- **The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to up date the information contained herein.**
- **Third-party brands and names are the property of their respective owners.**
- **Please do not remove any labels on motherboard, this may void the warranty of this motherboard.**
- **Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.**

WARNING Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

Mise en garde : Ne jamais mettre le processeur en marche sans que le dissipateur de chaleur soit fermement et proprement fixé. UN DOMMAGE PERMANENT EN RÉSULTERA !

Achtung: Der Prozessor darf nie in Betrieb genommen werden, wenn der Kühlkörper nicht richtig gut und sicher angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!

Advertencia: Nunca haga funcionar el procesador sin el disipador de calor instalado correcta y firmemente, ¡si no, PRODUCIRÁ UN DAÑO PERMANENTE!

Aviso: Nunca execute o processador sem o dissipador de calor estar adequada e firmemente [illegible] PERMANENTE!

注意： [illegible]

警告： [illegible]

경고: [illegible]

警告： [illegible]

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible Party Name: **G.B.T. INC. (U.S.A.)**

Address: **17358 Railroad Street**
City of Industry, CA 91748

Phone/Fax No: **(818) 854-9338/ (818) 854-9339**

hereby declares that the product

Product Name: **Motherboard**

Model Number: **GA-8IPXDR**

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a), Class B Digital Device

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 and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: April 20,2002

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Träding GMbH
AusschlagerWeg 41,1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-8IPXDR
is in conformity with
(reference to the specification under which conformityis declared)
in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limitsand methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2*** ☒ **EN 60555-2**	Disturbances in supply systems cause by household applances and similar electrical equipment "Harmonics"
☐ **EN 55013**	Limitsand methods of measurement of radio disturbance characteristics of broadcastreceivers and associated equipment	☐ **EN 61000-3-3*** ☒ **EN 60555-3**	Disturbances in supply systems cause by household applances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limitsand methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools andsimilar electrical apparatus	☒ **EN 50081-1**	Genericemission standard Part 1: Residual commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual commercial and light industry
☐ **EN 55015**	Limitsand methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Genericemission standard Part 2: Industrialenvironment
☐ **EN 55020**	Immunity from radio interference of broadcastreceivers and associated equipment	☐ **EN 55082-2**	Genericemission standard Part 2: Industrialenvironment
☒ **EN 55022**	Limitsand methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunityrequirements forhousehold appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cableddistribution systems; Equipment for receiving and/or distribution from sound and television signals	☐ **EN50091-2**	EMC requirements for uninterruptible powersystems(UPS)
☒ **CEmarking**		(EC conformity marking)	

Themanufacturer also declaes the conformity ofabovementionedproduct withthe actualrequired safety standards in accordance with LVD 73/23EEC

☐ **EN 60065**	Safetyrequirementsfor mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	

Manufacturer/Importer

(Stamp)

Date : April 20, 2002

Signature: Timmy Huang
Name: Timmy Huang

GA-8IPXDR

Processor Motherboard

USER'S MANUAL

Pentium® Xeon Processor Motherboard

Rev. 1102

12ME-8IPXDR-1102

Table of Content

Revision History

Revision	Revision Note	Date
1.0	Initial release of the GA-8IPXDR motherboard user's manual.	Feb. 2002

Item Checklist

- ☑ The GA-8IPXDR motherboard
- ☑ IDE cable x 1/ Floppy cable x 1
- ☑ Driver CD for motherboard driver & utility
- ☑ GA-8IPXDR user's manual
- ☑ I/O Back Panel
- ☑ USB Cable x 1(Optional)
- ☑ SCSI Cable x 1 (Optional)

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

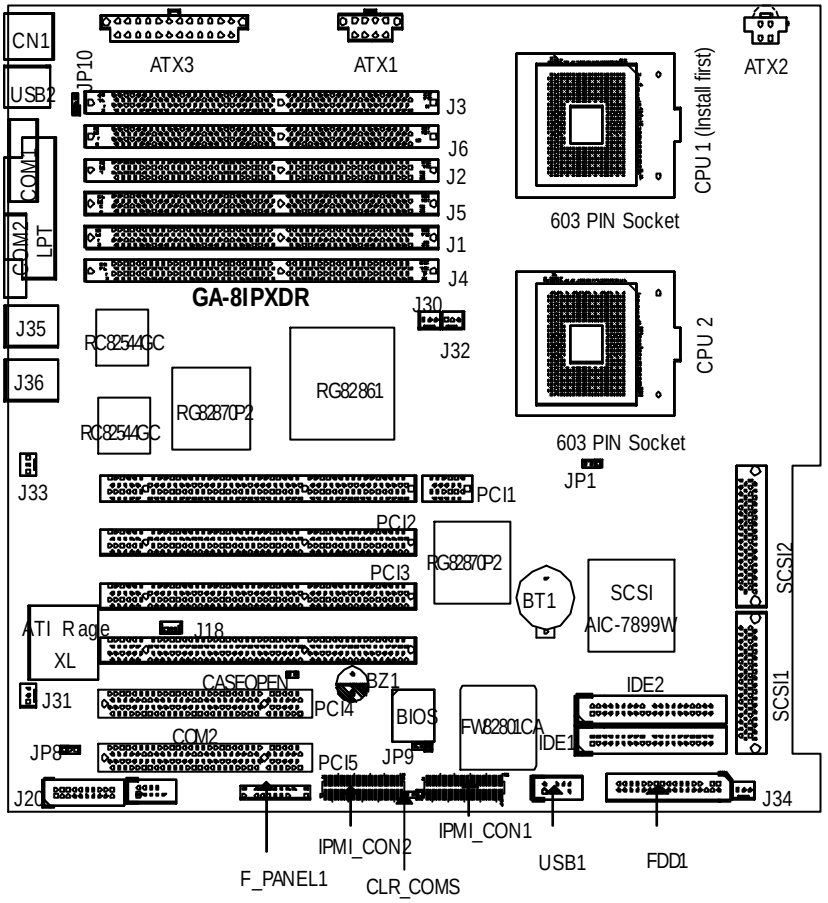
Form Factor	• 30.5cm x 33cm Extend ATX size form factor, 8 layers PCB.
CPU	• Socket 603 for Intel® FC-PGA Prestonia processor • Intel Prestonia 400MHz FSB • 512KB cache depend on CPU
Chipset	• Chipset RG82861 HOST/Controller • FW82801CA I/O Controller Hub
Memory	• 6 184-pin DDR DIMM sockets • Supports DDR 200 SDRAM • Supports Up to 6 Register DIMM DDR 200 • Supports up to 12GB DRAM (Max) • Supports only 2.5V DDR DIMM • Supports 144 bit ECC type DRAM integrity mode
I/O Control	• NS PC87366
Slots	• Support Intel P64H2 PCI-X bridge x 2 (4 PCI-Xslot supports 66~133MHz & PCI 2.2 compliant) • 2 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE bus master (DMA33/ATA66/ATA100) IDE ports for up to 4 ATAPI devices • Supports up to ATA100 IDE & ATAPI CD-ROM
On-Board Peripherals	• 1 Floppy port supports 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 2 COM ports (One at front, one at rear) • 2 LAN ports (LAN1 & LAN2) • 4 USB ports (Rear USB x 2, Front USB x 2)
Hardware Monitor	• CPU/Power/System Fan Revolution detect • CPU/Power/System Fan Control • CPU Overheat Warning • System Voltage Detect

to be continued.....

On-Board LAN	• Build in Intel Dual RC82544GC series 10/100/1000 Ethernet Chipset (Server Adaptec)
On-Board VGA	• Build in ATI Rage XL VGA PCI Chipset
On-Board SCSI	• Adaptec 7899W SCSI Chipset (Optional 7902)
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed AMI BIOS, 4M bit FWH
Additional Features	• PS/2 Keyboard power on by password • PS/2 Mouse power on • Wake on LAN • AC Recovery • IPMI V1.5 (Winbond BMC) • Support Raptor Card • Support Intel RAIDOS

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-8IPXDR Motherboard Layout



Chapter 2 Hardware Installation Process

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

Step 1- Install the Central Processing Unit (CPU)

