

GA-8IRX  
P4 Titan DDR Motherboard

# **USER'S MANUAL**

Pentium®4 Processor Motherboard  
Rev. 2.0 First Edition  
12M D-8IRX-2001

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## Item Checklist

- ✍ The GA-8IRX motherboard
- ✍ IDE cable x 1/ Floppy cable x 1
- ✍ CD for motherboard driver & utility (IUCD)
- ✍ GA-8IRX user's manual
- ✍ Quick PC Installation Guide
- ✍ USB Cable x 1



### 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 to 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 wire 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"> <li>☞ 30.5cm x 22.8cm ATX size form factor, 4 layers PCB.</li> </ul>
CPU	<ul style="list-style-type: none"> <li>☞ Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor</li> <li>☞ Intel Pentium®4 400MHz FSB</li> <li>☞ 2nd cache depend on CPU</li> </ul>
Chipset	<ul style="list-style-type: none"> <li>☞ Chipset 82845 HOS T/AGP/Controller</li> <li>☞ 82801BA(ICH2) I/O Controller Hub</li> </ul>
Memory	<ul style="list-style-type: none"> <li>☞ 3 184-pin DDR DIMM sockets</li> <li>☞ Supports PC1600 DDR or PC2100 DDR DIMM</li> <li>☞ Supports up to 2GB DRAM (Max)</li> <li>☞ Supports only 2.5V DDR DIMM</li> <li>☞ Supports 64bit ECC type DRAM integrity mode</li> </ul>
I/O Control	<ul style="list-style-type: none"> <li>☞ I78712</li> </ul>
Slots	<ul style="list-style-type: none"> <li>☞ 1 CNR(Communication and Networking Riser) Slot</li> <li>☞ 1 AGP slot 4X (1.5V) device support</li> <li>☞ 6 PCI slot supports 33MHz &amp; PCI 2.2 compliant</li> </ul>
On-Board IDE	<ul style="list-style-type: none"> <li>☞ An IDE controller on the Intel 82801BA PCI chipset provides IDE HDD/CD-ROM with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes.</li> <li>☞ Can connect up to four IDE devices</li> </ul>
On-Board Peripherals	<ul style="list-style-type: none"> <li>☞ 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes.</li> <li>☞ 1 Parallel port supports Normal/EPP/ECP mode</li> <li>☞ 2 Serial ports (COMA&amp;COMB)</li> <li>☞ 4 USB ports (Rear USB x 2, Front USB x 2)</li> <li>☞ 1 SCR connector</li> <li>☞ 1 IrDA connector for IR</li> </ul>
Hardware Monitor	<ul style="list-style-type: none"> <li>☞ CPU/Power/System Fan Revolution detect</li> <li>☞ CPU/Power/System Fan Control</li> <li>☞ CPU Overheat Warning</li> <li>☞ System Voltage Detect</li> </ul>

