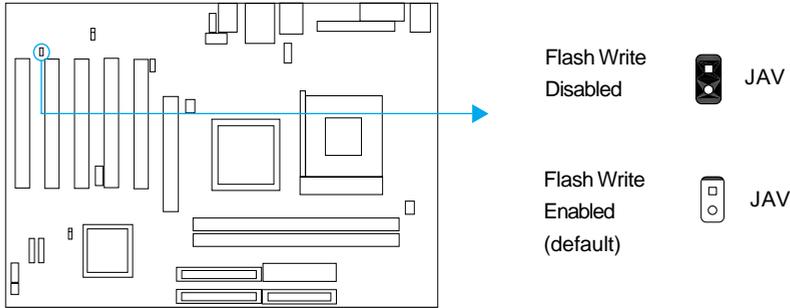
## Clear CMOS (JCC)

If you want to clear CMOS, unplug the AC power supply first, close JCC (pin1 & pin2) once, set JCC back to the normal status with pin2 & pin3 connected, then power on the system.



### BIOS-Protection Jumper (JAV)

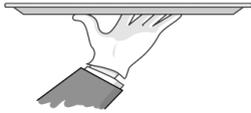
The BIOS of the mainboard is inside the FWH. If the jumper JAV is set as closed, the system BIOS is protected from being attacked by serious virus such as CIH virus, you will be unable to flash the BIOS to the mainboard. However in this status .



Setting the jumper JAV as open(default), allows you to flash the BIOS to the Flash ROM. The DMI (Desktop Management Interface) system information such as the CPU type/speed, memory size, and expansion cards will be detected by the onboard BIOS and stored in the flash ROM. Whenever the system hardware configuration is changed, DMI information will be updated automatically. However, setting jumper JAV as closed makes flashing BIOS and updating DMI information impossible. Therefore, set JAV as open when changing the system hardware configuration, or the error message “Unknown Flash Type” will be displayed on the screen, and DMI information may not be updated. Under special conditions, the jumper “JAV” should be set as OPEN.



## Chapter 3



### BIOS Description

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The mainboard uses Phoenix AWARD® BIOS Setup program that provides a Setup utility for users to modify the basic system configuration. The information is stored in a battery-backed CMOS RAM so it retains the Setup information when the power is turned off. This chapter provides you with the overview of the BIOS Setup.

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## Utility Support

### **AWDFLASH.EXE**

This is a flash memory write/read utility used for the purpose of upgrading your BIOS when necessary. Before doing so, please note:

- We strongly recommend you only upgrade BIOS when encounter problems.
- Before upgrading your BIOS, review the description below to avoid making mistakes, destroying the BIOS and resulting in a non-working system.

When you encounter problems, for example, you find your system does not support the latest CPU released on our current mainboard, you may therefore upgrade the BIOS, please don't forget to set BIOS\_WP as open and disable the "Flash Write Protect" item in AWARD BIOS CMOS Setup first.

### **Follow the steps exactly for a successful upgrade.**

1. Create a bootable system floppy diskette by typing Format A:/s from the DOS prompt under DOS6.xx or Windows 9x environment.
2. Copy AWDFLASH.EXE (version>=8.24b) from the directory \Utility located on QDI Mainboard Utility CD onto your new bootable diskette.
3. Download the updated BIOS file from the Website (<http://www.qdigrp.com>). Please be sure to download the suitable BIOS file for your mainboard.
4. Decompress the file downloaded, copy the BIOS file (xx.bin) onto the bootable diskette, and note the checksum of this BIOS which is located in readme file.
5. Reboot the system from the bootable diskette created.
6. Then run the AWDFLASH utility at the A:\ prompt as shown below:  
A:\AWDFLASH xxxx.bin

If you require more detailed information concerning AWDFLASH Utility, for example, the different usage of parameters, please type A:\>AWDFLASH /?



**Note:**

1. Follow the instruction through the process. Don't turn off power or reset the system until the BIOS upgrade has been completed.
2. AWDFLASH.EXE (version>=8.24b) utility must be used to upgrade the mainboard family BIOS instead of QDI flash utility.



## AWARD(Phoenix) BIOS Description

### Entering Setup

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 <Del> to enter SETUP

Once you have entered, the Main Menu (Figure 1) appears on the screen. The main menu allows you to select from eleven setup functions and two exit choices. Use the arrow keys to select among the items and press the <Enter> key to accept or enter the sub-menu.

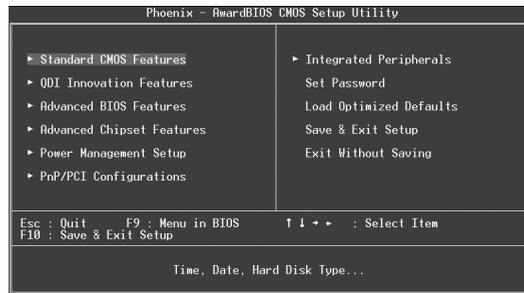


Figure-1 Main Menu

### Load Optimized Defaults

The Optimized Defaults are common and efficient. It is recommended users load the optimized defaults first, then modify the needed configuration settings.