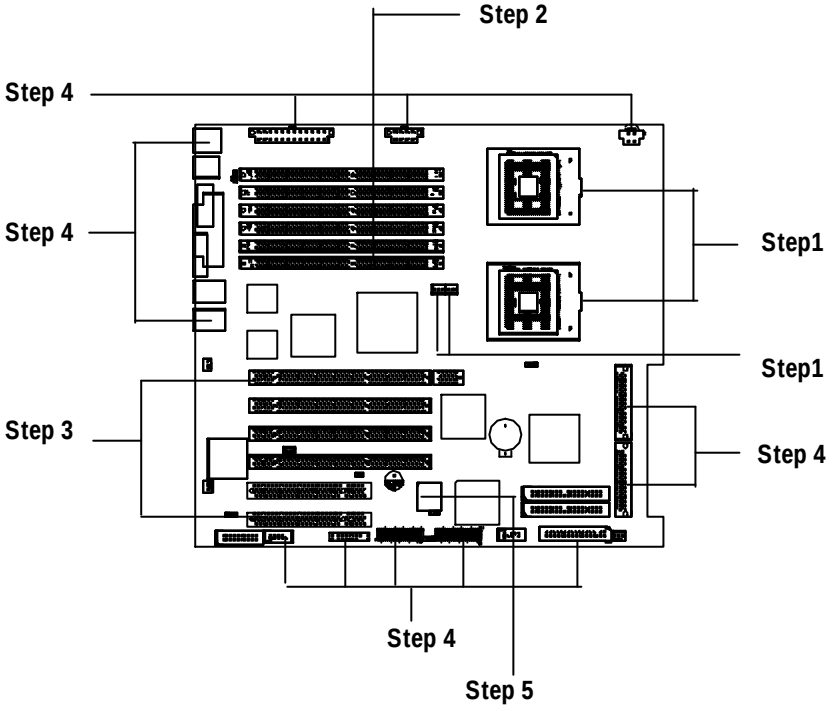
Step 2- Install memory modules

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:

You may use the 4 screws which come with the mainboard to reinforce the support between Xeon CPU heat-sink on the mainboard and chassis.

Step1: The 4 new mounting holes on the chassis are for additional support for Xeon CPU heat-sink on the mainboard.

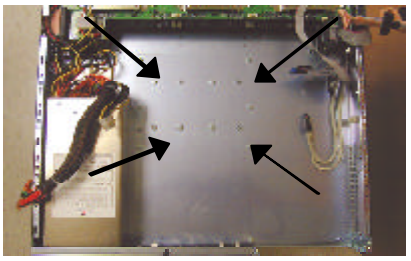


Figure 1

Step2:

Figure 2

Step3: Fit the 4 screws with 2 CPU retention modules on the chassis.

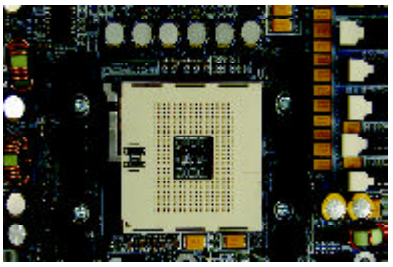
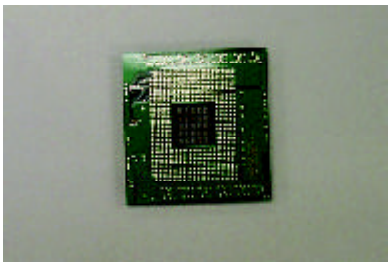


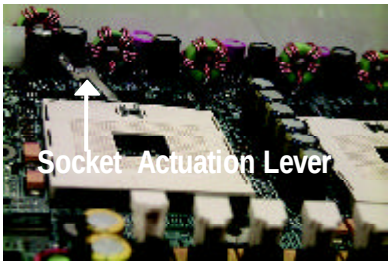
Figure 3

Step 1-2: CPU Installation

CPU Top View



CPU Bottom View



1. Pull the lever out, than lift up the Lever.

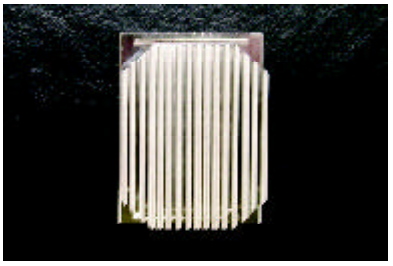
2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

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

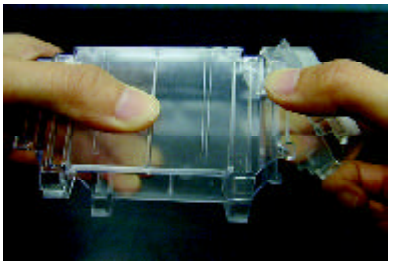
- **Please make sure the CPU type is supported by the motherboard.**
- **If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.**
- **Warning: If your are installing one CPU ONLY, please refer to the Motherboard Layout (page 7) to install the CPU into the certain socket.**

Step 1-3: CPU Heat Sink Installation

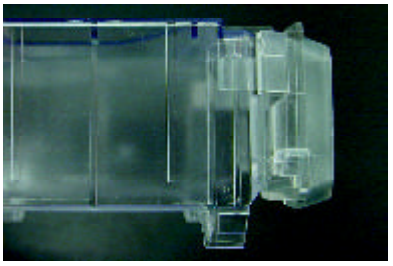
1. Use qualified fan approved by Intel.



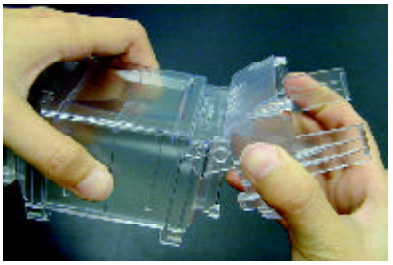
2. Heat Sink



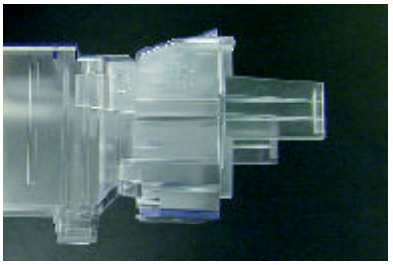
3. First step of assembling.



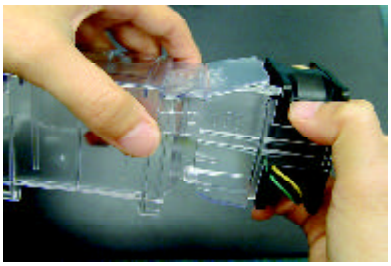
4. Completive picture for first step.



5. Second step of assembling.

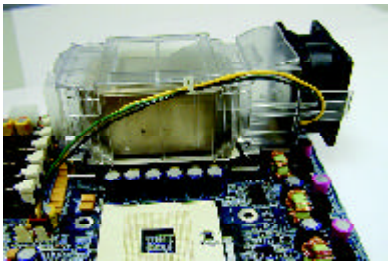


6. Completive picture for second step.



7. Fan assembly.

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



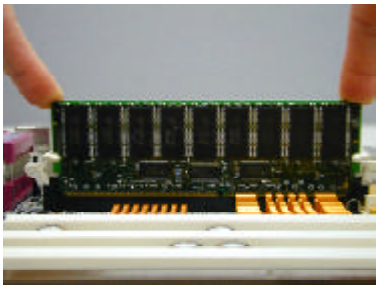
9. Picture of device set on the motherboard.

- **Please use Intel 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 6 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 Slot. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

DDR

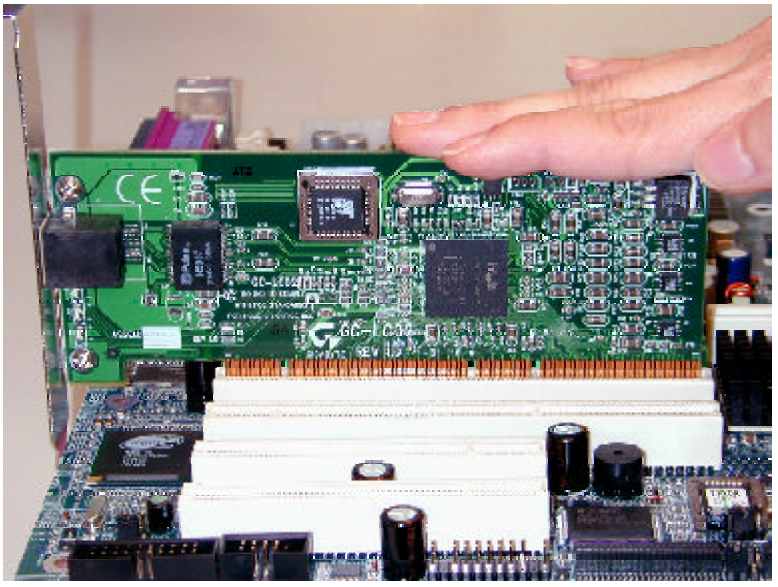


1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.
3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.
4. When installing the memory in the DIMM module, please insert them pair by pair.
5. The memory module does not support DDR X4, X8 type of mixture installation.

Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.

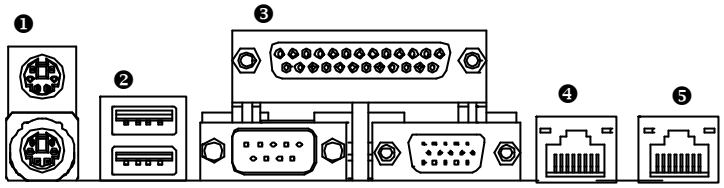
Step 3: Install expansion cards

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.