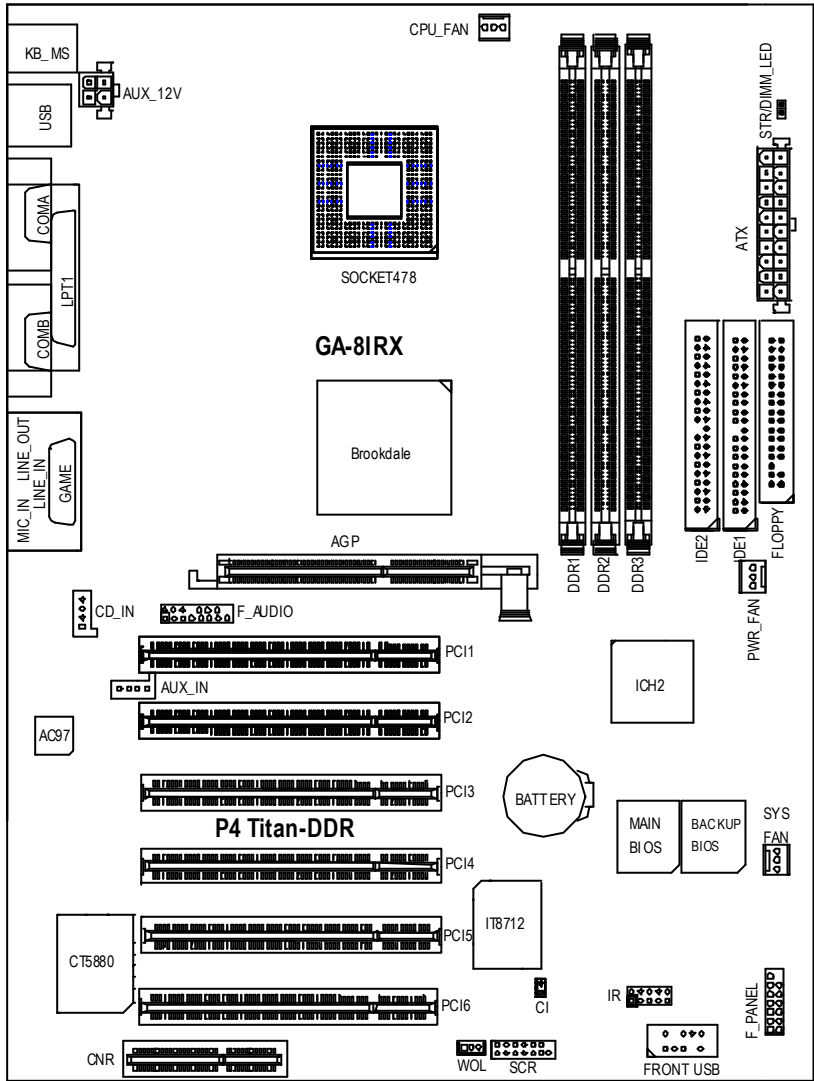
to be continued.....

On-Board Sound	<ul style="list-style-type: none"> <li>☞ Creative CT5880 Sound Chipset + Sigmatel 9708T CODEC</li> <li>☞ Line In/Line Out/Mic In/CD In/AUX_IN/Game Port</li> </ul>
PS/2 Connector	☞ PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	<ul style="list-style-type: none"> <li>☞ Licensed AWARD BIOS, 4M bit x 2 FWH</li> <li>☞ Supports Dual BIOS</li> </ul>
Additional Features	<ul style="list-style-type: none"> <li>☞ PS/2 Keyboard power on by password</li> <li>☞ PS/2 Mouse power on</li> <li>☞ External Modem wake up</li> <li>☞ STR(Suspend-To-RAM)</li> <li>☞ Wake on LAN</li> <li>☞ AC Recovery</li> <li>☞ USB KB/Mouse wake up from S3</li> <li>☞ Supports @BIOS</li> <li>☞ Supports Easy Tunell</li> <li>☞ Supports Multi Language</li> </ul>
Special Features	<ul style="list-style-type: none"> <li>☞ Over Voltage (DDR / AGP)</li> <li>☞ Over Clock (CPU / DDR)</li> </ul>



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....etc.

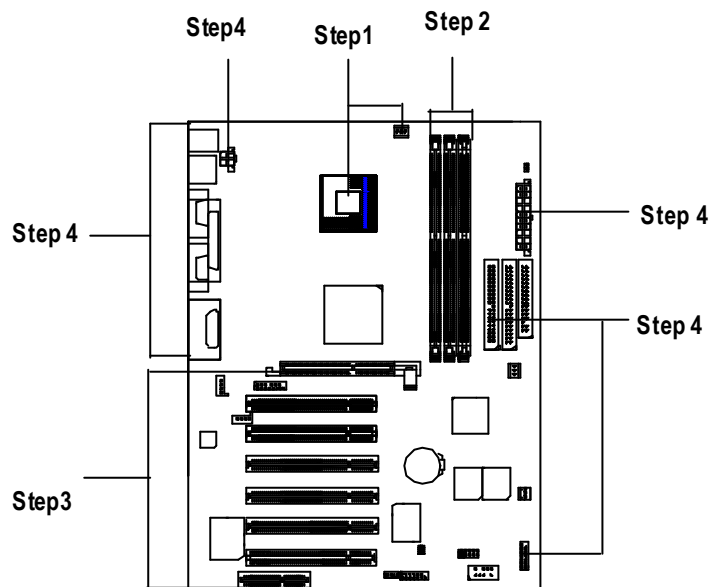
# GA-8IRX Motherboard Layout



## Chapter 2 Hardware Installation Process

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

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

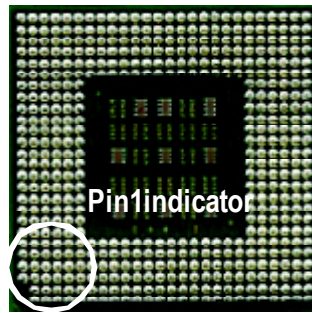


## Step 1: Install the Central Processing Unit (CPU)

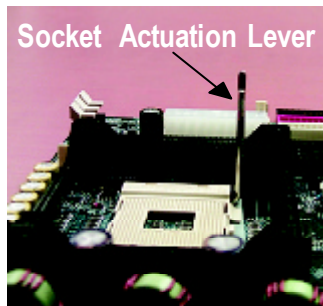
### Step 1-1 CPU Installation



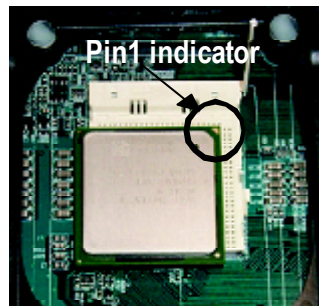
CPU Top View



CPU Bottom View



1. Pull up the CPU socket lever and up to 90-degree angle.
3. Press down the CPU socket lever and finish CPU installation.

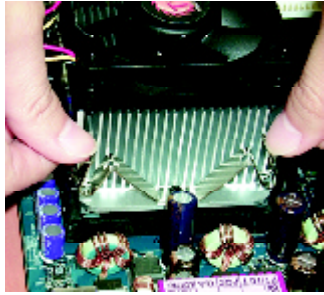


2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

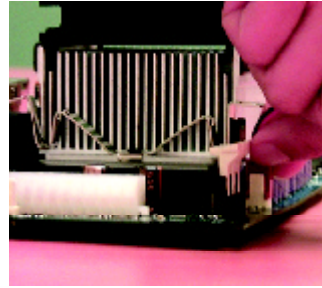
- ✂ Please make sure the CPU type is supported by the motherboard.
- ✂ If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.



## Step 1-2 : CPU Heat Sink Installation



1. Hook one end of the cooler bracket to the CPU socket first.



2. Hook the other end of the cooler bracket to the CPU socket.

- ✎ Please use Intel approved cooling fan.
- ✎ We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink.  
(The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket along with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)
- ✎ 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, but it can only support a maximum of 4 banks of DDR memory. DDR slot 1 uses 2 banks, DDR slot 2&3 share the remaining 2 banks. Please refer to the following tables for possible memory configurations supported. The BIOS will automatically detect memory type and size. To install the memory module, just push it vertically into the DIMM Slot. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

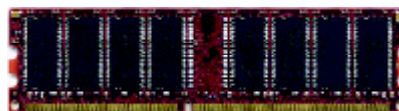
Total Memory Sizes With Unbuffered DDR DIMM

Devices used on DIMM	1 DIMM x 64 / x 72	2 DIMMs x 64 / x 72	3 DIMMs x 64 / x 72
64 Mbit (2Mx 8x 4 banks)	128MBytes	256MBytes	256MBytes
64 Mbit (1Mx 16x 4 banks)	32MBytes	64 MBytes	96MBytes
128 Mbit(4Mx 8x 4 banks)	256MBytes	512MBytes	512MBytes
128 Mbit(2Mx 16x 4 banks)	64 MBytes	128MBytes	196MBytes
256 Mbit(8Mx 8x 4 banks)	512MBytes	1 GBytes	1 GBytes
256 Mbit(4Mx 16x 4 banks)	128MBytes	256MBytes	384MBytes
512 Mbit(16Mx 8x 4 banks)	1 GBytes	2 GBytes	2 GBytes
512 Mbit(8Mx 16x 4 banks)	256MBytes	512MBytes	768MBytes

Notes: Double-sided x 16 DDR memory devices are not support by Intel 845 chipset.

DDR1	DDR2	DDR3
S	S	S
D	S	S
D	D	X
D	X	D
S	D	X
S	X	D

D: Double Sided DIMM S: Single Sided DIMM  
X: Not Use



DDR



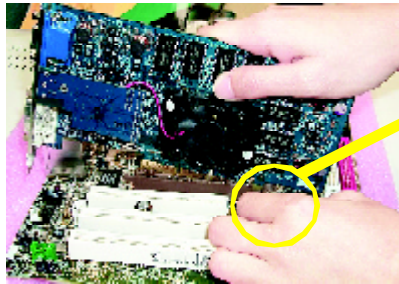
1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.
  2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.
  3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
- Reverse the installation steps when you wish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



- ⚠ When STR/DIMM LED is ON, do not install/remove DIMM 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.

### 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, 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.



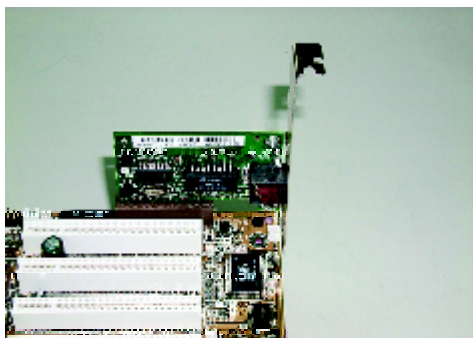
AGP Card



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.

### Issues To Beware Of When Installing CNR

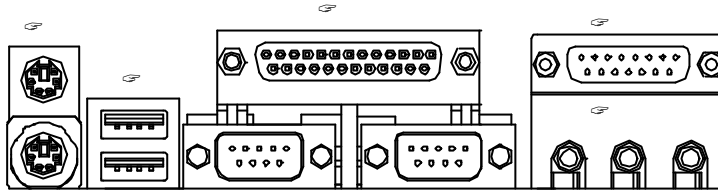
Please use standard CNR card like the one in order to avoid mechanical problem.



Standard CNR Card

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

### Step 4-1 : I/O Back Panel Introduction



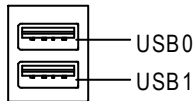
#### PS/2 Keyboard and PS/2 Mouse Connector



PS/2 Mouse Connector  
(6 pin Female)  
PS/2 Keyboard Connector  
(6 pin Female)

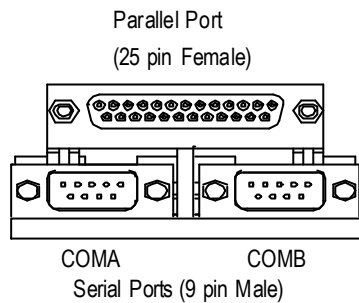
This connector supports standard PS/2 keyboard and PS/2 mouse.

#### USB Connector



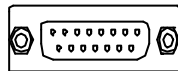
Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS (Win 95 with USB supplement, Win98, Windows 2000, Windows ME, WinNT with SP 6) supports USB controller. 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.

### ☞ Parallel Port and Serial Ports (COMA/COMB)



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

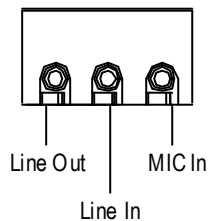
### ☞ Game/MIDI Ports



Joystick/ MIDI (15 pin Female)

☞ This connector supports joystick, MIDI keyboard and other relate audio devices.

### ☞ Audio Connectors



☞ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack. Device like C.D-ROM , walkman etc can be connected to Line-In jack.

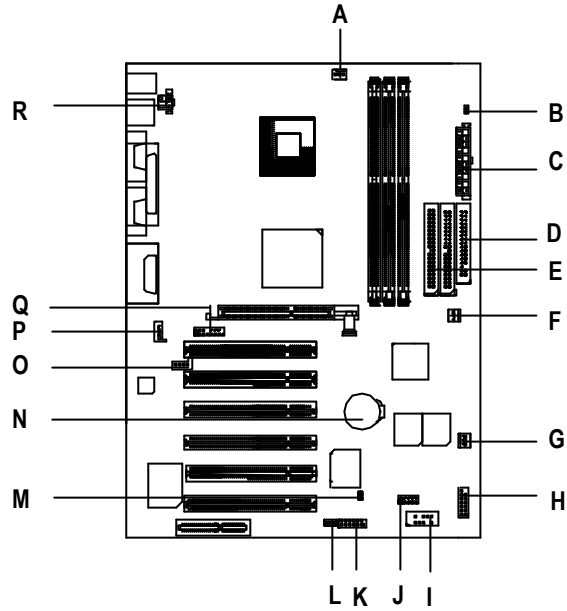
Please note: Line Out 1: Line Out or SPDIF (The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder). To enable SPDIF, simply insert SPDIF connector into Line Out1. Line Out1 will become SPDIF Out automatically.

To enable Four Speaker (for Creative 5880 audio only), and Line In will become Line Out2 to support second pair of stereo speakers.



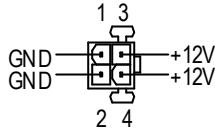
***If you want to realize the "Four Speaker & SPDIF" setup information in detail, please download this manual from Gigabyte web <http://www.gigabyte.com.tw>.***

Step 4-2 :Connectors Introduction

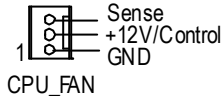


A) CPU_FAN	J) IR/CIR
B) STR/DIMM_LED	K) SCR
C) ATX	L) WOL
D) FLOPPY	M) CI
E) IDE1/IDE2	N) BAT
F) PWR_FAN	O) AUX_IN
G) SYS_FAN	P) CD_IN
H) F_PANEL	Q) F_AUDIO
I) FRONT_USB	R) AUX_12V

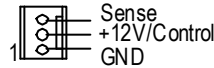
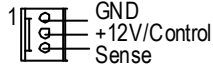
**R) AUX\_12V( +12V Power Connector)** ⚠ This connector (ATX +12V) is used only for CPU Core Voltage.



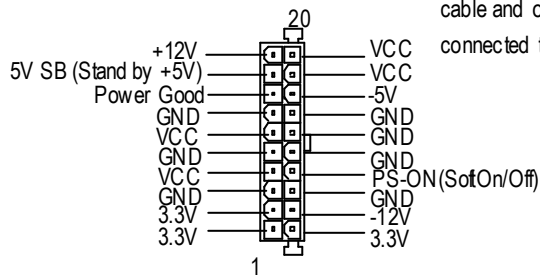
**A) CPU\_FAN (CPU Fan Connector)** ⚠ Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600mA .



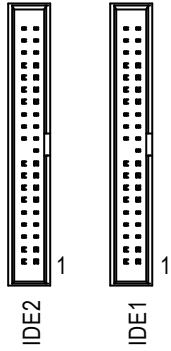
**F) PWR\_FAN (Power Fan Connector)**      **G) SYS\_FAN (System Fan Connector)**



**C) ATX (ATX Power Connector)** ⚠ 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 mainboard.

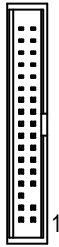


E) IDE1 / IDE2 Connector(Primary/Secondary]

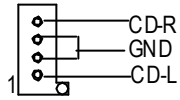


✎ Important Notice:  
Please connect first harddisk to IDE1  
and connect CDROM to IDE2.

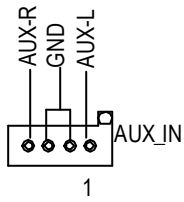
D) FLOPPY (Floppy Connector)



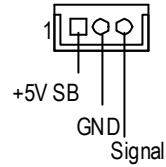
P) CD\_IN (CD Audio Line In Connector)



O) AUX\_IN (AUX In Connector)

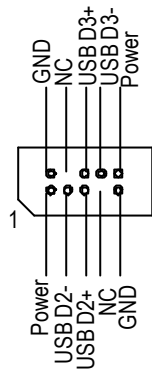


L) WOL(Wake on LAN)



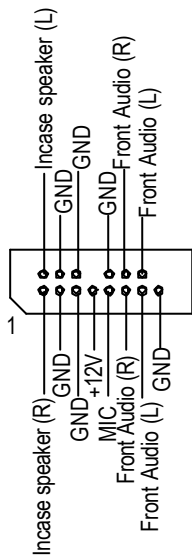


**I) FRONT\_USB (Front USB Connector)**



⚠ 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.

**Q) F\_AUDIO (F\_AUDIO Connector)**



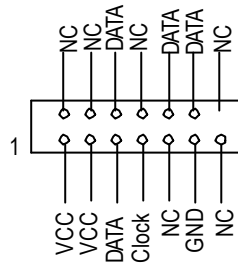
⚠ If you want to use "Front Audio" connector, you must move 11-12,13-14 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

**B) STR/DIMM\_LED**



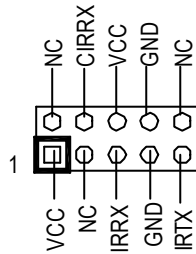
⚠ Do not remove memory modules while DIMM LED is on. It might cause short or other unexpected damages due to the 2.5V stand by voltage. Remove memory modules only when STR function is disabled by jumper and AC Power cord is disconnected.

**K) SCR (Smart Card Reader Header)**



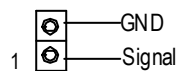
⚠ This MB supports smart card reader. To enable smart card reader function an optional smart card reader box is required. Please contact your authorized distributor.

**J) IR/CIR (IR/CIR)**



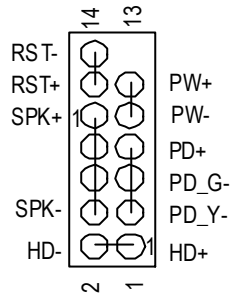
⚠ Make sure the pin 1 on the IR device is align with pin one the connector. To enable the IR/CIR function on the board, you are required to purchase an option IR/CIR module. For detail information please contact your authorized Giga-Byte distributor.  
To use IR function only, please connect IR module to Pin1 to Pin5.

**M) CI (CASE OPEN)**



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

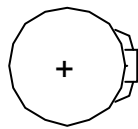
H) F\_PANEL (2x7 pins jumper)



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
PD+/PD_G-/PD_Y-(Power LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-) Pin 3: LED cathode(-)
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off

⚠ 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.

N) BAT (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.

## 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

After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP.

### 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

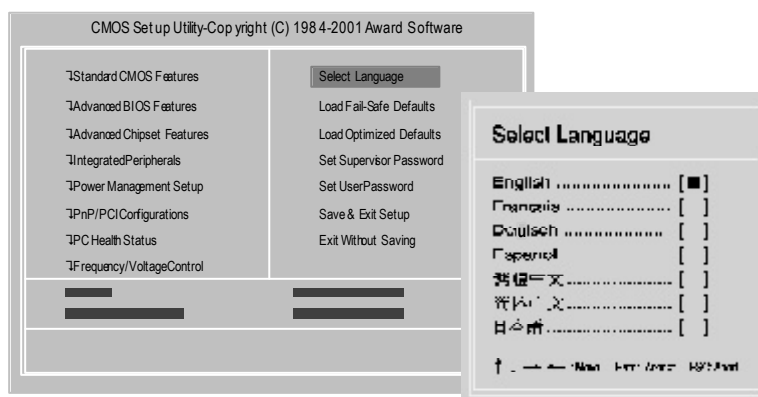
Once you enter Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

### Dual BIOS / Q-Flash Utility

After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP, then press <F8> to enter DualBIOS/Q-Flash utility. **If you want to detail information for "DualBIOS/Q-Flash Utility", please download this manual from Gigabyte web <http://www.gigabyte.com.tw>.**

### Select Language

You can press <F3> to select multi language. There are 7 languages available, including English, Japanese, French, Spanish, Germany, Simplified Chinese, Traditional Chinese.



☞ **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.

☞ **Advanced Chipset Features**

This setup page includes all the items of chipset special features.

*We would not suggest you change the chipset default setting unless you really need it.*

☞ **Integrated Peripherals**

This setup page includes all onboard peripherals.

*We would not suggest you change the default setting unless you really need it.  
For power End-User use only.*

☞ **Power Management Setup**

This setup page includes all the items of Green function features.

*We would not suggest you change the default setting unless you really need it.  
For power End-User use only.*

☞ **PnP/PCI Configurations**

This setup page includes all the configurations of PCI & PnP ISA resources.

*We would not suggest you change the default setting unless you really need it.  
For power End-User use only.*

☞ **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.

*For power End-User use only.*

☞ **Select Language**

This setup page is select multi language.

☞ **Load Fail-Safe Defaults**

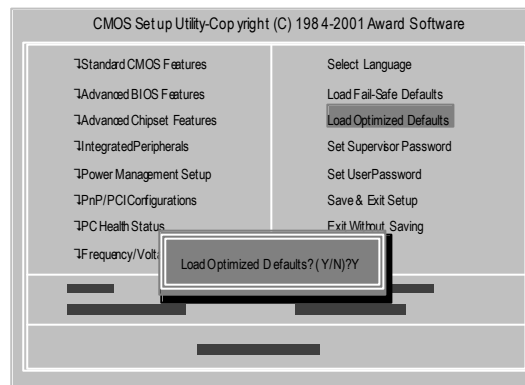
Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

☞ **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.

### Load Optimized Default

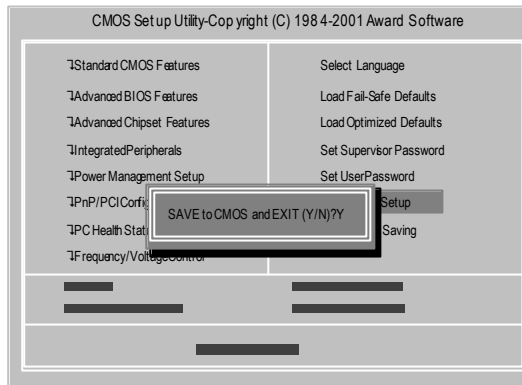


#### ✎ **Load Optimized Defaults**

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

To Load Optimized, move cursor, by pressing the arrow keys on the keyboard, to highlight the optimized default and press enter key then press "Y" if you decide to load this option.

## Save & Exit Setup



☞ To save exit the BIOS setting screen press F10, and press "Y" if you want to save setting. By typing "N" or "ESC" will take you back to setup screen.



***If you want to realize the BIOS setup information in detail, please download this manual from Gigabyte web <http://www.gigabyte.com.tw>.***

## Chapter 4 Driver Installation

Picture below are shown in Windows ME (IUCD driver version 1.9)

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

### A. Installing Intel 845 Chipset Driver

Please install this driver as the first priority. this item installs the chipset driver utility that enables Plug-n-Plug INF support for Intel chipset component.

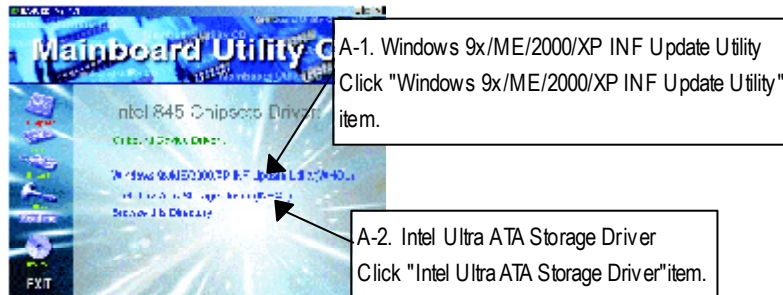
### B. Installing Sound Driver

Click this item to install sound driver.



### A: Intel 845 Chipset Driver Installation

Follow the setup that showing on the screen to install the Utility.



### B: Sound Driver Installation