### Standard CMOS Features Setup

The basic CMOS settings included in “Standard CMOS Features” are Date, Time, Hard Disk Drive Types, Floppy Disk Drive Types, and VGA etc. Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value desired in each item.



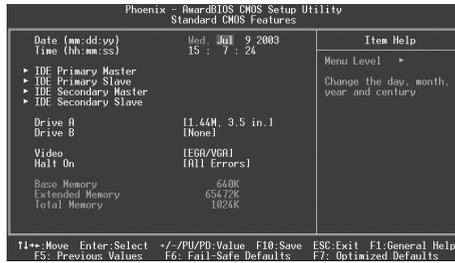


Figure-2 Standard CMOS Setup Menu

For the items marked, press enter, a window will pop up as shown below. You can view detailed information or make modifications.

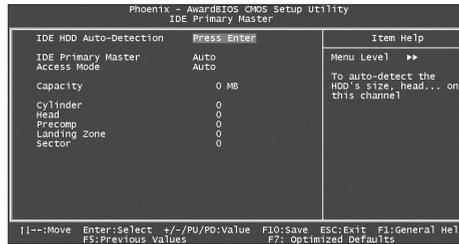


Figure-2-1 IDE Primary Master Setup Menu

## Hard Disk

### Primary Master/Primary Slave/Secondary Master/Secondary 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', the related information should be entered regarding the following items. Enter the information directly from the keyboard and press < Enter>:

CYLS	number of cylinders	HEAD	number of heads
PRECOMP	write pre-compensation	LANDZ	landing zone
SECTOR	number of sectors	MODE	HDD access mode



The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE.

### **CHS mode**

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum number of cylinders, heads and sectors for CHS mode are 1024,16 and 63.

If the user sets his HDD to NORMAL mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that.

### **LBA (Logical Block Addressing) mode**

A new HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads and sectors shown in setup may not be the number physically contained in the HDD.

During HDD accessing, the IDE controller will transform the logical address described by sector, head and cylinder number into its own physical address inside the HDD.

### **Large mode**

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, users do not want LBA). The Award BIOS provides another alternative to support these kinds of HDD.

BIOS tricks DOS (or other OS) into dividing the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse transformation process will be made inside INT13h in order to access the right HDD address.

If using Auto detect, the BIOS will automatically detect the IDE hard disk mode and set it as one of the three modes.

### **Remark**

*To support LBA or LARGE mode of HDDs, there must be some softwares involved which are located in Award HDD Service Routine(INT13h).It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.*



**Video**

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

No errors	The system boot will not stop for any errors that may be detected.
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
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 POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.
Extended Memory	The BIOS determines how much extended memory is presented during the POST.
Total Memory	Total memory of the system .



## QDI Innovation Features

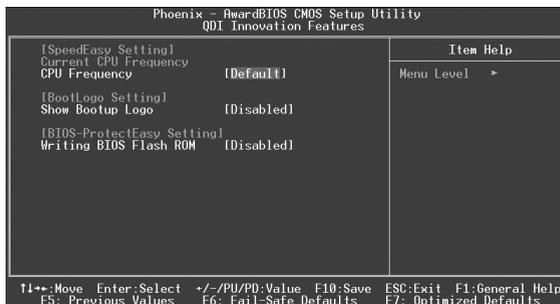


Figure-3 QDI Innovation features Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
<b>[SpeedEasy Setting]</b>		
• CPU Frequency	default 100MHz 133MHz 166MHz 200MHz	Set CPU frequency.
<b>[BootLogo Setting]</b>		
• Show Bootup Logo	Enabled Disabled	The full-screen logo will be shown automatically when system boots up, otherwise, no logo appears on the screen.
<b>[BIOS-ProtectEasy Setting]</b>		
• Writing BIOS Flash ROM	Enabled Disabled	The option is for protecting the system BIOS, when enabled, you can write BIOS.



### Warning:

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



## Advanced BIOS Features Setup

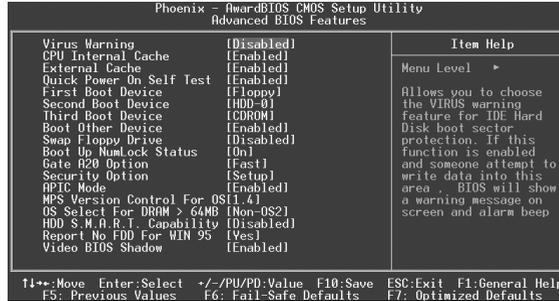


Figure-4 Advanced BIOS Features Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
● Virus warning	<i>Enabled</i>	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 alarm beep.
	<i>Disabled</i>	Invalidates this function.
● CPU Internal Cache	<i>Enabled</i>	Enable CPU Internal cache.
	<i>Disabled</i>	Disable CPU Internal cache.
● External Cache	<i>Enabled</i>	Enable CPU external cache.
	<i>Disabled</i>	Disable CPU external cache.
● Quick Power On Self Test	<i>Enabled</i>	Allow the system to skip certain tests while booting. On Self Test This will decrease the time needed to boot the system.
	<i>Disabled</i>	Normal POST.
● First (Second, Third) Boot Device Boot Other Device	<i>Floppy</i>	Select Your Boot Device Priority. It could be Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, LAN, Disabled.
	<i>LS120</i>	
	<i>HDD-0</i>	
	<i>..... Disabled</i>	