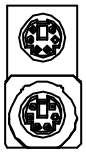


Step 4: Connect ribbon cables, cabinet wires, and power supply

Step 4-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

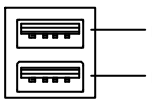


PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

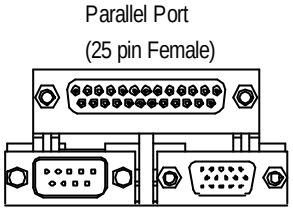
➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

❷ USB Connector



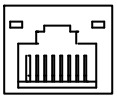
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS (Win 95 with USB supplement, Win98, Windows 2000, Windows ME, Win NT with SP 6) supports USB controller.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

❸ Parallel Port / Serial Port / VGA Port (LPT/COMA/VGA)

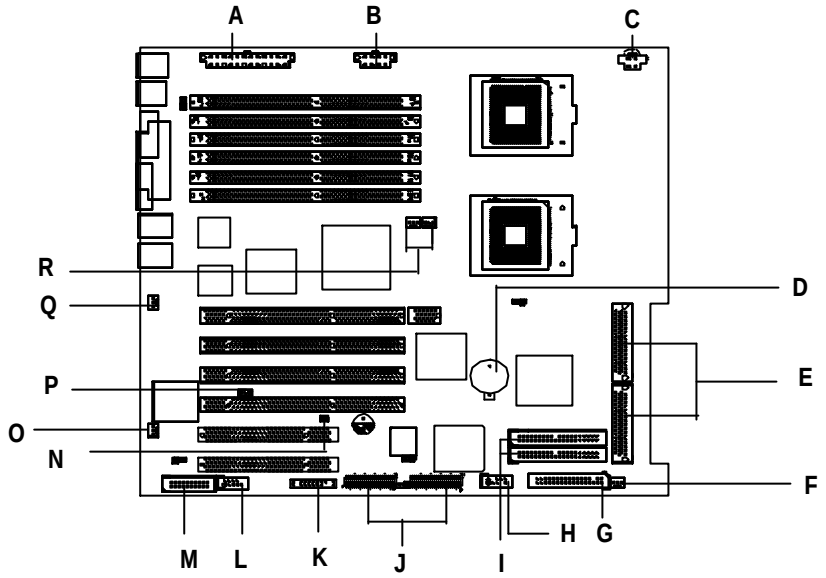


➢ This connector supports 1 standard COM port ,1 Parallel port and 1 VGA port. Device like printercan be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

❹/❺ LAN1 / LAN2 Port

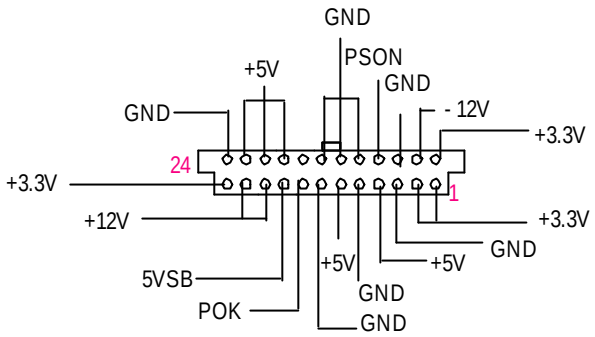


Step 4-2: Connectors Introduction



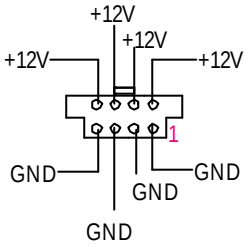
A) ATX3	J) IPMI_CON1/IPMI_CON2
B) ATX1	K) F_PANEL1
C) ATX2	L) COM2
D) BT1	M) J20
E) SCSI1/SCSI2	N) CASEOPEN
F) J34	O) J31
G) FDD1	P) J18
H) USB1	Q) J33
I) IDE1/IDE2	R) J30/J32

A) ATX3 (2x12 Pin ATX Power)



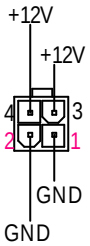
➢ AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

B) ATX1 (ATX1 Power)



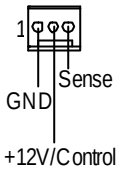
➢ This connector (ATX +12V) is used only for CPU Core Voltage.

C) ATX2 (+12V Power Connector)



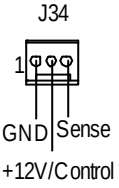
➢ This connector (ATX +12V) is used only for CPU Core Voltage.

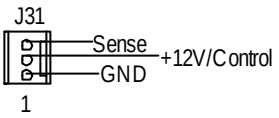
R) J30/J32 (CPU FAN Connector)



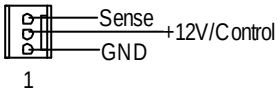
➢ Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600mA .

F/O) J34/J31 (System FAN Connector)

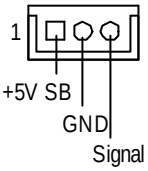




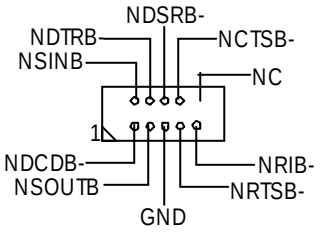
Q) J33 (Power FAN Connector)



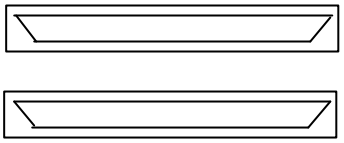
P) J18 (Wake On LAN Connector)



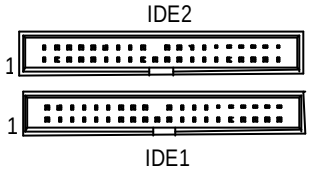
L) COM 2 Connector



E) SCSI1/SCSI2 Connector

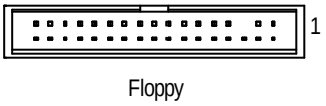


I) IDE1/IDE2 [IDE1 / IDE2 Connector(Primary/Secondary)]

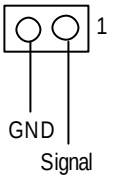


➢ Important Notice:
Please connect first harddisk to IDE1
and connect CDROM to IDE2.

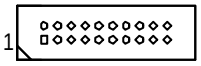
G) FDD1 (Floppy Connector)



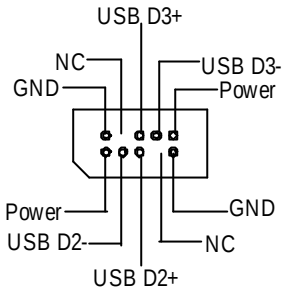
N) CASE OPEN



M) J20 (For 2U Display Connector)



H) USB1 (Front USB Connector)

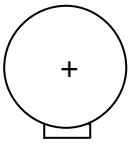


➢ Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

J) IPMI_CON1/IPMI_CON2 (IPMI Connector)

➢ We have IPMI module to customer used for option.

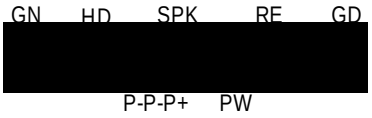
D) BT1 (Battery)



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.

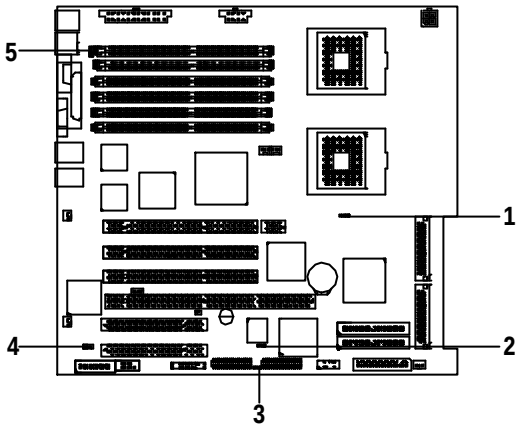
K) F_PANEL1 (2x11 pins connector)



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(-)
RE (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
P-P-P+(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_PANEL1 connector according to the pin assignment above.

Step 4-3: Jumper Setting Introduction



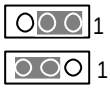
1) JP1	4) JP8
2) JP9	5) JP10
3) CLR_CMOS	

1) JP1 (Onboard SCSI Function)

1-2 close: SCSI Enabled (Default)

2-3 close: SCSI Disabled

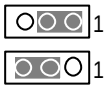
2) JP9 (USB Device Wake up Functon)



1-2 close: Disabled

2-3 close: Enabled (Default)

3) CLR_CMOS (Clear CMOS Function)

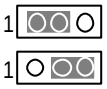


1-2 close: Clear CMOS

2-3 close: Normal (Default)

➢ Please note, You may clear the CMOS data to its default values by this jumper

4) JP8 (Onboard VGA Function)



1-2 close: VGA Enabled (Default)

2-3 close: VGA Disabled

5) JP10 (PS/2 KB/Mouse Wake up Functon)

1-2 close: Disabled

2-3 close: Enabled (Default)

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

Power ON the computer and press <DEL> immediately will allow you to enter Setup.

