

GA-7VAXFS

AMD Athlon™ /Athlon™ XP/Duron™ Socket A
Processor Motherboard

USER'S MANUAL

AMD Athlon™ /Athlon™ XP/Duron™ Socket A Processor Motherboard

Rev. 1001

12ME-7VAXFS-1001

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WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

Chapter 1 Introduction

Features Summary

Form Factor	<ul style="list-style-type: none">• 24.3cm x 30.5cm ATX size form factor, 4 layers PCB
Motherboard	<ul style="list-style-type: none">• GA-7VAXFS Motherboard
CPU	<ul style="list-style-type: none">• Socket A processor AMD Athlon™/Athlon™ XP/Duron™ (K7) Socket A processor 128K L1 & 256K/64K L2 cache on die 400MHz FSB and DDR bus speeds• Supports 1.4GHz and faster
Chipset	<ul style="list-style-type: none">• VIA KT400 Memory/AGP/PCI Controller(PAC)• VT8235 V-LINK Client Highly Integrated
Memory	<ul style="list-style-type: none">• 3 184-pin DDR DIMM sockets• Supports DDR DRAM 266/333 or PC1600/PC2100/PC2700• Supports up to 3GB DDR (Max)• Supports only 2.5V DDR DIMM
I/O Control	<ul style="list-style-type: none">• ITE8705F
Slots	<ul style="list-style-type: none">• 1 AGP slot supports 8X/4X mode & AGP 3.0 compliant• 5 PCI slot supports 33MHz & PCI 2.2 compliant• 1 CNR (Communication and Networking Riser) slot
On-Board IDE	<ul style="list-style-type: none">• 2 IDE bus master (ATA133/100/66) IDE ports for up to 4 ATAPI devices• Supports PIO mode3,4 (ATA133/100/66) IDE & ATAPI CD-ROM
On-Board Peripherals	<ul style="list-style-type: none">• 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes• 1 Parallel port supports Normal/EPP/ECP mode• 2 Serial ports (COM A & COM B)• 6 USB2.0/1.1 ports (2 x Rear, 4 x Front by cable)• 1 Front Audio connector• 1 IrDA connector for IR

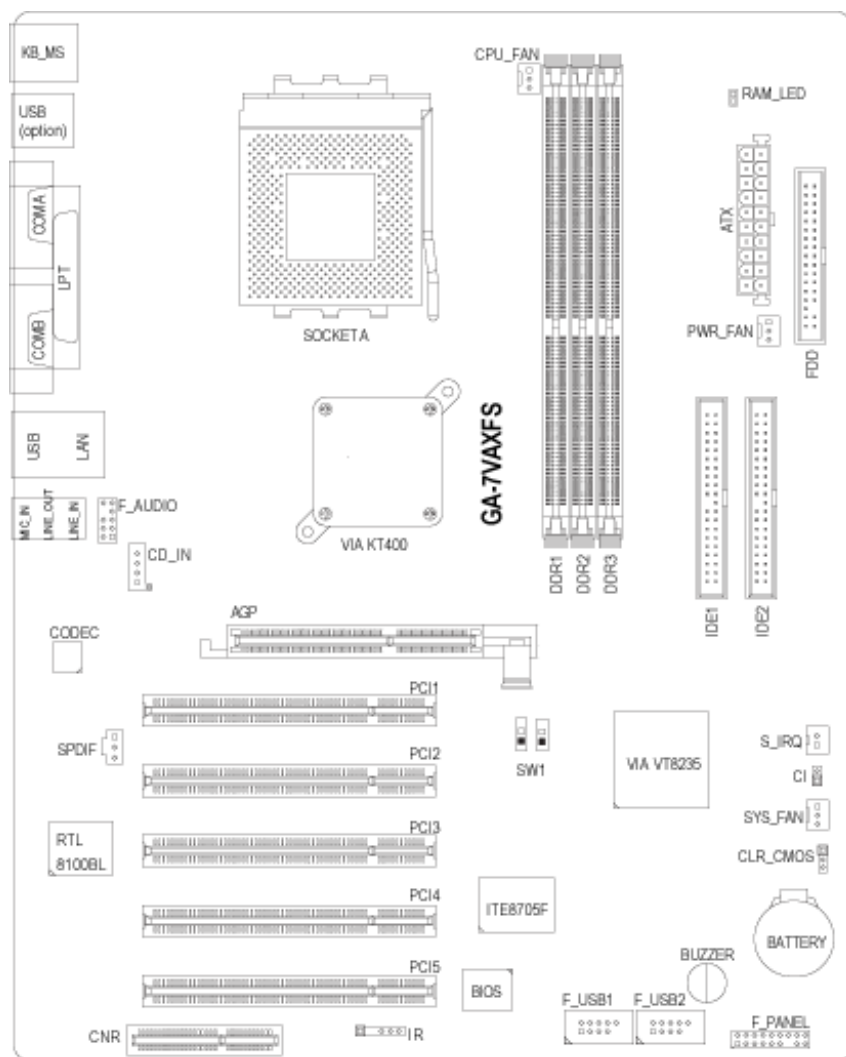
to be continued.....

On-Board Sound	<ul style="list-style-type: none"> • Realtek ALC650 CODEC • 1 Buzzer • Line Out / 2 front speaker • Line In • Mic In • SPDIF out • CD In
On-Board LAN	<ul style="list-style-type: none"> • Build in RTL8100BL Chipset • 1 RJ45 port
PS/2 Connector	<ul style="list-style-type: none"> • PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	<ul style="list-style-type: none"> • Licensed Award BIOS, 2M bit FWH
Additional Features	<ul style="list-style-type: none"> • PS/2 KB/Mouse wake up from S1 • USB devices wake up from S3 • AC Recovery • Supports STR (Suspend-To-RAM)



Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards...tc.

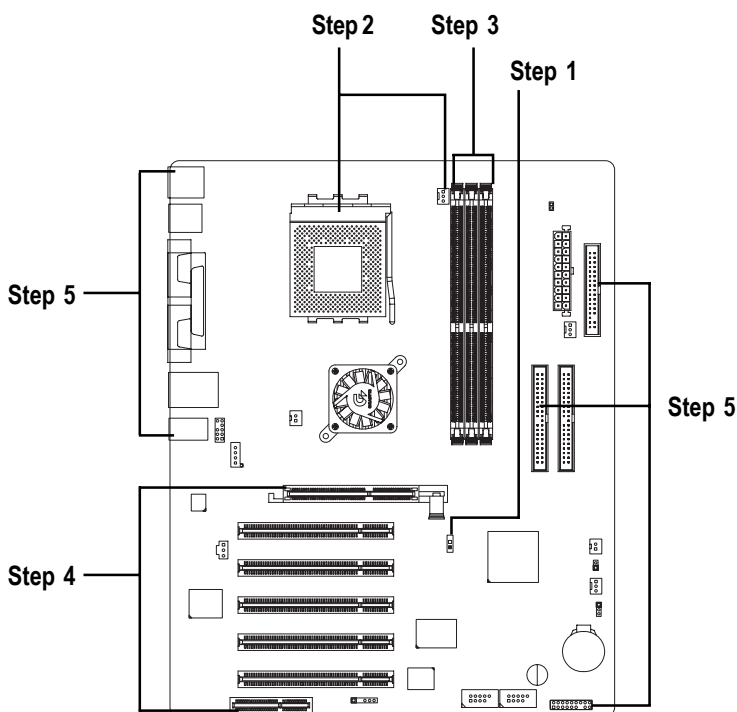
GA-7VAXFS Motherboard Layout



Chapter 2 Hardware Installation Process

To set up your computer, you must complete the following steps:

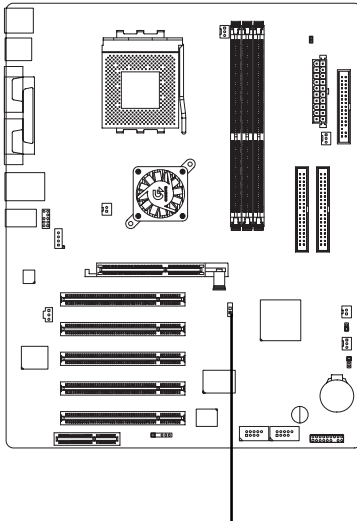
- Step 1 - Set system CPU clock (SW1)
- Step 2 - Install the Central Processing Unit (CPU)
- Step 3 - Install memory modules
- Step 4 - Install expansion cards
- Step 5 - Connect ribbon cables, cabinet wires and power supply
- Step 6 - Setup BIOS software
- Step 7 - Install supporting software tools



Step 1: Install the Central Processing Unit (CPU)

Step 1-1: CPU Speed Setup

The system bus frequency can be switched at 100/133/166 MHz.



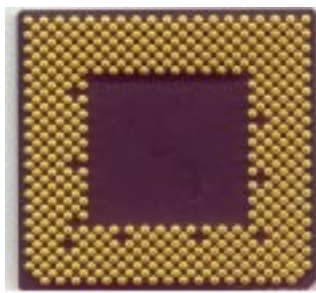
SW1
(CPU CLOCK)

	CPU CLOCK		
	100MHz	133 MHz	166 MHz
1	ON	OFF	OFF
2	OFF	OFF	ON

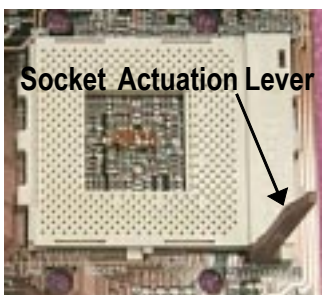
Step 1-2: CPU Installation



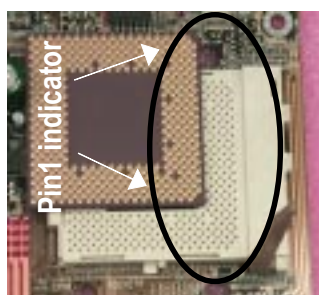
CPU Top View



CPU Bottom View



1. Pull up the CPU socket lever and up to 90-degree angle.



2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- ⚡ Please make sure the CPU type is supported by the motherboard.
- ⚡ If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.

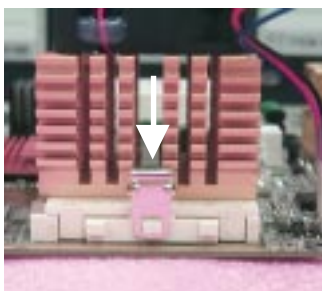
Step 1-3: CPU Heat Sink Installation



1. Press down the CPU socket lever and finish CPU installation.



2. Use qualified fan approved by AMD.



3. Fasten the heatsink supporting-base onto the CPU socket on the main-board.



4. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

- * Please use AMD approved cooling fan.
- * We recommend you to apply the thermal paste to provide better heat conduction between your CPU and heatsink.
- * Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.
- * Please refer to CPU heat sink user's manual for more detail installation procedure.

Step 2: Install memory modules

The motherboard has 3 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

Support Unbuffered DDR DIMM Sizes type:

64 Mbit (2Mx8x4 banks)	64 Mbit (1Mx16x4 banks)	128 Mbit (4Mx8x4 banks)
128 Mbit (2Mx16x4 banks)	256 Mbit (8Mx8x4 banks)	256 Mbit (4Mx16x4 banks)
512 Mbit (16Mx8x4 banks)	512 Mbit (8Mx16x4 banks)	



DDR



1. The DIMM socket has a notch, so the DIMM memory module can only fit in one direction.
 2. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.
 3. Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
- * Reverse the installation steps when you wish to remove the DIMM module.

- * When RAM_LED is ON, you do not install / remove DDR from socket.
- * Please note that the DIMM module can only fit in one direction due to the two notches. Wrong orientation will cause improper installation. Please change the insert orientation.

When using double sided DDR266 modules, only a maximum of 2 sockets can be populated. The 3rd socket has to be free.

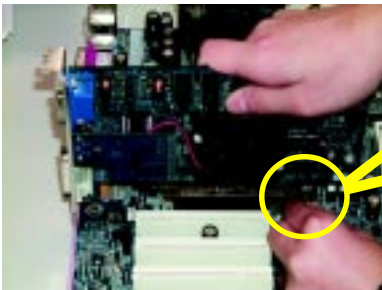
DDR Introduction

Established on the existing SDRAM industry infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs and system integrators.

DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.1GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, necessary screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

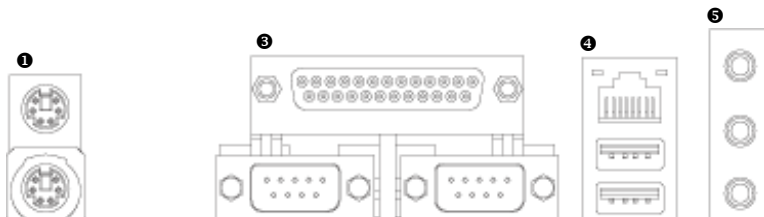


AGP Card

Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot. Make sure your AGP card is locked by the small white-drawable bar.

Step 4: Connect ribbon cables, cabinet wires and power supply

Step 4-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

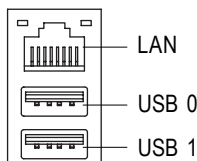


PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

- This connector supports standard PS/2 keyboard and PS/2 mouse.

❷ USB / LAN Connector



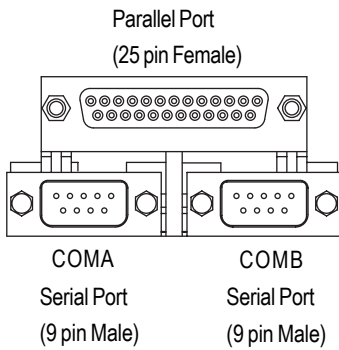
LAN

USB 0

USB 1

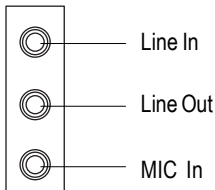
- Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

③ Parallel Port, Serial Port (LPT / COM A / COM B)



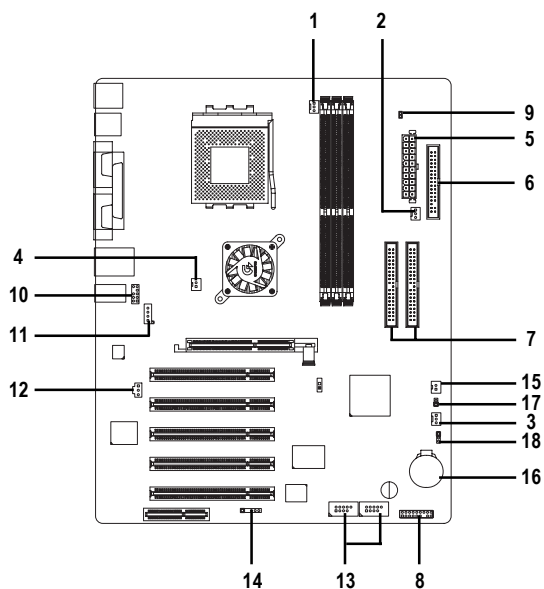
- This connector supports 2 standard COM port, 1 Parallel port. Device like printer can be connected to Parallel port; mouse and modem etc. can be connected to Serial ports.

⑤ Audio Connectors



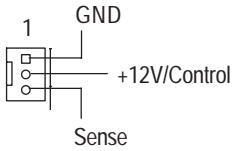
- After install onboard audio driver, you may connect speaker to Line Out jack, microphone to MIC In jack. Device like CD-ROM, walkman etc. can be connected to Line-In jack.

Step 4-2 : Connectors Introduction



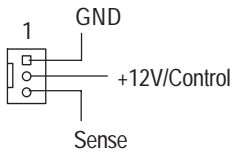
1) CPU_FAN	10) F_AUDIO
2) PWR_FAN	11) CD_IN
3) SYS_FAN	12) SPDIF
4) NB_FAN	13) F_USB1 / F_USB2
5) ATX	14) IR
6) FDD	15) S_IRQ
7) IDE1 / IDE2	16) BATTERY
8) F_PANEL	17) CI
9) RAM_LED	18) CLR_CMOS

1) CPU_FAN (CPU Fan Connector)



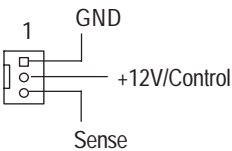
- Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.

2) PWR_FAN (Power Fan Connector)



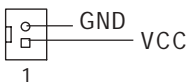
- This connector allows you to link with the cooling fan on the system case to lower the power temperature.

3) SYS_FAN (System Fan Connector)



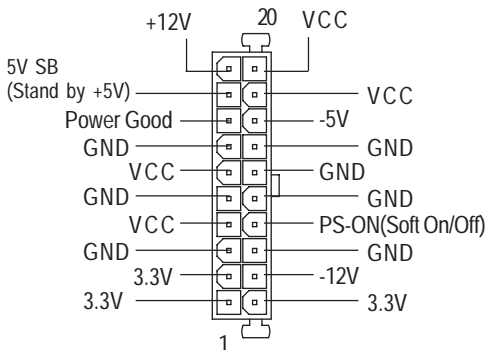
- This connector allows you to link with the cooling fan on the system case to lower the system temperature.

4) NB_FAN (Chip Fan Connector)



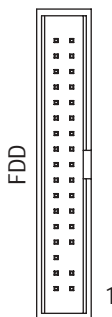
- If you installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan. (Usually black cable is GND)

5) ATX (ATX Power)



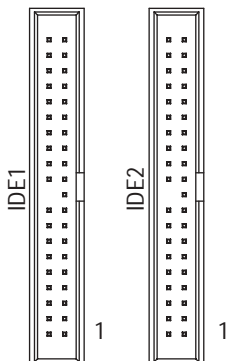
- AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the motherboard.

6) FDD (Floppy Connector)



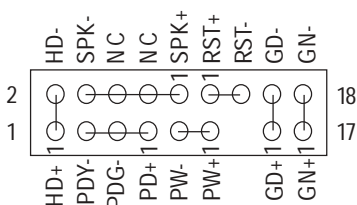
- Please connect the floppy drive ribbon cables to FDD. It supports 360K, 1.2M, 720K, 1.44M and 2.88M bytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.

7) IDE1 / IDE2 (IDE1 / IDE2 Connector)



- Important Notice:
Please connect first hard disk to IDE1 and connect CD-ROM to IDE2. The red stripe of the ribbon cable must be the same side with the Pin1.

8) F_PANEL (2x10 pins connector)



GN (Green Switch)	Open: Normal Operation Close: Entering Green Mode
GD (Green LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RST (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off
PD+ / PDG- / PDY- (Power LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-) Pin 3: LED cathode(-)

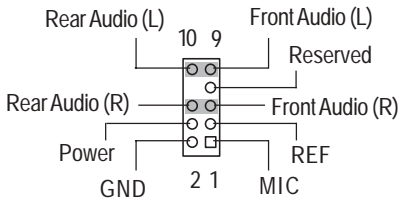
- Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F_PANEL connector according to the pin assignment above.

9) RAM_LED



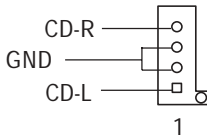
- Do not remove memory modules while DIMM LED is on. It might cause short or other unexpected damages due to the 2.5V stand by voltage. Remove memory modules only when AC Power cord is disconnected.

10) F_AUDIO (Front Audio Connector)



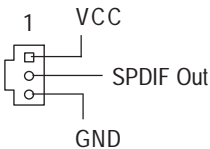
- If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

11) CD_IN (CD In Connector)



- Connect CD-ROM or DVD-ROM audio out to the connector.

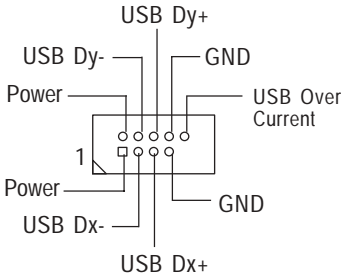
12) SPDIF (SPDIF)



- The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. 6 Channel output : A "S/PDIF output" connector is available on the motherboard. Please contact your nearest dealer for optional SPDIF cable.

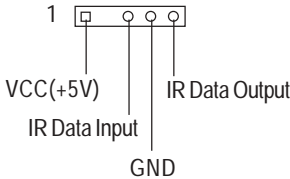
13) F_USB1 / F_USB2 (Front USB Connector)

(F_USB1 & F_USB2 connectors in yellow are for USB 2.0)



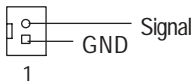
- Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

14) IR (IR)



- Please note, Be careful with the polarity of the IR connector while you connect the IR. Please contact your nearest dealer for optional IR device.

15) S_IRQ (Serial IRQ Connector)



- This connector is for special design, for example: PCMCIA add on card.

16) BATTERY (Battery)



CAUTION

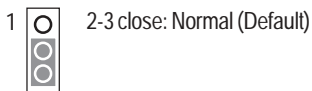
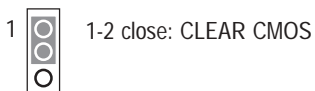
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

17) CI (CASE OPEN)



- This 2 pin connector allows your system to enable or disable the system alarm if the system case begin remove.

18) CLR_CMOS (Clear CMOS)#



- You may clear the CMOS data to its default values by this jumper.

"#" Default doesn't include the "Shunter" to prevent from improper use this jumper. To Clear CMOS, temporarily short 1-2 pin.

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Powering ON the computer and pressing immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select Item
<ESC>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash function
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu (For example: BIOS Ver. :E8)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ FnP/PCI Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
▶ Frequency/Voltage Control	
Esc:Quit	↑↓→← :Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu

- **Standard CMOS Features**

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

- **Advanced BIOS Features**

This setup page includes all the items of Award special enhanced features.

- **Integrated Peripherals**
This setup page includes all onboard peripherals.
- **Power Management Setup**
This setup page includes all the items of Green function features.
- **PnP/PCI Configurations**
This setup page includes all the configurations of PCI & PnP ISA resources.
- **PC Health Status**
This setup page is the System auto detect Temperature, voltage, fan, speed.
- **Frequency/Voltage Control**
This setup page is control CPU's clock and frequency ratio.
- **Load Fail-Safe Defaults**
Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.
- **Load Optimized Defaults**
Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.
- **Set Supervisor password**
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **Set User password**
Change, set, or disable password. It allows you to limit access to the system.
- **Save & Exit Setup**
Save CMOS value settings to CMOS and exit setup.
- **Exit Without Saving**
Abandon all CMOS value changes and exit setup.

Standard CMOS Features

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

Standard CMOS Features

Date (mm:dd:yy)	Wed, Jul 17 2002	Item Help
Time (hh:mm:ss)	14:25:23	Menu Level ►
► IDE Primary Master	[None]	Change the day, month, year
► IDE Primary Slave	[None]	<Week>
► IDE Secondary Master	[None]	Sun. to Sat.
► IDE Secondary Slave	[None]	<Month>
Drive A	[1.44M, 3.5"]	Jan. to Dec.
Drive B	[None]	<Day>
Floppy 3 Mode Support	[Disabled]	1 to 31 (or maximum allowed in the month)
Halt On	[No Errors]	<Year>
Base Memory	64K	1999 to 2098
Extended Memory	130048K	
Total Memory	131072K	
↑↓←→: Move Enter:Select +/-/Enter:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 2: Standard CMOS Features

☞ Date

The date format is <week>, <month>, <day>, <year>.

- Week The week, from Sun to Sat, determined by the BIOS and is display only
- Month The month, Jan. Through Dec.
- Day The day, from 1 to 31 (or the maximum allowed in the month)
- Year The year, from 1999 through 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

» Cylinder	Number of cylinders
» Head	Number of heads
» Precomp	Write precomp
» Landing Zone	Landing zone
» Sector	Number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

☞ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

» None	No floppy drive installed
» 360K, 5.25"	5.25 inch PC-type standard drive; 360K byte capacity.
» 1.2M, 5.25"	5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
» 720K, 3.5"	3.5 inch double-sided drive; 720K byte capacity
» 1.44M, 3.5"	3.5 inch double-sided drive; 1.44M byte capacity.
» 2.88M, 3.5"	3.5 inch double-sided drive; 2.88M byte capacity.

☞ Floppy 3 Mode Support (for Japan Area)

- ▶ Disabled Normal Floppy Drive. (Default value)
- ▶ Drive A Drive A is 3 mode Floppy Drive.
- ▶ Drive B Drive B is 3 mode Floppy Drive.
- ▶ Both Drive A & B are 3 mode Floppy Drives.

☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

- ▶ All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
- ▶ NO Errors The system boot will not stop for any error that may be detected and you will be prompted. (Default value)
- ▶ All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors.
- ▶ All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.
- ▶ All, But Disk/Key The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is 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.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

-- Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

First Boot Device	[CDROM]	Item Help
Second Boot Device	[Floppy]	Menu Level ►
Third Boot Device	[HDD-0]	Select Boot Device
Boot Up Floppy Seek	[Disabled]	priority
Full Screen LOGO Show	[Enable]	
		[Floppy]
		Boot from floppy
		[LSL20]
		Boot from LSL20
		[HDD-0]
		Boot from First HDD
		[HDD-1]
		Boot from second HDD
↑↓→← : Move Enter:Select +/-/Enter=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 3: Advanced BIOS Features

First / Second / Third Boot Device

This feature allows you to select the boot device priority.

- ▶ Floppy Select your boot device priority by Floppy.
- ▶ LSL20 Select your boot device priority by LSL20.
- ▶ HDD-0-3 Select your boot device priority by HDD-0-3.
- ▶ SCSI Select your boot device priority by SCSI.
- ▶ CDROM Select your boot device priority by CDROM.
- ▶ ZIP Select your boot device priority by ZIP.
- ▶ USB-FDD Select your boot device priority by USB-FDD.
- ▶ USB-ZIP Select your boot device priority by USB-ZIP.

- ▶▶ USB-CDROM Select your boot device priority by USB-CDROM.
- ▶▶ USB-HDD Select your boot device priority by USB-HDD.
- ▶▶ LAN Select your boot device priority by LAN.
- ▶▶ Disabled Select your boot device priority by Disabled.

☞ **Boot Up Floppy Seek**

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks 720K, 1.2M and 1.44M are all 80 tracks.

- ▶▶ Disabled BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K. (Default value)
- ▶▶ Enabled BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.

☞ **Full Screen LOGO Show**

This feature allows you to show the company logo on the bootup screen.

- ▶▶ Disabled Shows the POST messages at boot.
- ▶▶ Enabled Shows the still image(LOGO) on the full screen at boot. (Default value)

Integrated Peripherals

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Integrated Peripherals

OnChip IDE Channel0	[Enabled]	Item Help
OnChip IDE Channel1	[Enabled]	Menu Level ►
IDE1 Conductor Cable	[Auto]	If a hard disk
IDE2 Conductor Cable	[Auto]	controller card is
AC97 Audio	[Auto]	used, set at Disabled
MC97 Modem	[Auto]	
Init Display First	[AGP]	[Enabled]
USB 1.1 Controller	[Enabled]	Enable onboard IDE
USB 2.0 Controller	[Enabled]	channel.
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	[Disabled]
Onboard H/W LAN	[Enabled]	Disable onboard IDE
Onboard Serial Port 1	[3F8/IRQ4]	channel.
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[EPP]	
↑↓→←: Move Enter:Select +/-/Enter=Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 5: Integrated Peripherals

☞ OnChip IDE Channel0

- ▶▶ Disabled Disable IDE1 function.
- ▶▶ Enabled Enable IDE1 function. (Default Value)

☞ OnChip IDE Channel1

- ▶▶ Disabled Disable IDE2 function.
- ▶▶ Enabled Enable IDE2 function. (Default Value)

☞ IDE1 Conductor Cable

- ▶▶ Auto Will be automatically detected by BIOS. (Default Value)
- ▶▶ ATA66/100/133 Set IDE1 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
- ▶▶ ATA33 Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ IDE2 Conductor Cable

- ▶▶ Auto Will be automatically detected by BIOS. (Default Value)
- ▶▶ ATA66/100/133 Set IDE2 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
- ▶▶ ATA33 Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ AC97 Audio

- ▶▶ Auto Will be automatically detected
- ▶▶ Disabled Disable this function

☞ AC97 Audio

- ▶▶ Auto Will be automatically detected
- ▶▶ Disabled Disable this function

☞ Init Display First

Select the first initiation of the monitor display from AGP or PCI VGA card.

- ▶▶ PCI Slot Set Init Display First to PCI.
- ▶▶ AGP Set Init Display First to AGP. (Default value)

☞ USB 1.1 Controller

- ▶▶ Enabled Enable USB 1.1 Host Controller function. (Default value)
- ▶▶ Disabled Disable this function if you are not using USB devices.

☞ USB 2.0 Controller

- ▶▶ Enabled Enable USB 2.0 Host Controller function. (Default value)
- ▶▶ Disabled Disable this function if you are not using high speed USB devices.

☞ USB Keyboard Support

When USB Keyboard is installed please set at Enabled.

- ▶▶ Disabled Disable USB keyboard support. (Default value)
- ▶▶ Enabled Enable USB keyboard support.

☞ USB Mouse Support

When USB Mouse is installed please set at Enabled.

- ▶▶ Disabled Disable USB mouse support. (Default value)
- ▶▶ Enabled Enable USB mouse support.

☞ Onboard H/W LAN

Disable this option if you don't want to use onboard LAN function.

- ▶▶ Enabled Enable Onboard Lan Chip function. (Default Value)
- ▶▶ Disabled Disable this function.

☞ Init Display First

Select the first initiation of the monitor display from AGP or PCI VGA card.

- ▶▶ PCI Set Init Display First to PCI.
- ▶▶ AGP Set Init Display First to AGP. (Default value)

☞ Onboard Serial Port 1

- ▶▶ Disabled Disable onboard Serial port A.
- ▶▶ 3F8/IRQ4 Enable onboard Serial port A and using address 3F8 , IRQ4. (Default Value)
- ▶▶ 2F8/IRQ3 Enable onboard Serial port A and using address 2F8 , IRQ3.
- ▶▶ 3E8/IRQ4 Enable onboard Serial port A and using address 3E8 , IRQ4.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port A and using address 2E8 , IRQ3.

- ▶ Auto BIOS will automatically setup the port A address.

☞ Onboard Serial Port 2

- ▶ Disabled Disable onboard Serial port B. (Default Value)
- ▶ 3F8/IRQ4 Enable onboard Serial port B and using address 3F8 , IRQ4.
- ▶ 2F8/IRQ3 Enable onboard Serial port B and using address 2F8 , IRQ3.
- ▶ 3E8/IRQ4 Enable onboard Serial port B and using address 3E8 , IRQ4.
- ▶ 2E8/IRQ3 Enable onboard Serial port B and using address 2E8 , IRQ3.
- ▶ Auto BIOS will automatically setup the port B address.

☞ UART Mode Select

This item allows you to determine which Infra Red(IR) function of Onboard I/O chip.

- ▶ Normal Set onboard I/O chip UART to Normal Mode. (Default Value)
- ▶ IrDA Set onboard I/O chip UART to IrDA Mode.
- ▶ ASKIR Set onboard I/O chip UART to ASKIR Mode.
- ▶ SCR Set onboard I/O chip UART to SCR Mode.

☞ UR2 Duplex Mode

This item will be available when "UART Mode Select" set at "IrDA" or "ASKIR" mode.

- ▶ Full IR Function Duplex Full.
- ▶ Half IR Function Duplex Half. (Default Value)

☞ OnBoard Parallel Port

This feature allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

- ▶ Disabled Disable onboard Parallel port.
- ▶ 378/IRQ7 Enable onboard LPT port and set address at 378, using IRQ7. (Default Value)
- ▶ 278/IRQ5 Enable onboard LPT port and set address at 278, using IRQ5.
- ▶ 3BC/IRQ7 Enable onboard LPT port and set address at 3BC, using IRQ7.

☞ Parallel Port Mode

This feature allows you to connect with an advanced printer via the port mode it supports.

- ▶ SPP Using LPT port as Standard Parallel Port.
- ▶ EPP Using Parallel port as Enhanced Parallel Port. (Default Value)
- ▶ ECP Using Parallel port as Extended Capabilities Port.
- ▶ ECP+EPP Using Parallel port as ECP & EPP mode.

Power Management Setup

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Power Management Setup

ACPI Suspend Type	[S3(SIR)]	Item Help
USB Device Wake-Up From S3	[Disabled]	Menu Level ►
Soft-Off by PWRBIN	[Instant-Off]	
AC BACK Function	[Memory]	[S1]
Keyboard Power On	[Disabled]	Set suspend type to
Mouse Power On	[Disabled]	Power On Suspend under
PMEvent Wake Up	[Enabled]	ACPI OS
ModemRingOn/WakeOnLan	[Enabled]	
Resume by Alarm	[Disabled]	[S3]
x Day (of Month) Alarm	Everyday	Set suspend type to
x Time (hh:mm:ss) Alarm	0 : 0 : 0	Suspend to RAM under
		ACPI OS
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 6: Power Management Setup

ACPI Suspend Type

- ▶▶ S1(POS) Set suspend type to Power On Suspend under ACPI OS.
- ▶▶ S3(SIR) Set suspend type to Suspend To RAM under ACPI OS. (Default Value)

USB Device Wake-Up From S3

- ▶▶ Disabled Disable USB Device Wakeup From S3.
- ▶▶ Enabled Enable USB Device Wakeup From S3. (Default Value)

☞ **Soft-Off by PWRBTN**

- ▶ Delay 4 Sec User can press Power button to power off system instantly. (Default Value)
- ▶ Instant-Off User can press Power button for 4 seconds to power off system. System will enter suspend mode if button is pressed less than 4 seconds.

☞ **ACBACK Function**

- ▶ Memory When AC-power back to the system, the system will return to the Last state before AC-power off (Default Value)
- ▶ Full-On When AC-power back to the system, the system will be in "On" state.
- ▶ Soft-Off When AC-power back to the system, the system will be in "Off" state.

☞ **Keyboard Power On**

- ▶ Disabled Disable keyboard power on function. (Default Value)
- ▶ Password Enter password (from 1 to 8 characters) to set the Keyboard power on password.
- ▶ Keyboard 98 If there is a "Power" key on your keyboard, you can press the key to power on your system.

☞ **Mouse Power On**

- ▶ Disabled Disable mouse power on function. (Default Value)
- ▶ Enabled Enable move or click PS2 Mouse to Power On system.

☞ **PME Event Wake Up**

When set at Enabled, any PCI-PM event wakes the system from a PCI-PM controlled state.

- ▶ Disabled Disable this function.
- ▶ Enabled Enable PME as Wake up Event. (Default Value)

☞ **ModemRingOn/WakeOnLAN**

An incoming call via modem wakes the system from its soft-off mode./When set at Enabled, an input signal comes from the other client/server on the LAN awakes the system from a soft off state if connected over LAN.

- ▶ Disabled Disable Modem Ring on/Wake on Lan function.
- ▶ Enabled Enable Modem Ring on/Wake on Lan. (Default Value)

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Data/time to power on system.

- ▶▶ Disabled Disable this function. (Default Value)
- ▶▶ Enabled Enable alarm function to POWER ON system.

If Resume by Alarm set at Enabled:

Day (of Month) Alarm : Everyday, or 1-31

Time (hh: mm: ss) Alarm : (0-23) : (0-59) : (0-59)

PnP/PCI Configurations

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PnP/PCI Configurations

PNP ON Installed	[Yes]	Item Help
PCI1/PCI5 IRQ Assignment	[Auto]	Menu Level ▶
PCI2 IRQ Assignment	[Auto]	
PCI3 IRQ Assignment	[Auto]	
PCI4 IRQ Assignment	[Auto]	
		Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices.
↑↓→← : Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 7: PnP/PCI Configurations

☞ PNP ON Installed

- ▶▶ No Set BIOS to configure non-boot devices.
- ▶▶ Yes Set at Yes, If you are using Plug and Play capable operating system. (Default value)

☞ PCI1/PCI5 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI1. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI4.

☞ PCI2 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI1. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI4.

☞ **PCI3 IRQ Assignment**

- ▶▶ Auto Auto assign IRQ to PCI2. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI1/5.

☞ **PCI4 IRQ Assignment**

- ▶▶ Auto Auto assign IRQ to PCI3. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI2/6.

PC Health Status

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PNP/PCI Configurations

Reset Case Open Status	[Disabled]	Item Help
Case Opened	No	Menu Level ▶
VCORE	1.778V	
Vt	1.232V	[Disabled]
+3.3V	3.2V	Don't reset case
+5V	4.945V	open status
+12V	12.288V	
5VSB	4.999V	
Current System Temperature	36°C	[Enabled]
Current CPU FAN Speed	6490 RPM	Clear case open
Current SYSTEM FAN Speed	0 RPM	status at next boot
Current POWER FAN Speed	0 RPM	
Current CPU Temperature	59°C / 1384°F	
↑↓←→: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 8: PC Health Status

Reset Case Open Status

Case Opened

If the case is closed, "Case Opened" will show "No".

If the case have been opened, "Case Opened" will show "Yes".

If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.

Current Voltage (V) VCORE / Vt / +3.3V / +5V / +12V / 5VSB

▶▶ Detect system' s voltage status automatically.

☞ **Current System Temperature**

▶▶ Detect System temperature automatically.

☞ **Current CPU FAN / System FAN Speed (RPM)**

▶▶ Detect Fan speed status automatically.

☞ **Current CPU Temperature**

▶▶ Detect CPU temperature automatically.

Frequency/Voltage Control

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Frequency/Voltage Control		Item Help
DRAM Clock (MHz)	[By SPD]	Menu Level ►
↑↓→←: Move Enter:Select +/-/Enter/End:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 9: Frequency/Voltage Control

☞ DRAM Clock (MHz)

This feature allows you to adjust the DRAM frequency, please set DRAM Clock according to your requirement. Incorrect using it may cause your system broken. For power End-User use only!

- ▶▶ By SPD Set DRAM Clock by SPD. (Default Value)
- ▶▶ 133-DDR266 Set DRAM Clock at 133MHz, if you are using DDR266 DRAM module.
- ▶▶ 166-DDR333 Set DRAM Clock at 166MHz, if you are using DDR333 DRAM module.
- ▶▶ 200-DDR400 Set DRAM Clock at 200MHz, if you are using DDR400 DRAM module.

Load Fail-Safe Defaults

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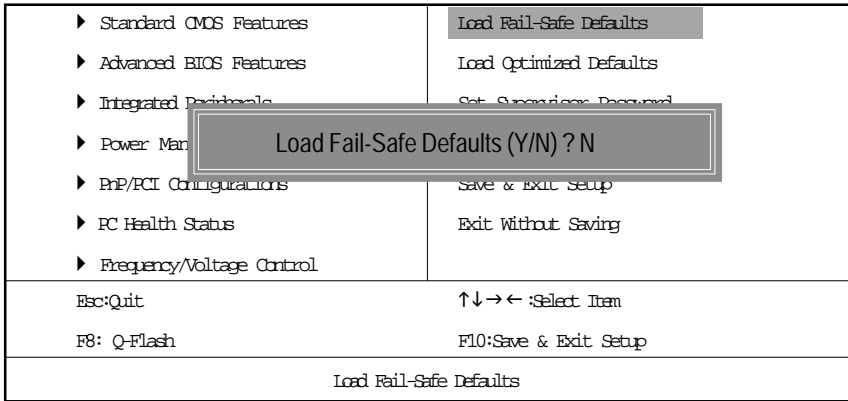


Figure 10: Load Fail-Safe Defaults

Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Optimized Defaults

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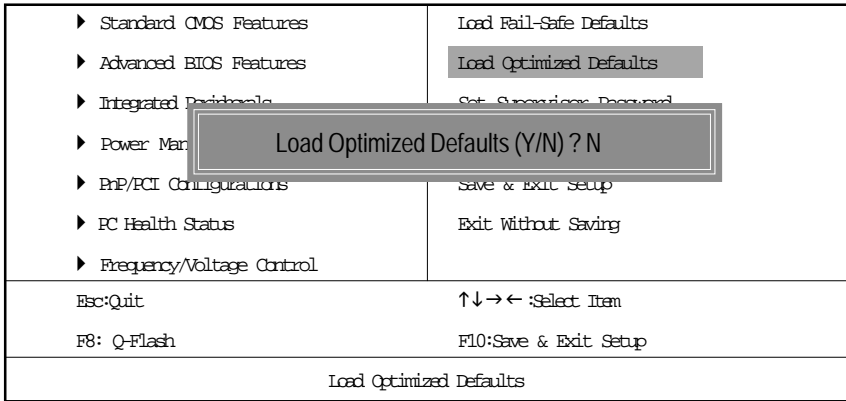


Figure 11: Load Optimized Defaults

Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Set Supervisor/User Password

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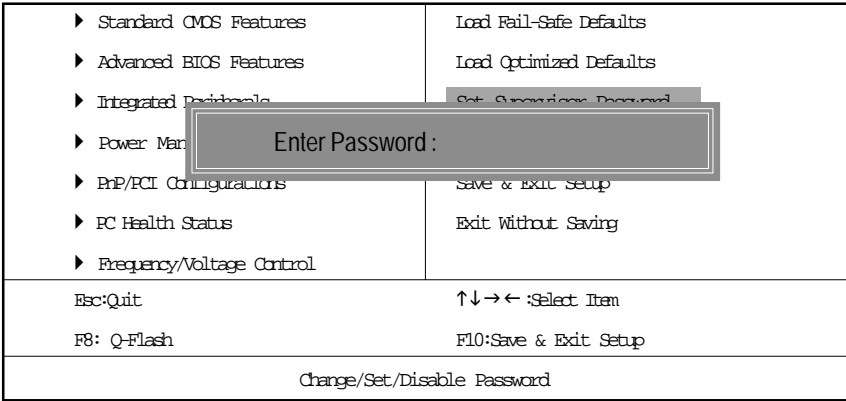


Figure 12: Password Setting

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

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

Exit Without Saving

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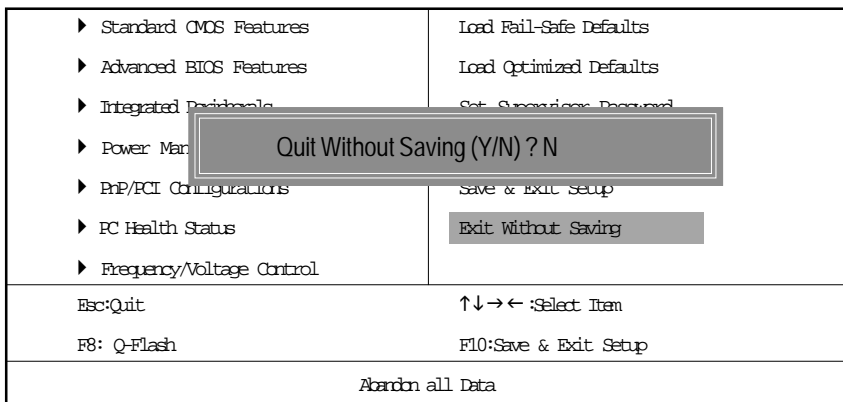


Figure 14: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

Appendix:

Using 4- or 6-Channel Audio (optional)


The motherboard is equipped with Realtek ALC650 chip, which provides support for 6-channel audio output, including 2 Front, 2 Rear, 1 Center and 1 Subwoofer channel. ALC650 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.

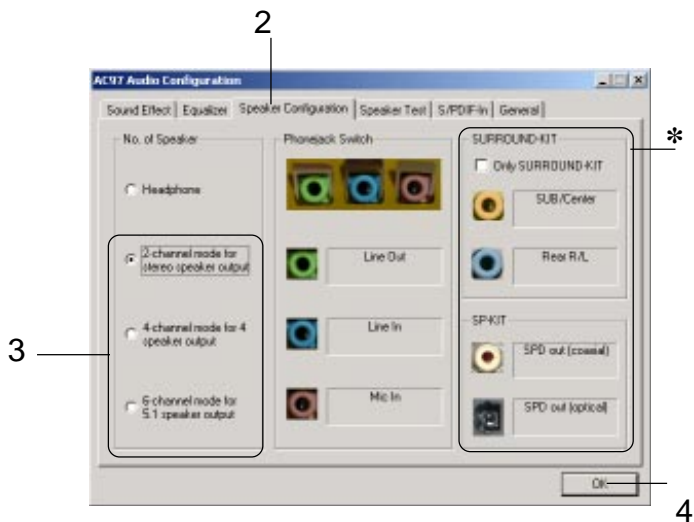
Using the Back Panel

In addition to a default 2-channel analog audio output function, the audio connectors on the Back Panel also provide 4- or 6-channel analog audio output function if a proper setting is made in the software utility.

Read the following steps to have the Multi-Channel Audio Function properly set in the software utility, and have your speakers correctly connected to the Back Panel.

Configuration in the Software Utility

1. Click the audio icon  from the window tray at the lower-right corner of the screen.
2. Click the **Speaker Configuration** tab.
3. Select a desired multi-channel operation from **No. of Speakers**.
 - a. 2-Channel Mode for Stereo-Speaker Output
 - b. 4-Channel Mode for 4-Speaker Output
 - c. 6-Channels Mode for 5.1-Speaker Output
4. Click **OK** to close this window.



* not supported

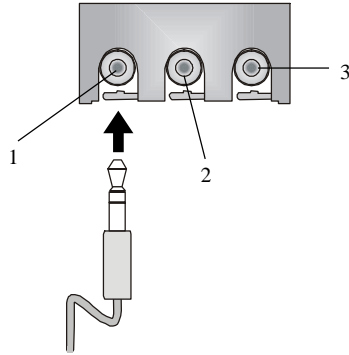
Connecting the Speakers

When you have set the Multi-Channel Audio Function mode properly in the software utility, connect your speakers to the correct phonejacks in accordance with the setting in software utility.

■ 2-Channel Mode for Stereo-Speaker Output

Refer to the following diagram and caption for the function of each phonejack on the back panel when 2-Channel Mode is selected.

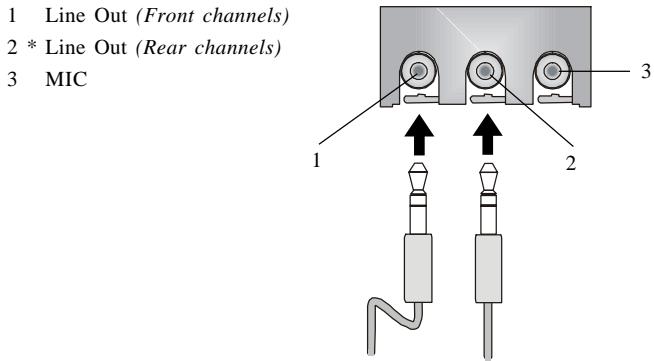
- 1 Line Out (*Front channels*)
- 2 Line In
- 3 MIC



■ 4-Channel Mode for 4-Speaker Output

The audio jacks on the back panel always provide 2-channel analog audio output function, however these audio jacks can be transformed to 4- or 6- channel analog audio jacks by selecting the corresponding multi-channel operation from **No. of Speakers**.

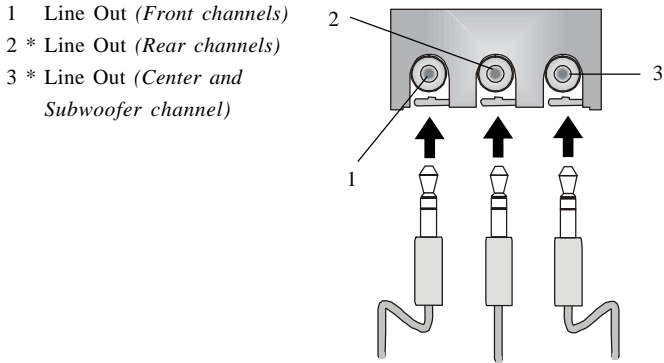
Refer to the following diagram and caption for the function of each jack on the back panel when 4-Channel Mode is selected.



* Line In function is converted to Line Out function when 4-Channel Mode for 4-Speaker Output is selected.

■ 6-Channel Mode for 6-Speaker Output

Refer to the following diagram and caption for the function of each jack on the back panel when 6-Channel Mode is selected.




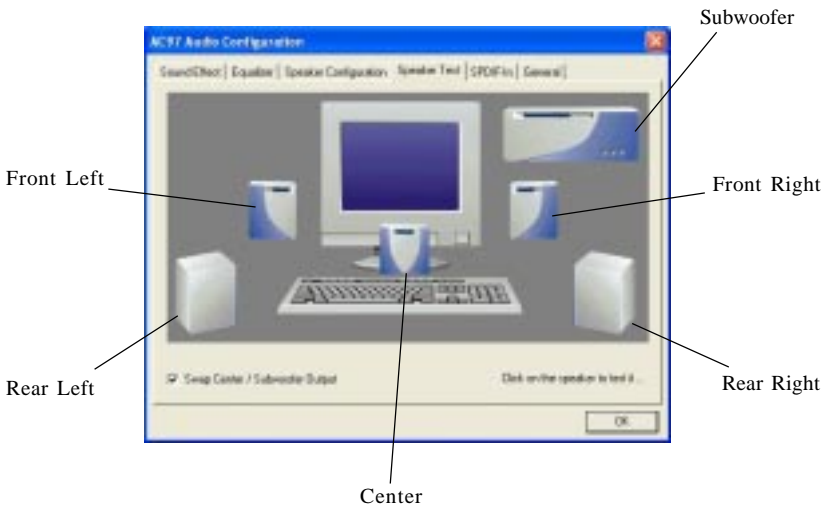
* Both Line In and MIC function are converted to Line Out function when 4-Channel Mode for 6-Speaker Output is selected.

Testing the Connected Speakers

To ensure that 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

1. Click the audio icon  from the window tray at the lower-right corner of the screen.
2. Click the **Speaker Test** tab.
3. The following window appears. Select the speaker which you want to test by clicking it.



Note:

6 speakers appear on the “Speaker Test” window only when you select “6-Channel Mode” in the “No. of Speakers” column. If you select “4-Channel Mode”, only 4 speakers appear on the window.

4. While you are testing the speakers in 6-Channel Mode, if the sound coming from the center speaker and subwoofer is swapped, you should select **Swap Center/Subwoofer Output** to readjust these two channels.



Select this function