• Swap Floppy Drive	<i>Enabled</i> <i>Disabled</i>	If the system has two floppy drives, choose enable to assign physical drive B to logical drive.
• Boot Up NumLock Status	<i>On</i> <i>Off</i>	Select power on state for NumLock.
• Gate A20 Option	<i>Normal</i> <i>Fast</i>	Let chipset control GateA20 and Normal - a pin in the keyboard controller controls GateA20.
• Security Option	<i>Setup</i> <i>System</i>	Select whether the password is required every time the system boot or only when you enter setup.
• APIC Mode	<i>Enabled</i> <i>Disabled</i>	Enable the APIC mode(Advanced Programmable Interrupt Controller). Disabled the APIC mode.
• MPS Version Control for OS	<i>1.1/1.4</i>	Set the MPS Version Control for OS.
• OS Select For DRAM>64MB	<i>Non-OS2</i> <i>OS2</i>	Select OS2 only if you are running OS/2 operating system with more than 64MB of RAM.
• HDD S.M.A.R.T. Capability	<i>Enabled</i> <i>Disabled</i>	Enable hard disk S.M.A.R.T. support. Invalidate this feature.
• Report no FDD for WIN 95	<i>Yes</i> <i>No</i>	Report NO Floppy Disk Drive for WIN95 to release IRQ6. Do not report No Floppy Disk Drive for WIN95.
• Video BIOS Shadow	<i>Enabled</i> <i>Disabled</i>	Video BIOS will be copied to RAM. Video Shadow will increase the video speed. Invalidates this feature.



## Advanced Chipset Features Setup

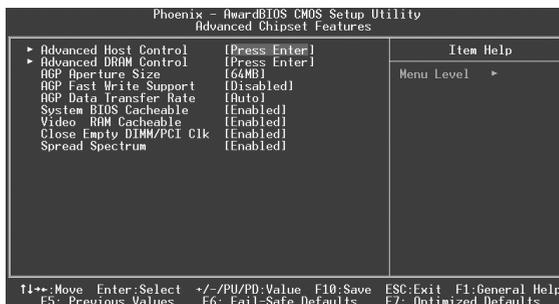


Figure-6 Advanced Chipset Features Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
● Advance Host Control	<i>Press Enter</i>	Press enter to set the items about advance Host.
● Advance DRAM Control	<i>Press Enter</i>	Press enter to set the items about advance DRAM.
● AGP Aperture Size (MB)	<i>4MB/8MB/ 16MB/32MB/ 64MB/128MB/ 256MB/512MB</i>	Set the effective size of the Graphics Aperture to be used in the particular GART Configuration.
● AGP Fast write support	<i>Enabled Disabled</i>	Enable AGP fast write support. Disable AGP fast write support.
● AGP date transfer rate	<i>Auto 1x/2x/4x/8x</i>	Set the AGP date transfer rate.
● System BIOS Cacheable	<i>Enabled Disabled</i>	Besides conventional memory, system BIOS area is also cacheabl Video BIOS area is not cacheable.
● Video RAM Cacheable	<i>Enabled Disabled</i>	Besides conventional memory, video RAM area is also cacheable. Video RAM area is not cacheable.



<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"> <li>Close Empty DIMM/PCI Clk</li> </ul>	<i>Enabled</i> <i>Disabled</i>	Close empty DIMM or PCI clock to reduce EMI. Do not close empty DIMM or PCI clock.
<ul style="list-style-type: none"> <li>Spread Spectrum</li> </ul>	<i>Enabled</i> <i>Disabled</i>	Enable Clock Spread Spectrum to reduce EMI. Disable Clock Spread Spectrum.

### Advance Host Control

<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"> <li>Memory hole at 15M-16M</li> </ul>	<i>Enabled</i> <i>Disabled</i>	Memory hole at 15-16M is reserved for expanded ISA card. Do not set this memory hole.
<ul style="list-style-type: none"> <li>CPU Command ACK limit</li> </ul>	4/8	Set CPU command acknowledge limit.