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
<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>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Reserved
<F7>	Load the Optimized Defaults
<F8>	Reserved
<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>.

- **Main**

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

- **Advanced**

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

  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

- **PCIPnP**

  This setup page includes all the items of PCI/Plug and Play function settings.

- **Chipset**

  This setup page allows you to change the values in the chipset registers and optimize your CPU status.

- **ACPI**

  Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- **Boot**

  This setup page include all the items of first boot function features.

- **Security**

  Change, set, or disable password. It allows you to limit access the system and setup.

- **Exit**

  There are five optionsin this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main (For example: BIOS Ver. : F8)

Once you enter AMI BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

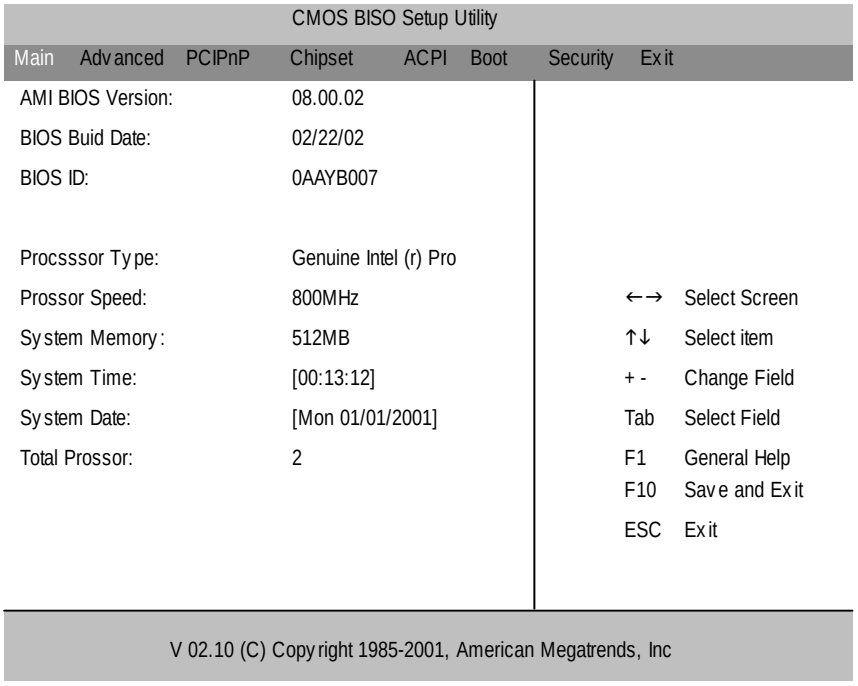


Figure 1: Main

☞ **AMI BIOS Version**

This field only displays the BIOS version.

☞ **BIOS BuidDate**

This field only displays the BIOS build date.

☞ **BIOS ID**

This field only displays the ID.

☞ **Processor Type**

This field only displays the type of present CPU.

☞ **Processor Speed**

This field indicates the speed of present CPU.

☞ **System Memory**

This field displays the installed memory size.

☞ **System TIme**

The time is calculated nased on the 24-hour military time clock. Set the System Time (HH:MM:SS)

☞ **System Date**

Set the System Date. Note that the "Day" automatically changed after you set the date.
(Weekend: DD: MM:YY)(YY:1099~2099)

☞ **Total Processor**

This field indicates the total prossors that are suppored by the motherboard.

Advanced

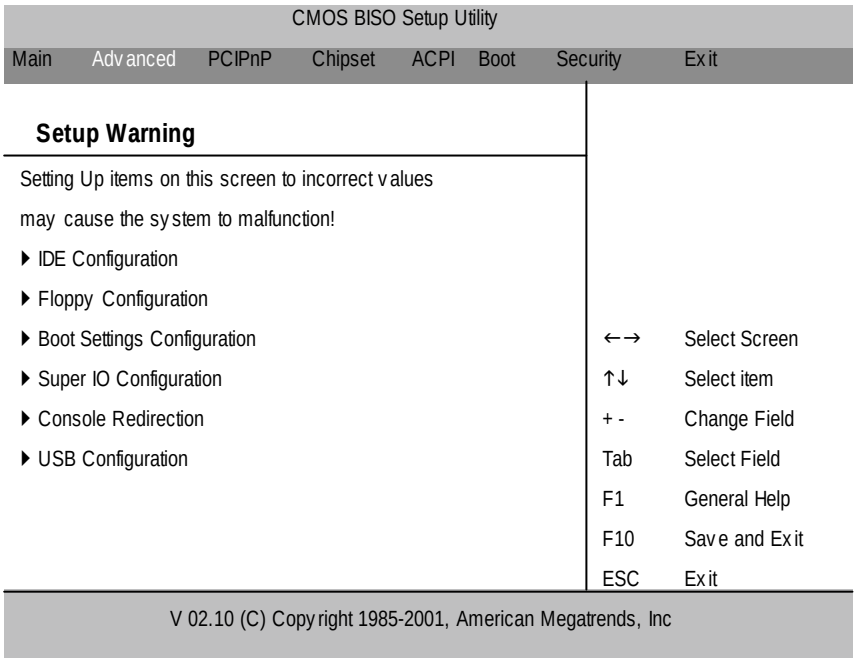


Figure 2: Advanced

Advanced

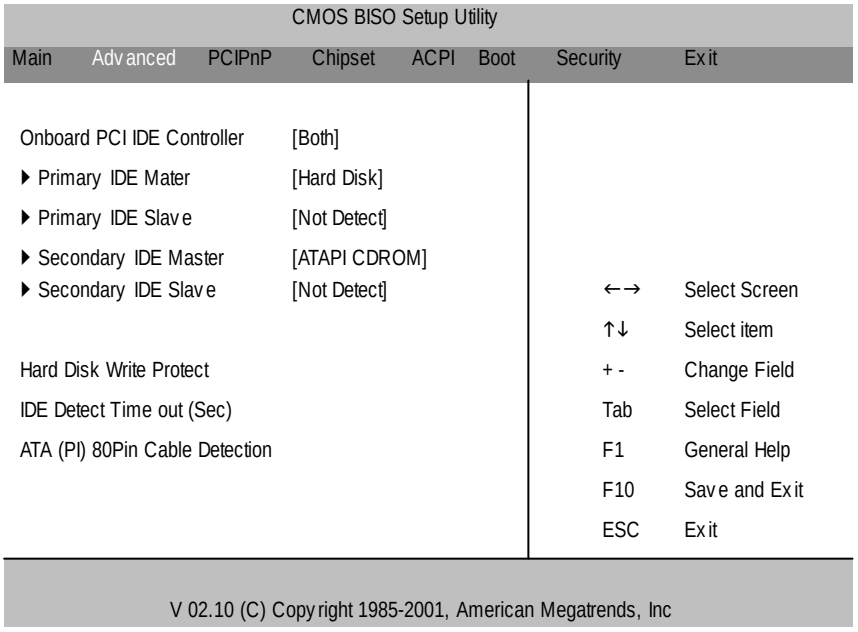


Figure 2-1: Advanced IDE Configuration

☝ **About This Section: Advanced**

This section **"Advanced"** will be divided into six sub-menus.

- □ **IDE Configuration**
- □ **Floppy Configuration**
- □ **Boot Setting Configuration**
- □ **Super IO Configuration**
- □ **Console Redirection**
- □ **USB Configuration**

With this section, allowing user to configure your system for basic operation. A user can change the system's default boot-up sequence, keyboard operation, shadowing and

and security, etc.

☞ IDE Configuration

This category allow user to configure the IDE device(s) .

- **Onboard PCI IDE Controller**

  BOTH: Enables both IDE Controller

  DISABLED: Disables the integrated IDE Controller

  PRIMARY: Enables only the Primary IDE Controller

  SECONDARY: Enables only the Secondary IDE Controller

- **Primary / Secondary IDE Master / Slaves**

  While entering setup, BIOS auto detects the prescence of IDE devices. This displays the status of auto detection of IDE devices.

- **Device:** This filed displays the device type in the specific IDE channel.
- **Vender:** This filed displays the device vender in the specific IDE channel.
- **Size:** This filed displays the capacity of the device in the specific IDE channel.
- **LBA Mode:** This filed shows if the device type in the specific IDE channel support LBA Mode.
- **PIO Mode:** This filed displays the PIO moe of the device in the specific IDE channel.
- **Async DMA:** This filed displays the DMA status the device in the specific IDE channel.
- **Ultra DMA:** This filed displays the DMA mode of the device in the specific IDE channel.
- **S.M.A.R.T:** This filed shows if the device in the specific IDE channel supports S.M.A.R.T.
- **Type:** This allows user to set the device type.

  The Choices: Auto (Defaults), Not Installed, CDROM, ARMD

- **LBA / Large Mode**

  DIsabled: Disables LBA Mode

  Auto: Enables LBA Mode if the device supports it and the device is not already formatted with LBA Mode disabled.

- **Block (Multi-Sector Transfer)**

  DIsabled: The Data transfer from and to the device occurs one sector at a time.

  Auto: The Data transfer from and to the device occurs multiple sectors at a time if the device supports it.

- **PIO Mode:** This option allows user to select the PIO Mode.
  The Choices: Auto (Defaults), 0,1,2,3,4,
- **DMA Mode:** This option allows user to select the DMA Mode.
  Auto(Default): Auto detect
  SWDMAn: Single Word DMAn
  MWDAMn: Multi Word DMAn
  UDMAn: Ultra DMAn
- **S.M.A.R.T:** S.M.A.R.T. stands for Self-Monitoring Analysis and Reporting Technology. Set this option "Enable" to permit BIOS to use S.M.A.R.T.
  The Choices: Auto (Defaults), Disable, Enable
- **32 Bit Data Transfer:** This option allows user to set if enable 32Bit data transfer.
  The Choices: Disable (Defaults), Enable

☞ Floppy Configuration

This category allow user to select the floppy drive type.

- **Floppy A / B**
  The Choice of Floppy A: Disabled, 360 KB 5 1/4", 1.2 MB 5 1/4", 720 KB 3 1/2", 1.44 MB 3 1/2" (Default) , 2.88 MB 3 1/2"
  The Choice of Floppy B: Disabled, 360 KB 5 1/4", 1.2 MB 5 1/4", 720 KB 3 1/2", 1.44 MB 3 1/2" (Default) , 2.88 MB 3 1/2"

☞ Boot Setting Configuration

- **Quick Boot**

  This setting allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.

  The Choice: Disabled, Enabled (Default)

- **Quiet Boot**

  Disabled: Displays normal POST message.

  Enabled: Displays OEM loo instead of POST message

  The Choice: Disabled (Default) , Enabled

- **AddOn ROM Displays Mode**

  This setting allows allows user to force the system to shown some important configuration message of the add-on adapter card when the selection "Initial Display Mode" is set "Slient"

  The Choice: Force BIOS (Default), Keep Current

- **Boot up Num-Lock**

  Set this option "On" to turn the Num Lock key On at a system boot.

  The Choice: On (Default), Off

- **PS/2 Mouse Support**

  Set this option "Enable" to allow BIOS to support for a PS/2 type mouse.

  The Choice: Enable (Default), Disable

- **Typematic Rate**

  This option sets the rate at which characters on the screen repeat when a key is pressed and held down.

  The Choice: Fast (Default), Slow

- **System Keyboard**

  This option does not specify if a keyboard is attached to the computer. Rather, it specifies if error message are displayed if a keyboard is not attached. This option permits you to configure workstation or server with no keyboards.

  The Choice: Present (Default), Absent

- **Parity Check**

  Set this option to "Enable" to check the parity of all system memory.

  The Choice: Disable (Default), Enable

- **Boot TO OS/2**

  Set this option to "Yes" if running OS/2 operating system and using more than 64 MB of system memory on the motherboard.

  The Choice: No (Default), Yes

- **Wait For 'F1' If Error**

  BIOS POST runs system diagnostics tests that can generate a messge follow by:

  Press < F1 > to Continue

  If this option is set to be "Enable", BIOS waits for user to press < F1> before continuing. If this option is set to be "Disable", BIOS continues the boot process with waiting for < F1 > to be pressed.

  The Choice: Enable (Default), Disable

☞ Super IO Configuration

When user enters the screen of **Super IO Configuration**, a message " Confiure Nat 366 Serial Port(s) and Parallel Port" appears at the up left corner of the screen. The message varies, depending on the BIOS version.

▸ Onboard Floppy Controller

Disabled: Disables the Floppy Controller

Enabled: Enables the Floppy Controller

▸ Serial Port 1 Address

This option specifies the base I/O port address of serial prot 1.

The Choice: Disabled, 3F8/IRQ4 (Default), 3E8/IRQ4, 2E8/IRQ3

▸ Serial Port 2 Address

This option specifies the base I/O port address of serial prot 2.

Note: If one port address is assigned to serial port 1, than that address will not be able to resign to serial port 2.

The Choice: Disabled, 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3

▸▸ Serial Port 2 Mode

This option specifies the operating mode for serial port 2. Set this option to 'Norma' when the system does not use IR.

The Choices: Normal (Defaults), Sharp-IR, SIR, Consumer

▸ Parallel Port Address

This option specifies the base I/O address of the parallel prot on the motherboard.

The Choice: Disable, 378 (Default), 278, 3BC

▸▸ Parallel Port Mode

This option specifies the parallel mode.

The Choices: ECP (Defaults), Normal, Bi-Directional, EPP

- **Normal:** The normal parallel pro is used.
- **Bi-Directional:** Use this setting to support bi-directional transfers on the parallel port.

- **EPP:** The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specifications. EPP uses the existing parallel port signal to provide asymmetric bi-directional data transfer driven by the host device.
- **ECP:** The parallel port can be used with devices that adhere to the Extended Capabilities Port specifications. ECP uses the DMA protocol to achieve data transfer rate up to 2.5Mbit/s. ECP provides the symmetric bi-directional communication.

ECP Mode DMA Channel

This option is only available if the setting for the **Parallel Port Mode** option is "ECP"

The Choices: DMA 0, DMA 1, DMA 3 (Default)

Parallel Port Irq

This option is to select Parallel Port Irq

The Choices: IRQ 7(Default) , IRQ 5

Console Redirection Configuration

Console Redirection

Enable this option to remote monitoring and controlling the BIOS by the client computer.

Note: If user wants to apply this function, he/she must press 'F4' than 'DEL'

Enabled: Enables Console Redirection

Disabled: Disables Console Redirection

The Choice: Disabled (Default), Enabled

Serial Port Number

This option is to select serial port for console redirection. Make sure the selected port is enabled.

The Choices: COM 1(Default) , COM 2

Serial Port Mode

This option is to select serial portsetting.

The Choices: [57600 8,n,1] (Default) , [115200 8,n,1] , [19200 8,n,1]

USB Configuration

USB Function

This option allows user to enable USB host controller.

Enabled: Enables USB host Controller

Disabled: Disables USB host Controller

The Choice: Enabled, (Default), Disabled

- **Legancy USB Support**

  This option allows user to function support for legacy USB.

  Auto: System auto detects the format of legacy USB

  Enabled: Enables support for legacy USB

  Disabled: Disables support for legacy USB

  The Choice: Auto, (Default), Enabled, Disabled

- **USB ZIP Emulation Type**

  This option allows user to select USB ZIP Emulation Type.

  Auto: System auto detects the USB ZIP Emulation Type

  Floppy: Selects Floppy be USB ZIP Emulation Type

  Hard Disk: Selects Hard Disk to be USB ZIP Emulation Type

  The Choice: Auto, (Default), Floppy, Hard Disk

- **USB Beep Message**

  Enables the beep message during USB device enumeration.

  The Choice: Enable, (Default), Disable

PCIPnP

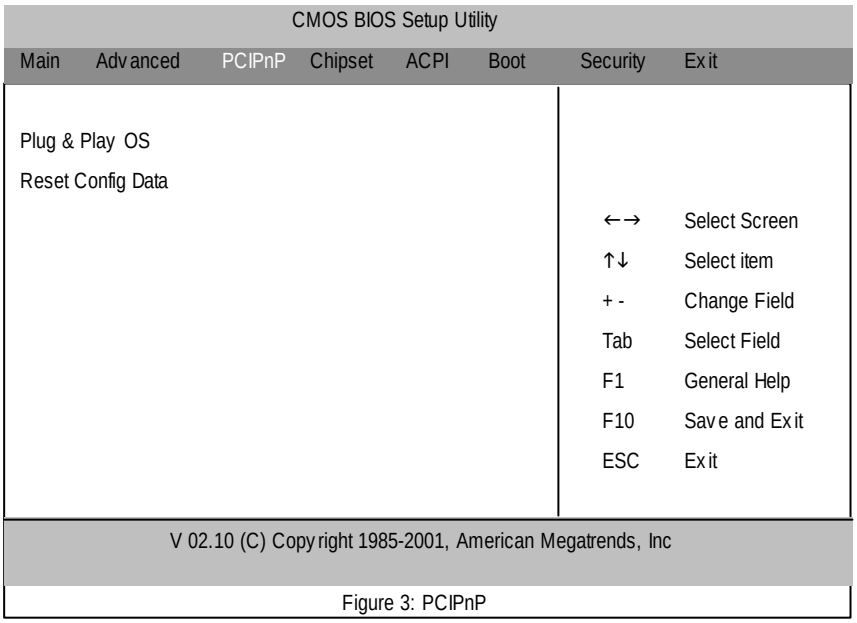


Figure 3: PCIPnP

About This Section: PCIPnP

This section describes the configuration of PCI bus system, or Personal Conputer Interconnect, is a system which allows I/O devices to operate at a speeds nearing the speed the CPU itself uses when communicating withits own special components. This section covers some technical items and it si tongly recommended that only experienced users should make any changes to the default settings.