### Advance DRAM Control

<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"> <li>DRAM Frequency</li> </ul>	<i>by SPD</i> <i>100MHz/</i> <i>133MHz/</i> <i>166MHz/</i> <i>200MHz</i>	Set DRAM frequency.
<ul style="list-style-type: none"> <li>Auto Configuration</li> </ul>	<i>Normal</i> <i>Performance</i>	Set DRAM configuration.
<ul style="list-style-type: none"> <li>DDR SDRAM CAS Latency</li> </ul>	<i>Auto</i> <i>2T/2.5T/3T</i>	Define the latency between the SDRAM read command and the time the data actually becomes available.
<ul style="list-style-type: none"> <li>CPU/DRAM Bypass ctrl</li> </ul>	<i>Auto</i> <i>Disabled</i>	Set CPU/DRAM Bypass ctrl. Disable CPU/DRAM Bypass ctrl.



## Power Management Setup

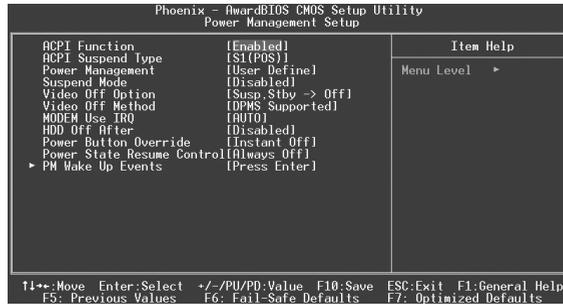


Figure-7 Power Management Setup Menu

The following indicates the options for each item and describes their meaning.

Item	Option	Description
ACPI function	<i>Enabled</i> <i>Disabled</i>	Enable ACPI function. Disable this function.
ACPI Suspend Type	<i>S1(POS)</i>	Select the ACPI suspend type.
Power Management	<i>User Define</i> <i>Min Saving</i> <i>Max Saving</i>	Users can configure their own Power Management Timer. Pre - defined timer values are used. All timers are in their MAX values. Pre - defined timer values are used. All timers are in their MIN values.
Suspend Mode	<i>Disabled</i> <i>1Min ~1Hour</i>	The system never enter Suspend mode by timer. Define the continuous idle time before the system enters Suspend mode. If any items defined in "PM Events" are on and activated, the system will be woken up.



<u>Item</u>	<u>Option</u>	<u>Description</u>
● Video Off Option	<i>Suspend-&gt;Off</i>	Screen blanks after the system enters suspend mode.
	<i>susp,stby-&gt;Off</i>	Screen blanks after the system enters either standby mode or suspend mode.
	<i>All modes-&gt;Off</i>	Screen blanks after the system enters standby mode, suspend mode or doze mode.
	<i>Always On</i>	Screen is always on.
● Video Off Method	<i>Blank Screen</i>	The system BIOS will only blank off the screen when disabling video.
	<i>V/H SYNC + Blank</i>	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA card to monitor.
	<i>DPMS</i>	This function is enabled only for VGA cards supporting DPMS. <b>Note: When the green monitor does not detect the V/H-SYNC signals, the electron gun will be turned off.</b>
● MODEM Use IRQ	<i>3, 4, 5, 7, 9 10, 11, NA</i>	Special wake-up event for Modem.
● HDD Off After	<i>Disabled 1 - 15 Min</i>	HDD's motor will not turn off by timer. Define the continuous HDD idle time before the HDD enters power saving mode (motor off).
● Power Button Override	<i>Instant-Off</i>	The system will immediately power off once the power button is pressed.
	<i>Delay 4 sec</i>	The system will power off when power button is pressed for more than 4 seconds.



<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"> <li>Power State Resume Control</li> </ul>	<ul style="list-style-type: none"> <li><i>Always Off</i></li> <li><i>Always On</i></li> <li><i>Keep Pre-States</i></li> </ul>	<ul style="list-style-type: none"> <li>System is always off when put on AC power.</li> <li>System is on once put on AC power.</li> <li>Keep the preceding states.</li> </ul>
<ul style="list-style-type: none"> <li>PM Wake up Events</li> </ul>	<ul style="list-style-type: none"> <li><i>Press Enter</i></li> </ul>	<ul style="list-style-type: none"> <li>Enter to set the items about PM.</li> </ul>

### PM Wake up Events

<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"> <li>IRQ(3~7,9~15) NMI</li> </ul>	<ul style="list-style-type: none"> <li><i>Enabled</i></li> <li><i>Disabled</i></li> </ul>	<ul style="list-style-type: none"> <li>Enables IRQ"X" to wake up.</li> <li>Disables IRQ"X" to wake up.</li> </ul>
<ul style="list-style-type: none"> <li>IRQ 8 Break Suspend</li> </ul>	<ul style="list-style-type: none"> <li><i>Enabled</i></li> <li><i>Disabled</i></li> </ul>	<ul style="list-style-type: none"> <li>Allows the system to be waken up by IRQ 8.</li> <li>Does not allow the system to be waken up by IRQ8.</li> </ul>
<ul style="list-style-type: none"> <li>Ring power up control</li> </ul>	<ul style="list-style-type: none"> <li><i>Enabled</i></li> <li><i>Disabled</i></li> </ul>	<ul style="list-style-type: none"> <li>Allow the system to be powered on when a Ring indicator signal comes up to UART1 or UART2 from external modem .</li> <li>Do not allow Ring wake up.</li> </ul>
<ul style="list-style-type: none"> <li>MACPME Power Up Control</li> </ul>	<ul style="list-style-type: none"> <li><i>Enabled</i></li> <li><i>Disabled</i></li> </ul>	<ul style="list-style-type: none"> <li>Allows the system to be waken up by onboard LAN.</li> <li>Does not allow the system to be powered on by onbard LAN.</li> </ul>
<ul style="list-style-type: none"> <li>PCIPME Power Up Control</li> </ul>	<ul style="list-style-type: none"> <li><i>Enabled</i></li> <li><i>Disabled</i></li> </ul>	<ul style="list-style-type: none"> <li>Allows the system to be waken up by PCI card.</li> <li>Does not allow the system to be powered on by PCI card.</li> </ul>
<ul style="list-style-type: none"> <li>PS/2KB Power up control</li> </ul>	<ul style="list-style-type: none"> <li><i>Password</i></li> <li><i>Any Key</i></li> <li><i>Hot Key</i></li> </ul>	<ul style="list-style-type: none"> <li>Use PS/2 Keyboard password wake up.</li> <li>Use PS/2 Keyboard any key wake up.</li> <li>Use PS/2 Keyboard hot key wake up.</li> </ul>



## PM Wake up Events

<u>Item</u>	<u>Option</u>	<u>Description</u>
<ul style="list-style-type: none"><li>Power up by Alarm</li></ul>	<i>Enabled</i>	RTC alarm can be used to generate a wake-up event to power up the system.
	<i>Disabled</i>	RTC has no alarm function.



## PNP/PCI Configuration Setup



Figure-8 PNP/PCI Configuration Setup Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
● Reset Configuration Data	<i>Enabled</i>	Default setting is Disabled. Select Enabled to reset Extended System Configuration Data ESCD when you exit Setup, if you have installed a new add-on and the system reconfiguration has caused serious conflicts preventing the OS from booting.
	<i>Disabled</i>	Disable the configuration data function.
● Resources Controlled By	<i>Auto(ESCD)</i>	BIOS can automatically configure all boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, because BIOS automatically assigns them.
	<i>Manual</i>	
● IRQ Resources	<i>Press Enter</i>	Press enter to set the items about IRQ resources.
● PCI/VGA Palette Snoop	<i>Disabled</i>	Default setting.
	<i>Enabled</i>	Non-standard VGA cards such as graphics accelerators or MPEG video cards may not show colors properly. Enabling this item can solve this problem.



## Integrated Peripherals

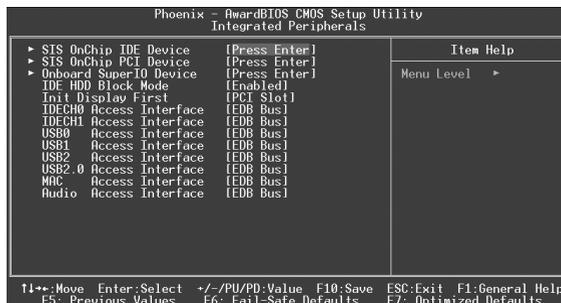


Figure-9 Integrated Peripherals Menu

The following indicates the options for each item and describes their meaning.

<u>Item</u>	<u>Option</u>	<u>Description</u>
● SIS Onchip IDE Device	<i>Press Enter</i>	Press enter to set On-Chip IDE device.
● SIS Onchip PCI Device	<i>Press Enter</i>	Press enter to set On-Chip PCI device.
● Onboard SuperIO Device	<i>Press Enter</i>	Press enter to set Onboard SuperIO device.
● IDE HDD Block Mode	<i>Enabled</i> <i>Disabled</i>	Allow IDE HDD to read/write several sectors at once. IDE HDD only reads/writes a sector once.
● Init Display First	<i>PCI Slot</i> <i>AGP</i>	Initialize the PCI VGA first. Initialize the AGP first.
● IDE0/1 Access Interface	<i>EDB BUS</i> <i>PCI BUS</i>	Access IDE0/1 using EDB BUS. Access IDE0/1 using PCI BUS.
● USB0/1/2/2.0 Access Interface	<i>EDB BUS</i> <i>PCI BUS</i>	Access USB1 using EDB BUS. Access USB1 using PCI BUS.
● MAC Access Interface	<i>EDB BUS</i> <i>PCI BUS</i>	Access MAC using EDB BUS. Access MAC using PCI BUS.
● Audio Access Interface	<i>EDB BUS</i> <i>PCI BUS</i>	Access Audio using EDB BUS. Access Audio using PCI BUS.



### SIS OnChip IDE Device

<u>Item</u>	<u>Option</u>	<u>Description</u>
● Internal PCI/IDE	<i>Disabled</i> <i>Primary</i> <i>Secondary</i> <i>Both</i>	Set the ports of Onboard IDE.
● IDE Primary Primary/Secondary Master/Slave PIO	<i>Mode 0 - 4</i> <i>Auto</i>	Define the IDE primary master/ slave PIO mode. The IDE PIO mode is defined by auto-detection.
● Primary/Secondary Master/Slave Ultra DMA	<i>Auto</i>  <i>Disabled</i>	Ultra DMA mode will be enabled if an Ultra DMA device is detected. Disable this function.
● IDE Burst Mode	<i>Enabled</i> <i>Disabled</i>	Enables IDE Burst Mode. Disables IDE Burst Mode.

### SIS OnChip PCI Device

<u>Item</u>	<u>Option</u>	<u>Description</u>
● SIS USB Controller	<i>Enabled</i> <i>Disabled</i>	Enable the on-chip USB controller. Disable the on-chip USB controller.
● USB Ports Number	3~6	Select the USB ports number.
● USB 2.0 Supports	<i>Enabled</i> <i>Disabled</i>	Enable USB 2.0 to support. Disable USB 2.0 to support.
● USB Keyboard support	<i>Enabled</i> <i>Disabled</i>	Support USB Keyboard under legacy OS. Disable this function.
● SIS AC97 Audio	<i>Enabled</i> <i>Disabled</i>	Enable the onboard AC97 Audio codec. Disable the onboard AC97 Audio codec.
● SIS S/W Modem	<i>Enabled</i> <i>Disabled</i>	Enable CNR AC97 Modem. Disable CNR AC97 Modem.
● SIS 10/100M ETHERNET	<i>Enabled</i> <i>Disable</i>	The onboard LAN is enabled. The onboard LAN is disabled.
● SIS 1394 Controller	<i>Enabled</i> <i>Disable</i>	The onboard 1394 controller is enabled. The onboard 1394 controller is disabled.



## Onboard SuperIO Device

<u>Item</u>	<u>Option</u>	<u>Description</u>
● Onboard FDC Controller	<i>Enabled</i> <i>Disabled</i>	Onboard floppy disk controller is enabled. Onboard floppy disk controller is disabled.
● Onboard Serial Port 1/2	<i>3F8/IRQ4,</i> <i>2F8/IRQ3,</i> <i>3E8/IRQ4,</i> <i>2E8/IRQ3,</i> <i>Auto</i>  <i>Disabled</i>	Define the onboard serial port address and required interrupt number.  Onboard serial port address and IRQ are automatically assigned. Onboard serial port is disabled.
● UART Mode Select	<i>Normal</i> <i>IrDA</i> <i>ASK IR</i> <i>SCR</i>	Defines Serial Port as standard serial port. Supports IRDA mode. Supports SHARP ASK-IR protocol with maximum baud rate up to 57600bps.
● UR2 Duplex Mode	<i>Half /Full</i>	Default is recommended.
● Onboard Parallel Port	<i>378/IRQ7</i> <i>278/IRQ5</i> <i>3BC/IRQ7</i> <i>Disabled</i>	Define parallel port address and IRQ channel.  Onboard parallel port is disabled.
● Parallel Port Mode	<i>SPP / EPP</i> <i>ECP /</i> <i>ECP+EPP</i>	Define the parallel port mode.
● ECP Mode Use DMA	<i>3</i> <i>1</i>	Set ECP Mode Use DMA is 1 or 3.



## Password Setting

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

### **ENTER PASSWORD**

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

### **PASSWORD DISABLED**

If you have selected “**System**” in “Security Option” of “BIOS Features Setup” menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected “**Setup**” at “Security Option” from “BIOS Features Setup” menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

## Boot with BIOS defaults

If you have made all the changes to CMOS values and the system can not boot with the CMOS values selected in setup, clear CMOS after power-down, then power on again. System will boot with BIOS default settings.



# Appendix

## QDI Utility CD

A QDI Utility CD is supplied with this mainboard, the contents contained in it are showed as below:

### 1. Driver Install

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

- |                             |                            |
|-----------------------------|----------------------------|
| A. Chipset software         | B. USB2.0 Driver(optional) |
| C. Network Driver(optional) | D. Audio Driver(optional)  |
| E. IDE Driver               | F. DirectX                 |

### 2. Accessory

Norton AntiVirus 2003

### 3. Browse CD

You could read all the contents contained in this CD, including Utility and Documents. The files included in Utility are:

Awdflash.exe

Acrobat Reader

Note: If you need the updated Awdflash.exe file, please visit our web-site:

[www.qdigrp.com](http://www.qdigrp.com)

## Norton AntiVirus

When you install Norton AntiVirus and accept options, your computer is safe. Norton AntiVirus automatically checks boot records for viruses at system startup, Checks programs for viruses at the time you use them, scans all local hard drives for viruses once per week, and monitors your computer for any activity that might indicate the work of a virus in action. It also scans files you download from the internet and checks floppy disks for boot viruses when you use them.

The list below shows the most important tasks Norton AntiVirus helps you perform: Scan for viruses on your computer;Remove viruses from your computer;Update your virus protection with LiveUpdate;Quarantine an infected file. you can go to the Symantec Web site to view an online tutorial:

<http://www.symantec.com/techsupp/tutorial>



### Using 4-/6-Channel Audio(4-/6- Channel Audio Interface)

The motherboard is equipped with 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 better surround sound effect. The section will tell you how to install and use 4/6-channel audio function on the board.

### Installing the Audio Driver

The Realtek ALC655 chipset driver has to be installed before the 4-/6-Channel audio function can be used.

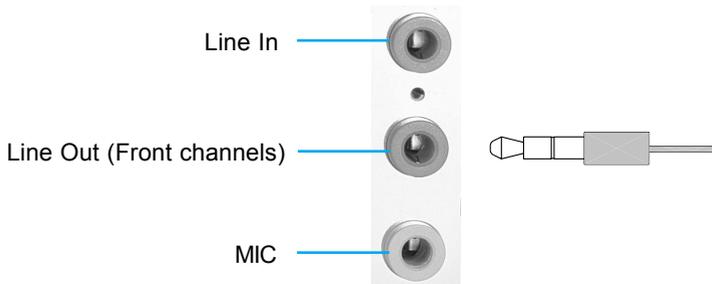
### Using 4-/6-channel Audio Function

You can start to use the 4-/6-channel audio function After the driver is installed completely. The first, you can connect 4 or 6 speakers to the audio output connector. Then open utility to set the work parameter.

### 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

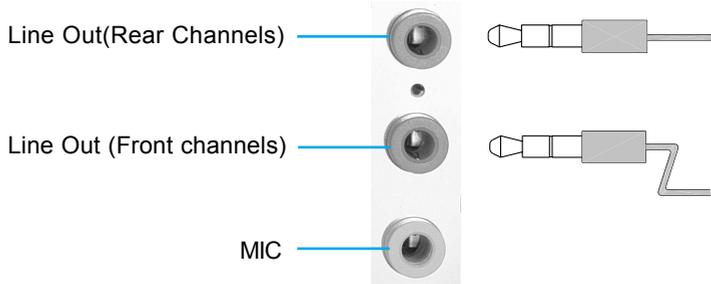


#### Description:

Line Out, Line In and MIC functions all exist under 2-channel configuration.



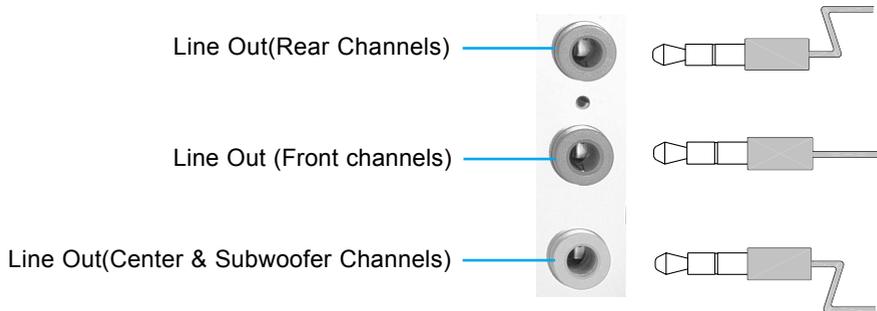
## 4-Channel Analog Audio Output



**Description:**

Line In is converted to Line Out function under 4-channel configuration.

## 6-Channel Analog Audio Output



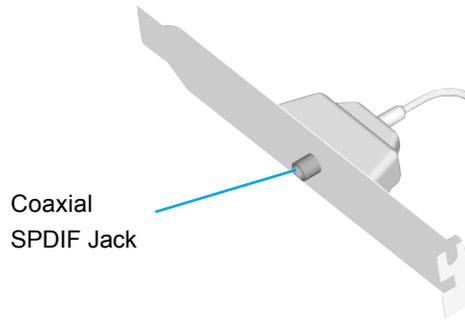
**Description:**

Both Line In and MIC are converted to Line Out function under 6- channel configuration.



## Digital Audio Output

(The figure is only for reference)

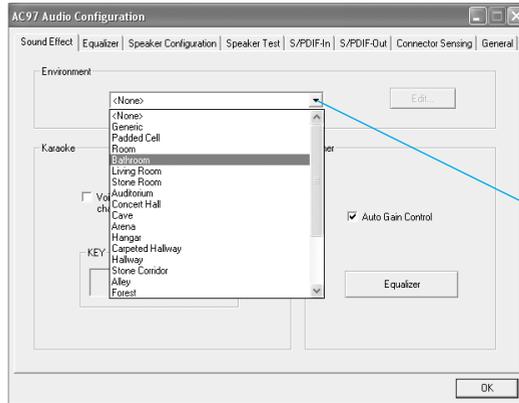


### Description:

Connect the SPDIF speakers to the Coaxial SPDIF jack.

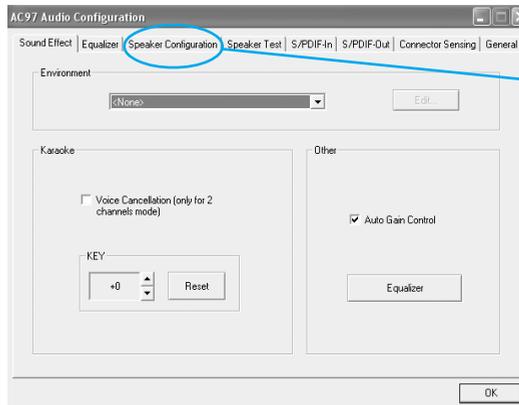
## Selecting 4- or 6-Channel Setting

1. Click the audio icon  from the window tray 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

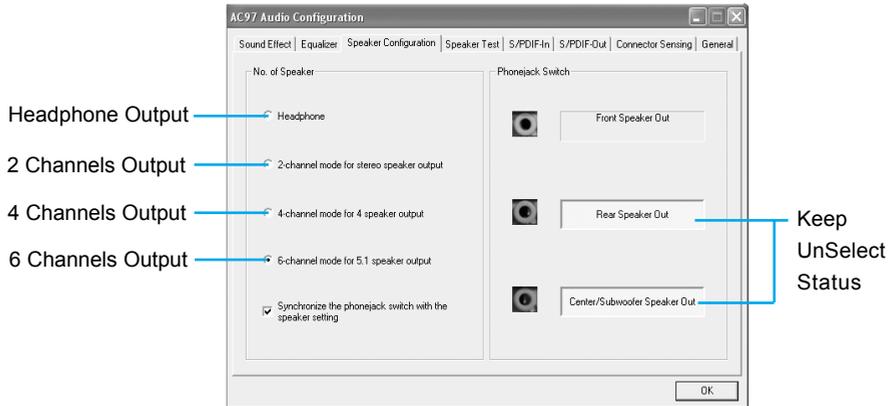
3. Click the Speaker Configuration tab.



Click here



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 work 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.

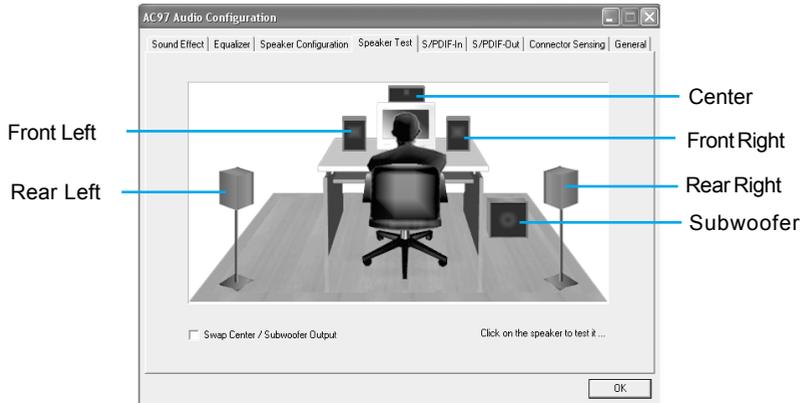
### Testing Each Speaker

The following window appears.

1. Click the audio icon  from the window tray 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 KaraOK***

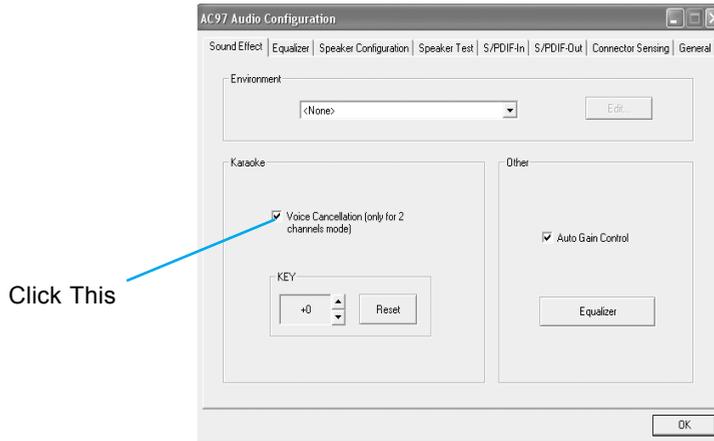
The KaraOK function will automatically remove human voice (lyrics) and leave melody for you to sing the song. **The function is applied only for 2-channel audio operation**, so make sure “2-channel mode” is selected in the “No. of Speakers” column before playing KaraOK.

### **Playing KaraOK**

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.



# **Board Layout of K7S746FX**

Note:  
The layout includes all options.  
It is for your reference only.