Plug & Play O/S

Set this option to 'Yes' to inform AMIBIOS that the operating system can handle Plau and Play (PnP) devices.

NO: Lets teh BIOS configure all the devices in the system.

YES: Lets the operating configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system.

The Choice: No (Default) , Yes

☞ **Plug & Play O/S**

NO: Dose notforce the PnP data to be cleared on boot.

YES: Clears PCI / PnP Configuration Data stored in Flash on next boot.

The Choice: No (Default) , Yes

Chipset

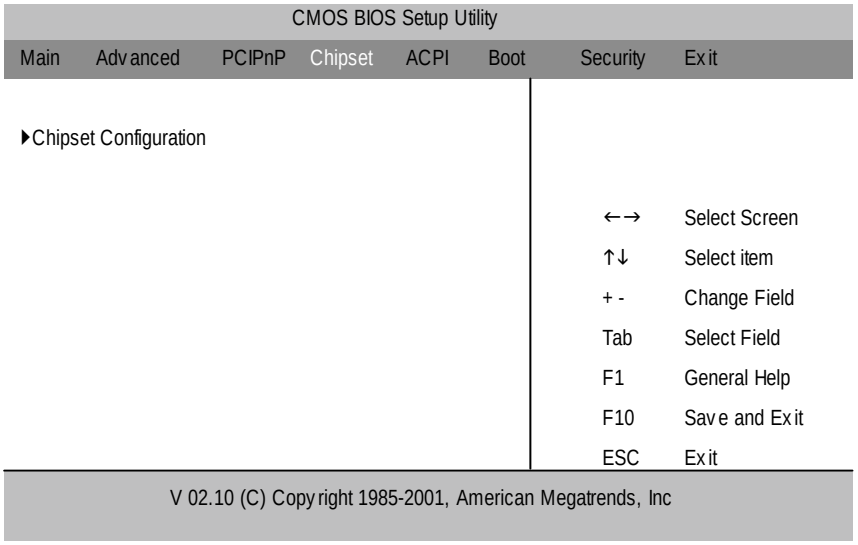


Figure: 4 Chipset

About This Section: Chipset

This section allows you to configure the system based on the specific features of the built-in chipset. This Chipset menu manages bus speeds and access to system memory resources. The default settings have been chossen carefully for your system in order to provide the optimal system performance. You might only need to set up these values again by loading optimal defaults or fail-safe defaults (under the **Exit** menu) if you discover the data stored in the CMOS was being lost or not correct and system is not longer to boot again or incorrect operations.

CPU Configuration

This category allow user to function CPU configuration .

- **CPU Ratio Status [Unlock]**
  - **CPU Core Ratio:** This filed allows user to set the PLL ratio between CPU Clock and the FSB Frequency.

ACPI

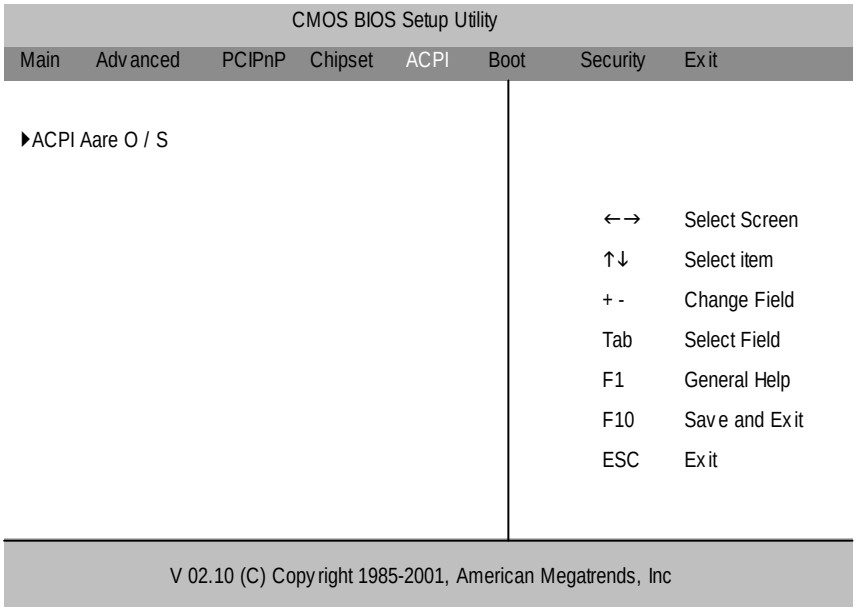


Figure 5: ACPI

☞ **ACPI Aware O/S**

This field allows you to set if permits the operating system that has built-in the **Advanced Configuration and Power Management Interface (ACPI)** feature to detect the ACPI function in the system

✎ **Advanced Configuration and Power Management Interface (ACPI)** takes the power management out of the BIOS and gives control to the OS. Typically, a system's BIOS is only able to turn a device off after a certain period of inactivity. With ACPI, the user can instruct the OS to slow down the processor or enter sleep mode. This basically gives the OS, and thus the user, more control of power management.

The Choice: Yes (Default), No

Boot

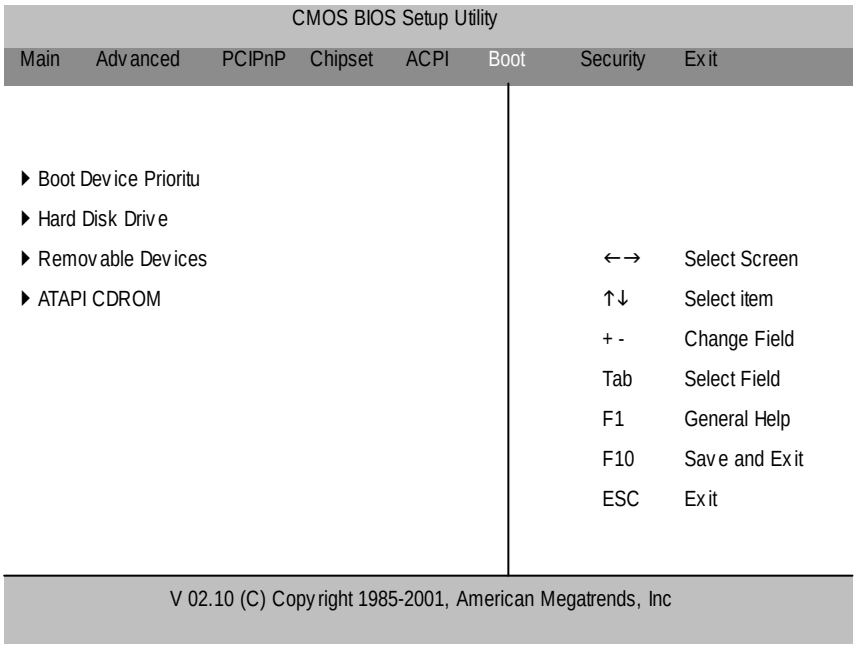


Figure 6: Boot

About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Spacne> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on. In this menu, the inofrmation of hard disk, removable device and ATAPI CDROM drive

Boot Device Priority

- **1st / 2nd / 3 rd Boot Device**

  These three fields determines which type of device the system attempt to boot from after **AMIBIOS Post** completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

The Choice for 1st Boot Device: Removable Device (Default) , ATAPI CDROM, Hard Disk, Disabled.

The Choice for 2nd Boot Device: Removable Device , ATAPI CDROM (Default) , Hard Disk, Disabled.

The Choice for 3rd Boot Device: Removable Device , ATAPI CDROM, Hard Disk (Default), Disabled.

☞ Hard Disk Drive

Specifies the boot sequence from the available devices.

- **1st Hard Disk Drive**

  This field only displays the information of 1st Hard Disk Drive.

☞ Removable Devices

Specifies the boot sequence from the available devices.

- **1st Removable Device**

  This field only displays the information of 1st Removable Device.

☞ ATAPI CDROM Drive

Specifies the boot sequence from the available devices.

- **1st ATAPI CDROM Drive**

  This field only displays the information of 1st ATAPI CDROM Drive.

Security

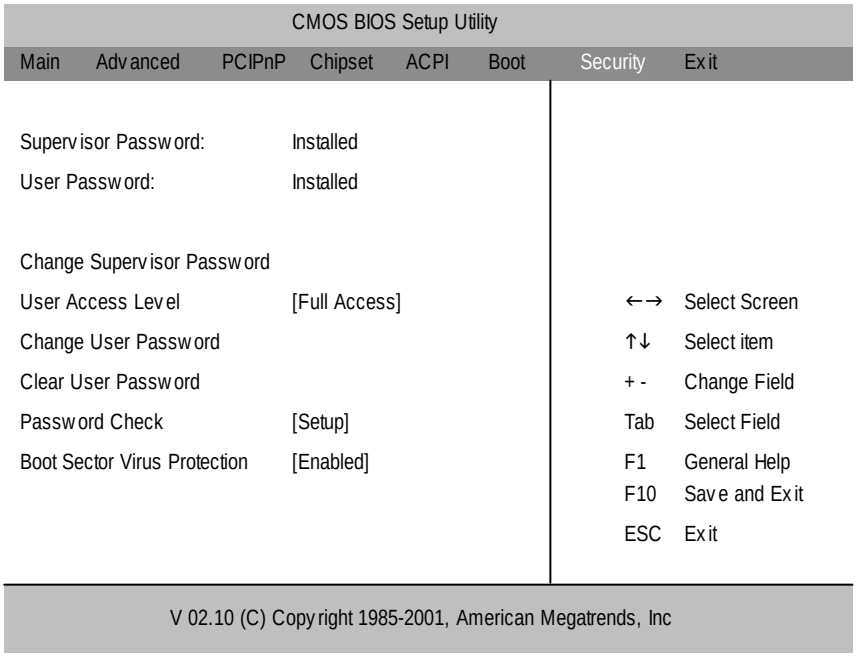


Figure 7: Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

Note: When user enters the secruity screen for the first time, the message **"Not Installed"** will be shown on both **Supervisor Password** and **User Password** selections. Then, go to the following sub-section:

- ✓ **Change Supervisor Password**, and
- ✓ **Change User Password** for password settings

☞Change Supervisor Password

You can install and change the options for the setup menus. Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password or press <Enter> key to disable this option.

☞User Access Level

When the Supervisor Password is installed, this option will be available.
This option allows user to set the user access level.
LIMITED: Allows only limited fields to be changed such as Date and Time.
No Access: Prevents user access to the Setup Utility.
View Only: Allows user to access to the Setup Utility, but the fields can not be changed.
The Choice: No Access, View Only, Limited, Full Access (Default)

☞Change User Password

You can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen o assist you in creating a password.
Type the password up to 6 characters in lengh and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. You will be asked to confirm the entered password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a specified password.

☞Clear User Password

To disable a user password, just press <Enter> you are prompted. A comfirmation message will pops up. Once the password is disabled, the system will boot and user can enter Setup unauthorized.
When a user password has been enabled, you will be prompted to enter it every time you try to enter Setup. This function prevents an unauthorized person from changing any part of your system configuration. Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This will prevent unauthorized use of your computer.

☞Password Check

Setup will check password while invlolking setup.

Always will check the password while involking setup as well as on each boot.

The Choice: Setup (Default), Always

☞Boot Sector Virus Protection

This option alllows user to enable / disable the function of virus protection. Any action attempt to modify the data of boot sector during POST will be forbidden if this function is enabled.

The Choice: Diabled (Default), Enabled

Exit

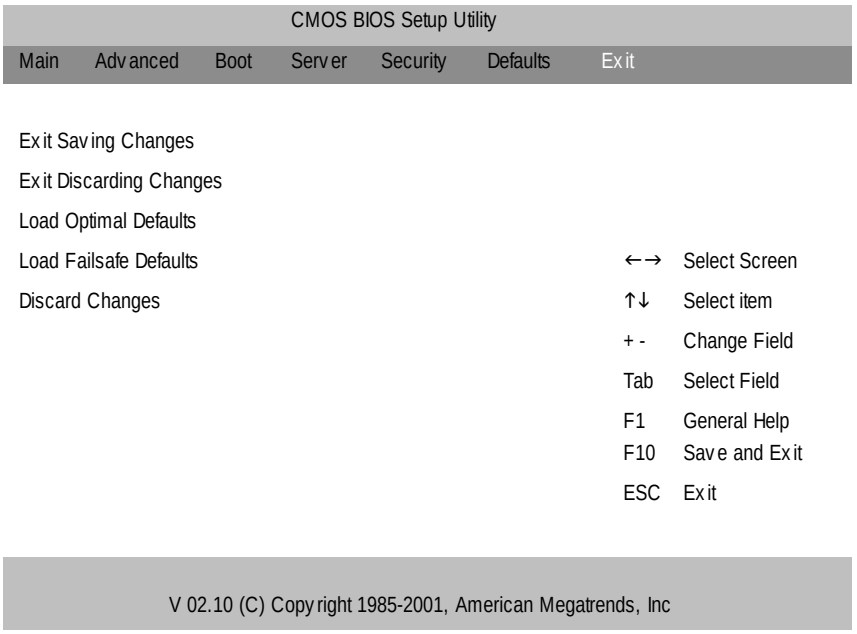


Figure 8: Exit

☝ **About This Section: Security**

Once you have changed all of the set values in the BIOS setup, you should save your chnages and exit BIOS setup program. Select **"Exit"** from the menu bar, to display the following sub-menu.

- □ **Exit Saving Changes**
- □ **Exit Discarding Changes**
- □ **Load Optimal Defaults**
- □ **Load Failsafe Defaults**
- □ **Discard Changes**

☞Exit Saving Changes

This option allows user to exit system setup with saving the changes.
Press <Enter> on this item to ask for the following confirmation message:
Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.
Therefore, whenyou boot up your computer next time, the BIOS will
re-configure your system according data in CMOS.

☞Exit Discarding Changes

This option allows user to exit system setup without changing any
previous settings values in CMOS. The previous selection remain in effect.
This will exit the Setup Utility and restart your compuetr when selecting this option.
Press <Enter> on this item to ask for confirmation message.

☞Load Optimal Defaults

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

Load Optimal Defaults? ((Y/N) **N**

Press 'Y' to load the default values that are factory settings for optimal performance system operations.

☞Load Failsafe Defaults

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

Load Failsafe Defaults? (Y/N) **N**

Press 'Y' to load the BIOS default values for the most stable, minimum-performance system operation.

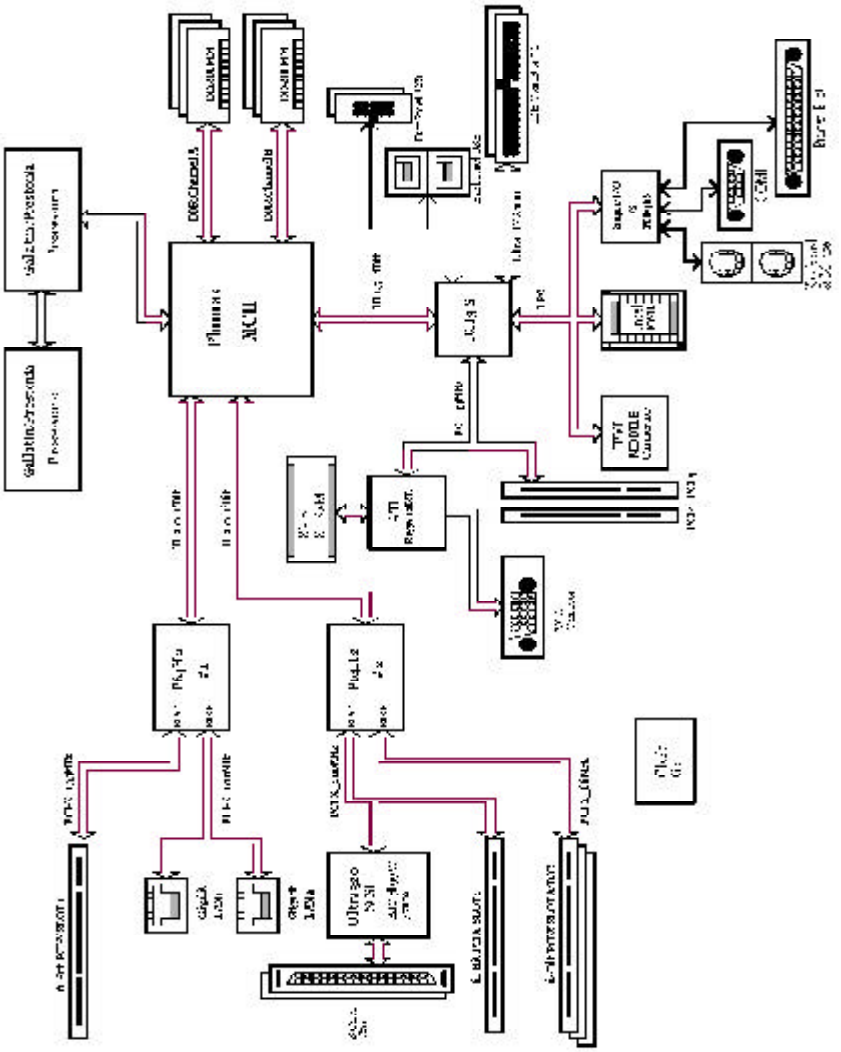
☞Discard Changes

This allows user not changing any previous setting values in CMOS. The previous selections remain in effect. Press <Enter> on this item to ask confirmation.

✎ **Note:** For fast setting up a system at the first time, we strongly recommend to **load system optimal defaults** first.

Chapter 4 Technical Reference

Block Diagram



Chapter 5 Appendix

(For example: Driver CD Ver. : 1.1)

Appendix A: Inf Update Utility Installation

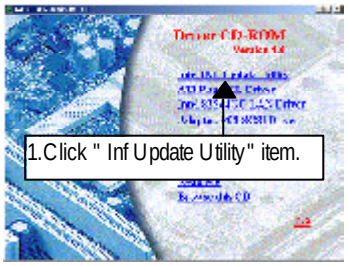
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Installation Procedures:

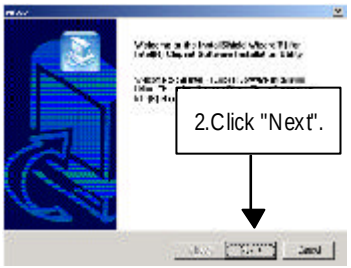
☞ The CD autorun program starts. Double click on "Inf Update Utility" to start the installation. (Figure 1)

☞ Then, a series of **Setup Widzard** dialog boxes appears. (Figure 2 to Figure 4)

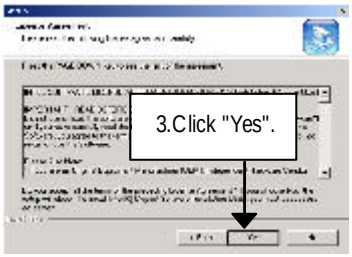
☞**Setup** complete, click "Finish" to restart your computer.



(1)



(2)



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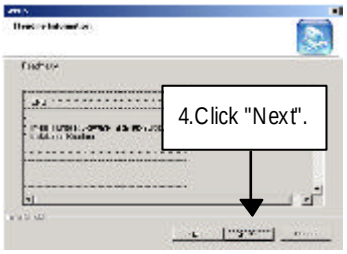


(4)

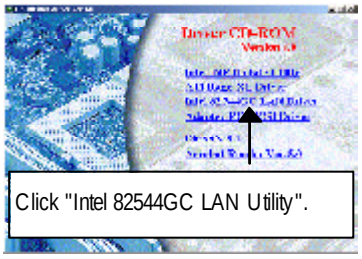
(5)

Appendix C: Intel 82544GC LAN Utility

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.

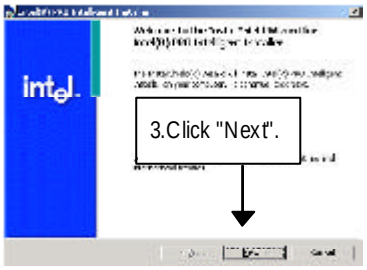
Installation Procedures:

- ☞ The CD autorun program starts. Double click on "Inf Update Utility" to start the installation. (Figure 1)
- ☞ Double click on the "Install Driver and Utilities" to begin the LAN utility installation (Figure 2)
- ☞ Then, a series of **Installation Widzard** dialog boxes appears. (Figure 3 to Figure 6)
- ☞**Installation** complete, click "Finish".
- ☞ Figure 8 indicates the installation result, click "OK".

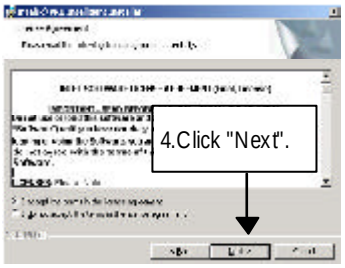


(1)

(2)



(3)



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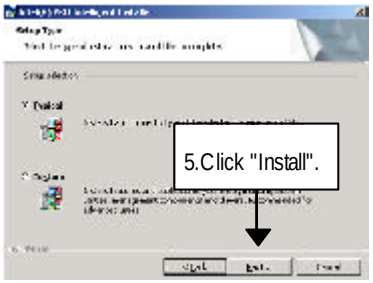
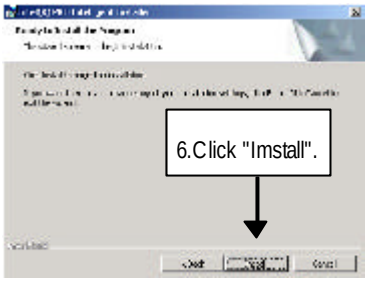
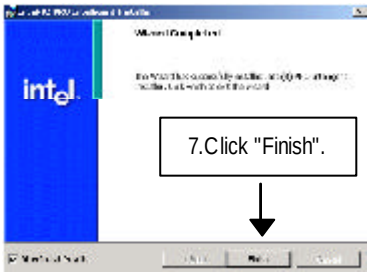

5.Click "Install".

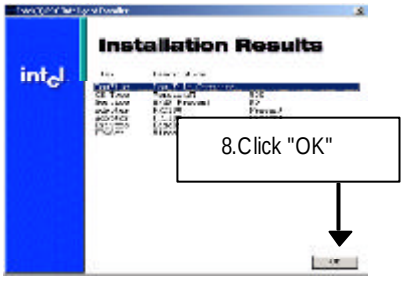
(5)


6.Click "Imstall".

(6)


7.Click "Finish".

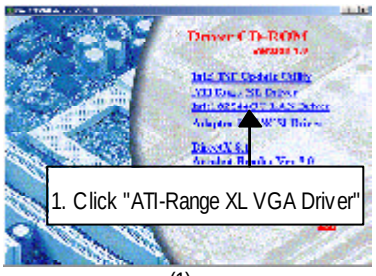
(7)


Installation Results
8.Click "OK"

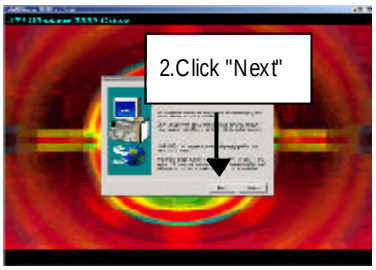
(8)

Appendix D: ATI -Range XL VGA Driver

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.



(1)



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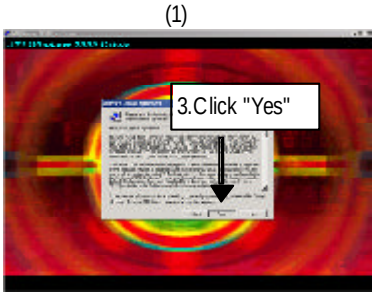

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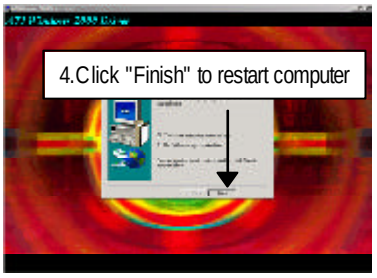
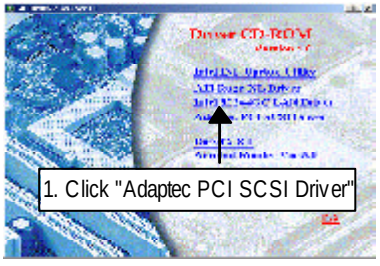


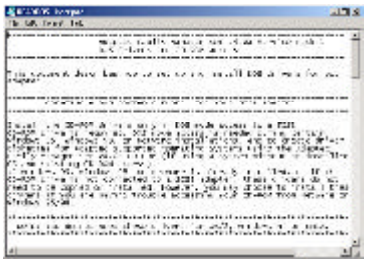
(4)

Appendix E: Adaptec PCI SCSI Driver

Please install the driver through CD-ROM by the path D:\Driver\SCSI (This manual assumes that your CD-ROM device drive letter is D:)Double click on “Adaptec PCI SCSI Driver”, then a **Read Me** file will guide you to the installation instruction.



(1)



(2)

Appendix G: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture

to be continued.....

Acronyms	Meaning
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description: