GA-8IPXDR-E Series
Intel® Dual Xeon™ Serverboard

USER'S MANUAL

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Item Checklist

☑ The GA-8IPXDR-E series motherboard   ☑ I/O Back Panel

☑ IDE cable x 1/ Floppy cable x 1   ☑ USB Cable x 1(Optional)

☑ Driver CD for motherboard driver & utility   ☑ SCSI Cable x 1 (Optional)

☑ GA-8IPXDR-E user's manual

GA-8IPXDR-E Series Model List

✓   GA-8IPXDR-E (Supports 533MHz / with SCSI function)

✓   GA-8IPXDR-EC (Supports 533MHz / without SCSI function)

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	• mPGA 604 socket for Intel® Xeon™ processor with 512KB L2cache
	• Intel Prestonia 400/533MHz FSB
Chipset	• Chipset RGE7501MC HOST/Memory Controller Hub
	• FW82801CA I/O Controller Hub
Memory	• 6 184-pin DDR DIMM sockets
	• Supports 200MHz/266MHz DDR memory interface
	• Supports Up to 6 72bit Registered ECC DDR DIMMs
	• Supports up to 12GB DRAM (Max)
	• Supports only 2.5V DDR DIMM
	• Dual channel supports :
	● One 144bit wide DDR memory port with ECC type DRAM integrity.
	● Peak memory bandwidth of 3.2GB/s or 4.21 GB/s
	● DIMMs must be populated in pairs.
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
	• PCI_X-3 slot (Green) implented the Intel RADOIS circuitry supports the Intel ZCR and Adaptec Night hawk2 ZCR Adapters
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 Overheat Warning
	• System Voltage Detect
On-Board LAN	• Build in Intel 82546EB single chip with Dual ports Gigabit Ethernet controller (Server Adapter)
On-Board VGA	• Build in ATI Rage XL PCI VGA Chipset
On-Board SCSI	• Adaptec 7902W Ultra 320 SCSI Chipset
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed AMI BIOS, 4M bit FWH
Additional Features	• Wake on LAN
	• AC Recovery
	• IPMI V1.0 (Winbond BMC)
	• Intel® RADIOS circuits support both Intel® RADOIS and Adaptec Nighthawk 2 ZCR adapters

✪※ 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-E(C) Motherboard Layout
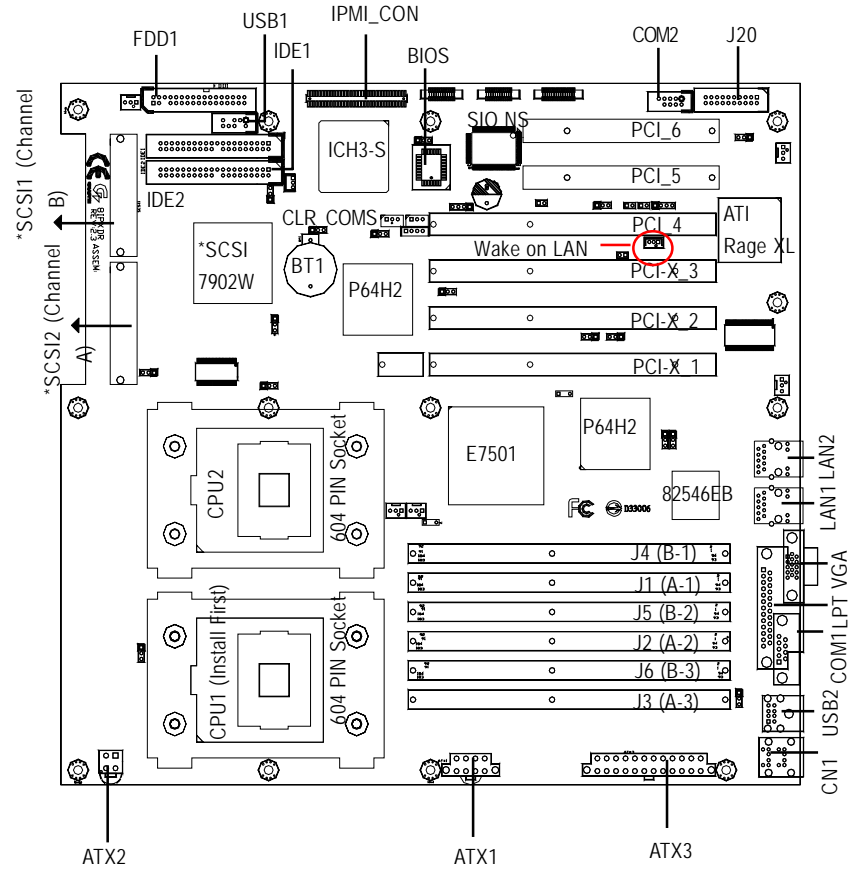
Note that * indicates for GA-8IPXDR-E Only

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
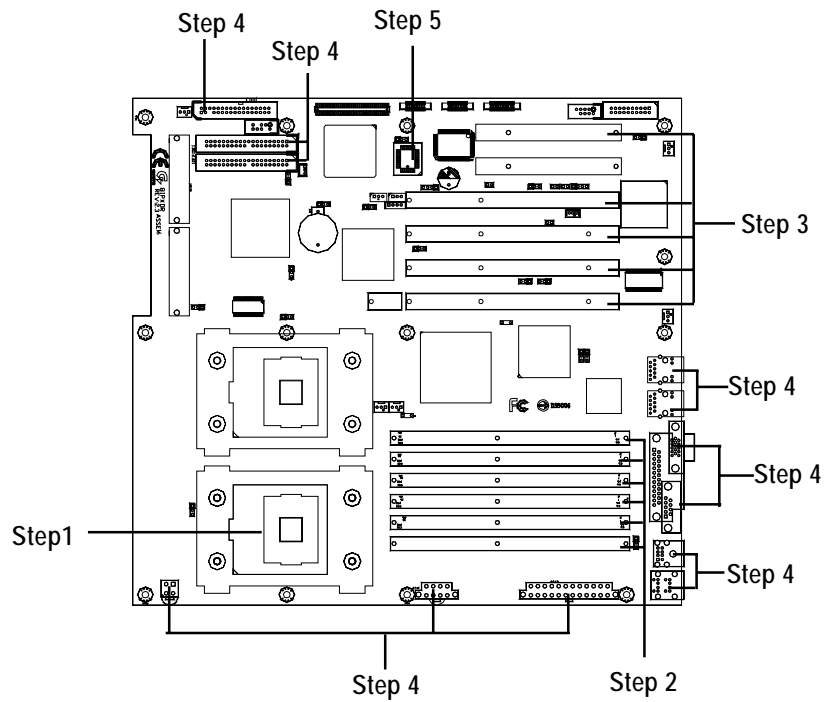
Step 1: Install the Central Processing Unit (CPU)

Step 1-1: Installing Motherboard to the Chassis...

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.
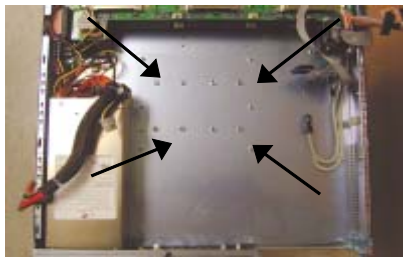
Step2: Preparing the assemblt kits.

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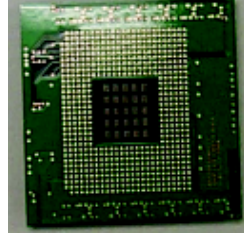

Figure 1

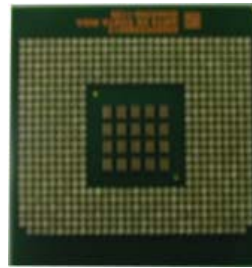Figure 2

Step 1-2: CPU Installation

CPU Top View: Socket 603 / 400MHz

CPU Botttom View: Socket 603 / 400MHz

CPU Top View: Socket 604 / 533MHz

CPU Bottom View: Socket 604 / 533MHz
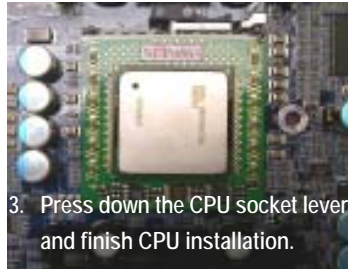
For socket 603 / 400MHz
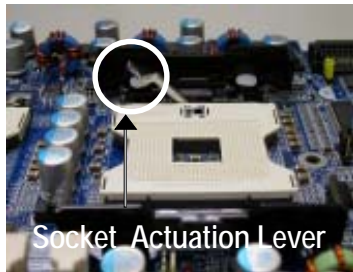

Socket Actuation Lever

Pin1 indicator
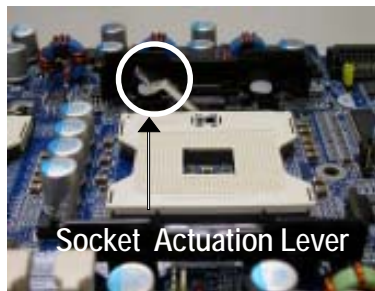
1. Pull the lever out, than lift up the Lever.

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.

For socket 604 / 533MHz

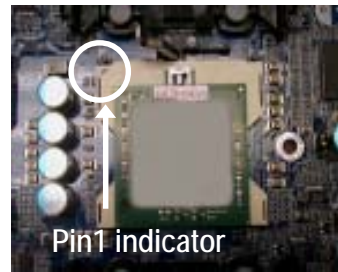Socket_Actuation Lever

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

Pin1 indicator

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.
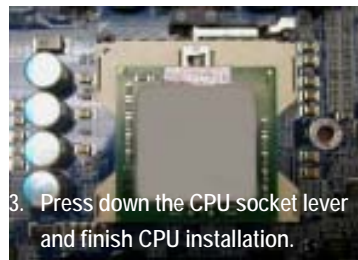
- Please make sure the CPU type is supported by the motherboard.
- If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.
- Warning: If your are installing one CPU ONLY, please refer to the Motherboard Layout (page 8) to install the CPU into the certain socket.

Step 1-3: CPU Heat Sink Installation

1. Use qualified fan approved by Intel.
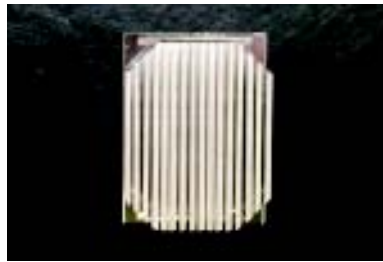
2. Heat Sink

3. First step of assembling.
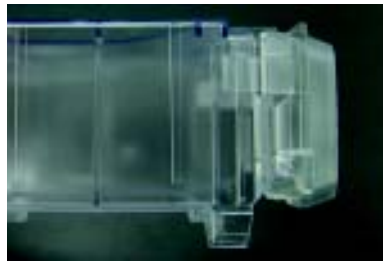
4. Completive picture for first step.
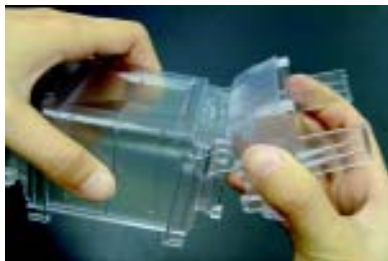
5. Second step of assembling.
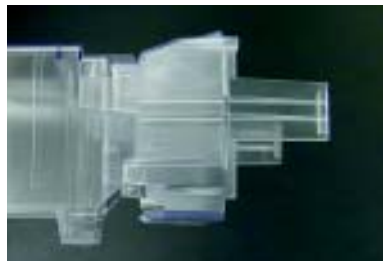
6. Completive picture for second step.
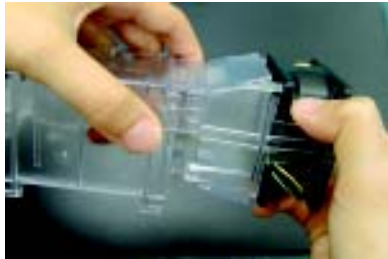
7. Fan assembly.
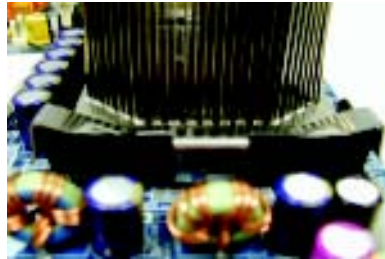
8. Hook one end of the cooler bracket to the CPU socket first.

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, but it can only support a maximum of 3 banks DDR memory. DDR socket 1 uses 1 bank, DDR socket 2& 3 share the remaining 2 banks. 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.
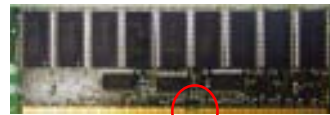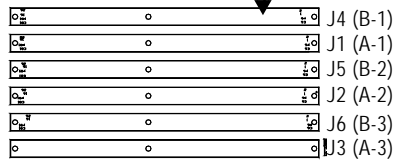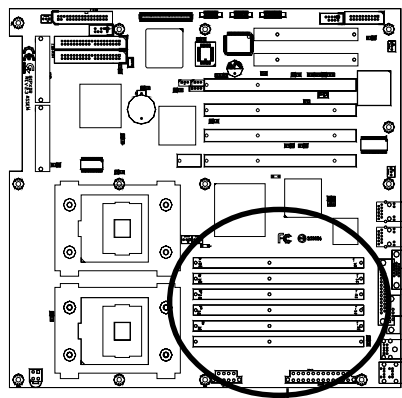
Registered DDR

Notch

J4 (B-1)
J1 (A-1)
J5 (B-2)
J2 (A-2)
J6 (B-3)
J3 (A-3)

		J4 (B-1)
		J1 (A-1)
		J5 (B-2)
		J2 (A-2)
		J6 (B-3)
		J3 (A-3)
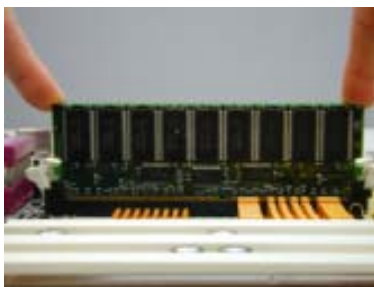
Installation Step:

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 theDIMM slots to lock the DIMM module.

4. When installing the memoryin the DIMM module, please insert them **pair by pair**. You must follow the slot number order to insert the DIMM into DIMM module. The installation number sequence are **J3J6 -- J2J5 -- J1J4**. If you only insert one pair, you must insert it in J3/J6 slot.

5. If you want to install X4, X8 device width DDR DIMMs simultaneously, please populated x4 device width DIMMs at the farthest DIMMs away from MCH.

6. It is not not recommended to use DDR X4, X8 type of mixture installation.

7. DIMMs must be populated in pairs, and the DIMMs in a pair must be identical.

8. Reverse the installation steps when you wish to remove the DIMM module.

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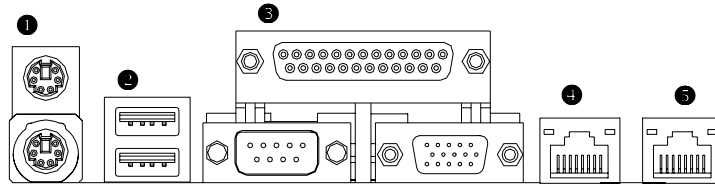
❶ PS/2 Keyboard and PS/2 Mouse Connector
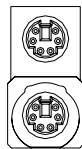
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

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

❷ USB Connector
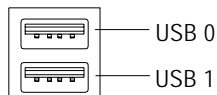
USB 0

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 (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.

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

Parallel Port
(25 pin Female)

COMA
Serial Port
(9 pin Male)

VGA
VGA Port
(15 pin Female)
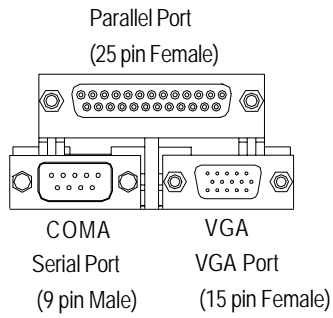
➢This connector supports 1 standard COM port ,1 Parallel port and 1 VGA port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

●/● LAN1 / LAN2 Port

Step 4-2: Connectors Introduction
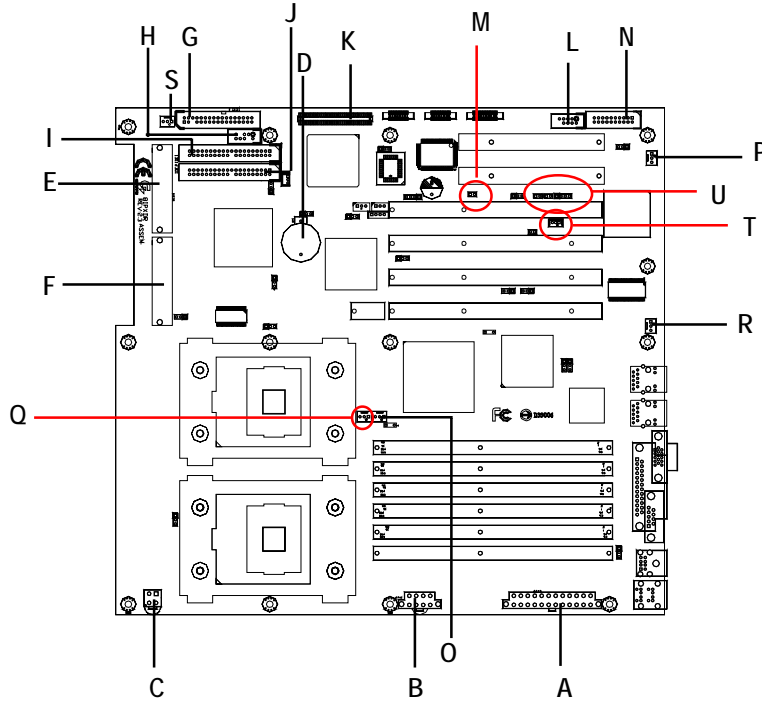
A)	ATX3	L)	COM2
B)	ATX1	M)	CASEOPEN
C)	ATX2	N)	J20 (Front Panel)
D)	BT1	O)	J30
E)	SCSI1	P)	J31
F)	SCSI2	Q)	J32
G)	FDD1	R)	J33
H)	USB1	S)	J34
I)	IDE1	T)	J18 (Wake On LAN)
J)	IDE2	U)	F_Panel
K)	IPMI_CON		

A) ATX3 (2x12 Pin ATX Power)
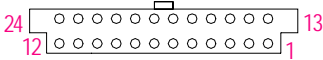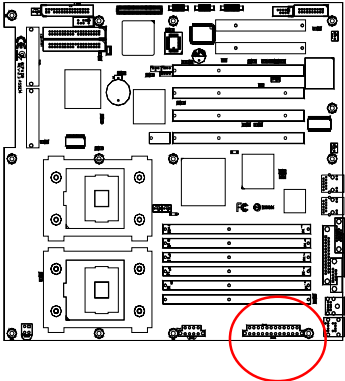
PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

➢ 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)
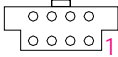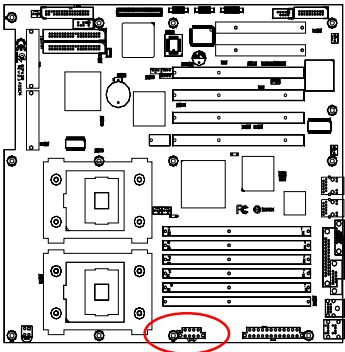
Pin No.	Definition
1	GND
2	+12v
3	GND
4	+12V
5	GND
6	+12V
7	GND
8	+12V

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

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C) ATX2 (+12V Power Connector)
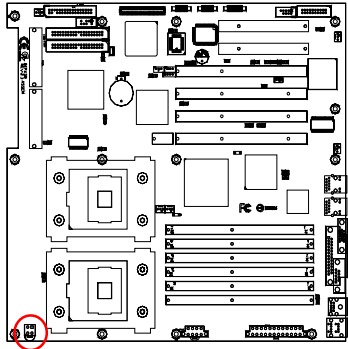
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

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

O/Q) J30/J32 (CPU FAN Connector)
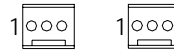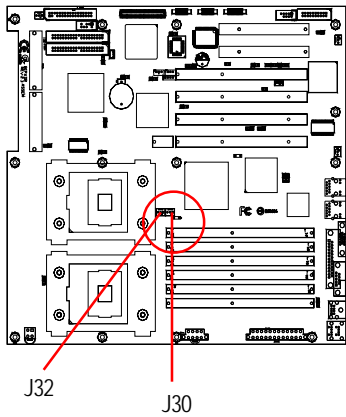
J32:CPU1 FAN   J30:CPU 0 FAN

Pin No.	Definition
1	GND
2	+12v/Control
3	Sense

➢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 .

J32   J30

F/O) J33/J34 (System FAN Connector)

J33

Pin No.	Definition
1	GND
2	+12v/Control
3	Sense

J34
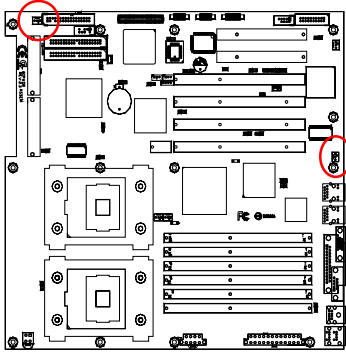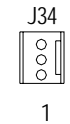
Pin No.	Definition
1	GND
2	+12v/Control
3	Sense

P) J31 (Power FAN Connector)
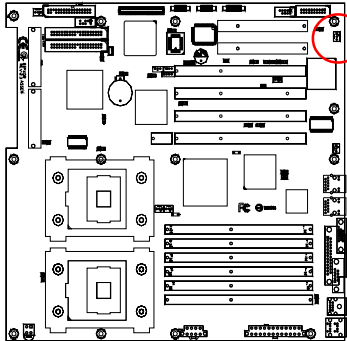
Pin No.	Definition
1	GND
2	+12v/Control
3	Sense

T) J18 (Wake On LAN Connector)
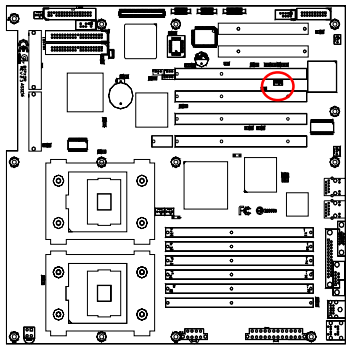
Pin No.	Definition
1	+5VSB
2	GND
3	Signal

L) COM 2 Connector
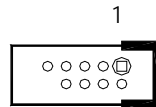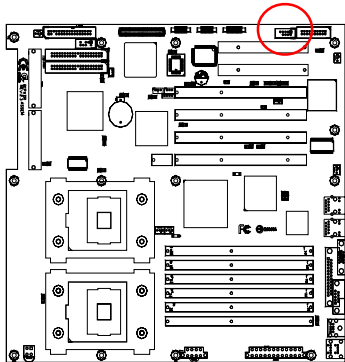
Pin No.	Definition
1	NDCDB
2	NSINB
3	NSOUTB
4	NDTRB
5	GND
6	NDSRB-
7	NRTSB-
8	NCTSB-
9	NRIB-
10	NC

E/F) SCSI1/2 Connector

SCSI 1

SCSI 2
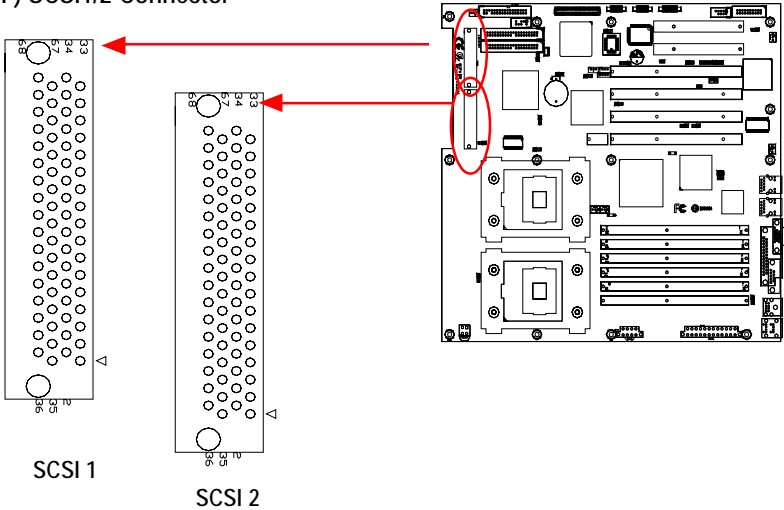
I/J) IDE1/IDE2 [IDE1 / IDE2 Connector(Primary/Secondary)]

IDE2   1
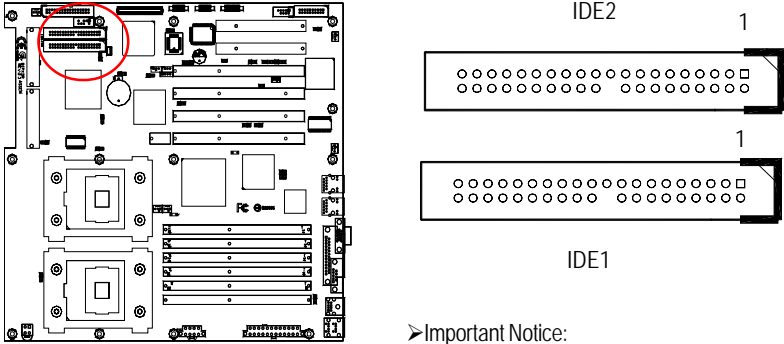
IDE1

➢Important Notice:
  Please connect first harddisk to IDE1
  and connect CDROM to IDE2.The red stripe of
  the ribbon cable must be the same side with the
  Pin1.

G) FDD1 (Floppy Connector)


```
1                           33



2            Floppy         34
```
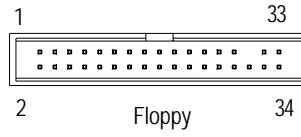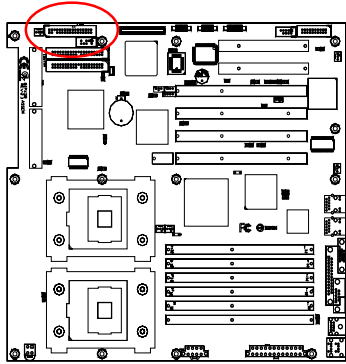
M) CASE OPEN
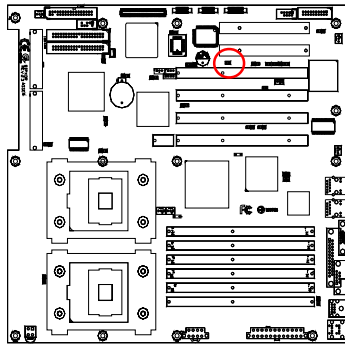
Pin No.	Definition
1	Signal
2	GND

N) J20 (Front Panel Connector-- Power button and Power LED)

1

20
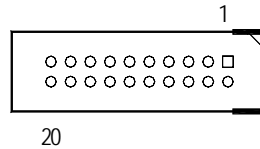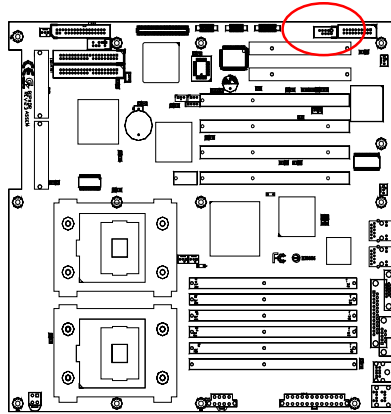
Pin No.	Definition
17	PWR LED+
18	PWR LED-
19	PWR BTN+
20	PWR BTN-

H) USB1 (Front USB Connector)

1
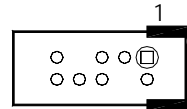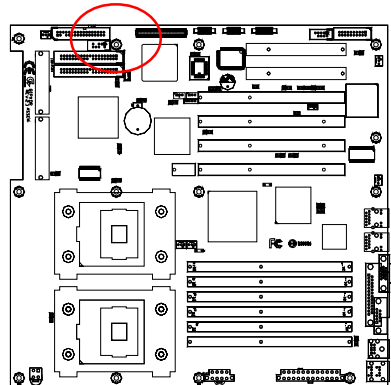
Pin No.	Definition
1	Power
2	GND
3	USBD2-
4	NC
5	USBD2+
6	USBD3+
7	NC
8	USBD3-
9	GND
10	Power

NOTE 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.

K) IPMI_CON (IPMI Connector)
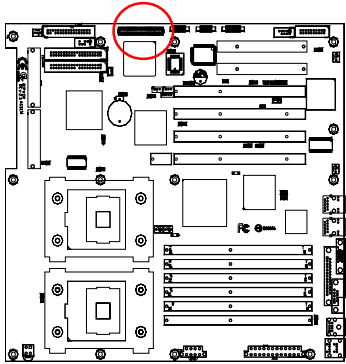
➢IPMI module is an optional device for customer to purchase.

➢For the IPMI connector pins definition, please refer to **Appendix G.**
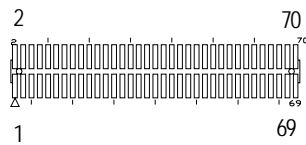
D) BT1 (Battery)
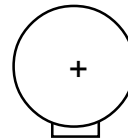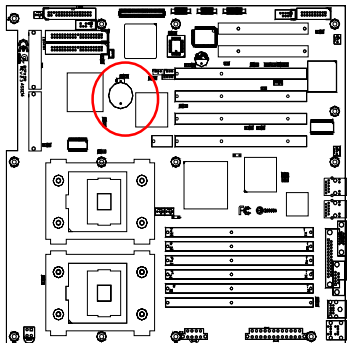
CAUTION

❖ 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_PANEL connector
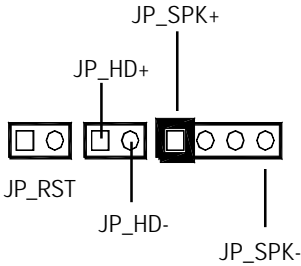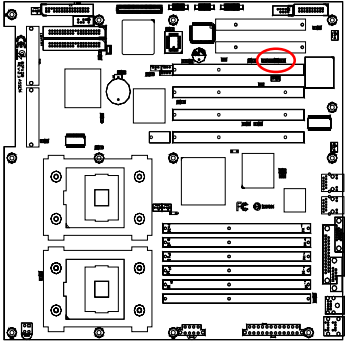
JP_RST (Reset Button)	Open: Normal Operation
	Close: Reset hardware system
JP_HD (HDD Active LED)	Pin 1: LED anode(+)
	Pin 2: LED cathode(-)
JP_SPK (Speaker Connector)	Pin 1: VCC(+)
	Pin 2- Pin 3: NC
	Pin 4: Data(-)

Step 4-3: Jumper Setting Introduction
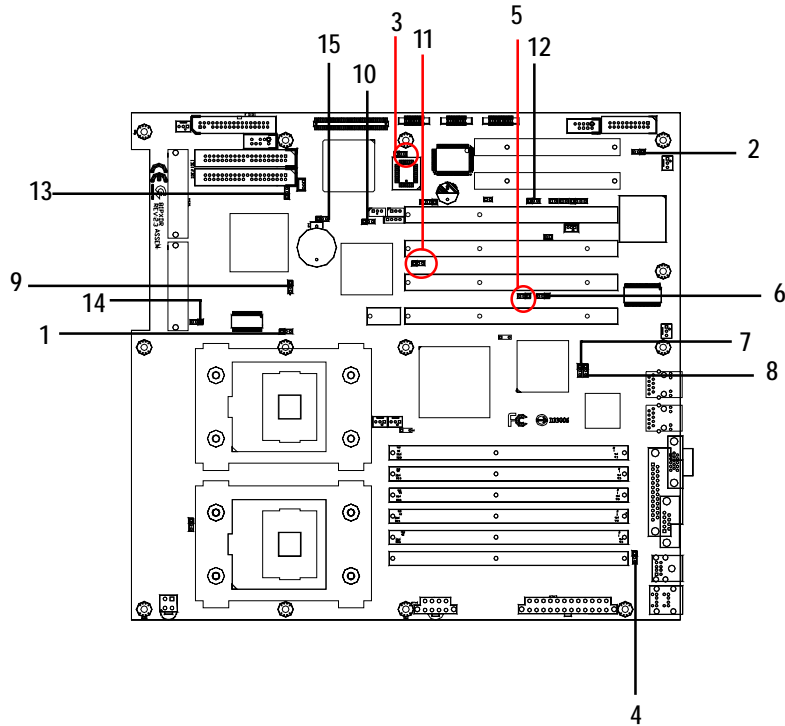
1) JP 1	9) JP 17
2) JP 8	10) JP 18
3) JP 9	11) JP 19
4) JP 10	12) JP 20
5) JP 13	13) JP 21
6) JP 14	14) JP 22
7) JP 15	15) CLR_COMS
8) JP 16	

1) **JP 1 (Onboard SCSI Function)**
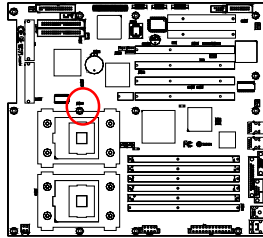
1 ▦ 1-2 close: SCSI Enabled (Default)

1 ▦ 2-3 close: SCSI Disabled

2) **JP 8 (Onboard VGA Functon)**
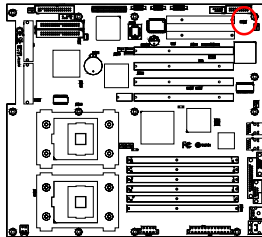
1 ▦ 1-2 close: VGA Enabled (Default)

1 ▦ 2-3 close: VGA Disabled

3) **JP 9 (Front Side USB Wake Up Function)**
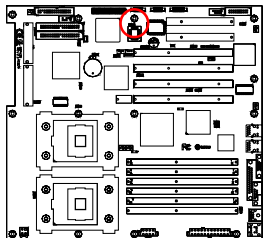
1 ▦ 1-2 close: Front USB wake up
function disabled (Default)

1 ▦ 2-3 close: Front USB wake up
function enabled

4) JP 10 (Rear Side USB Wake Up Function)
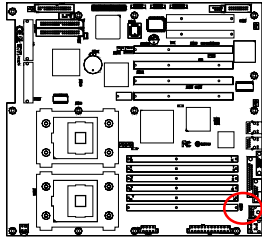
1 ▯ 1-2 close: Rear USB wake up
    function disabled (Default)

1 ▯ 2-3 close: Rear USB wake up
    function enabled

5 / 6) JP13 / JP14 (P64H2#1 Primary PCI-X max Bus Frequency Function)
For PCI-X_1

1
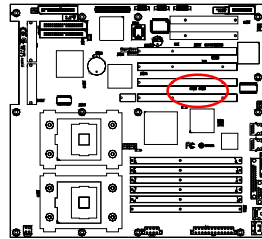
JP13 ▯▯▯ JP13 : JP14 = 1-2 closed ; 1-2 closed
JP14 ▯▯▯ ==>Set the Primary PCI-X
      max Bus frequency at 133MHz
      (Default)

1

JP13 ▯▯▯ JP13 : JP14 = 1-2 closed ; 2-3 closed
JP14 ▯▯▯ ==>Set the Primary PCI-X
      max Bus frequency at 100MHz

1

JP13 ▯▯▯ JP13 : JP14 = 2-3 closed ; Open
JP14 ▯▯▯ ==>The Primary PCI-X max Bus
      frequency will stay at 66MHz

7 / 8) JP15 / JP16 (P64H2#1 Secondary PCI-X max Bus Frequency Selection)

For Giagbit LAN U6

1
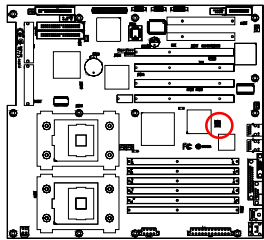
JP15

JP16

JP15 : JP16 = 1-2 closed ; 1-2 closed
==>Set the Secondary PCI-X
max Bus frequency at 133MHz
(Default)

1

JP15

JP16

JP15 : JP16 = 1-2 closed ; 2-3 closed
==>Set the Secondary PCI-X
max Bus frequency at 100MHz

1

JP15

JP16

JP15 : JP16 = 2-3 closed ; Open
==>The Secondary PCI-X max Bus
frequency will stay at 66MHz

9 / 10) JP17 / JP18 (P64H2#2 Primary PCI-X max Bus Frequency Selection)

For PCI-X_3 / U320 SCSI

1
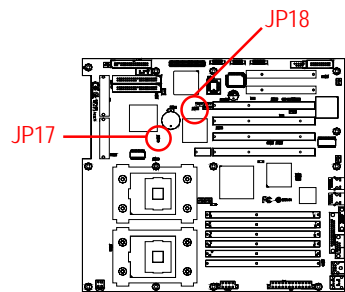
JP18

JP17

JP18 : JP17 = 1-2 closed ; 1-2 closed
==>Set the Primary PCI-X
max Bus frequency at 133MHz
(Default)

1

JP18

JP17

JP18 : JP17 = 1-2 closed ; 2-3 closed
==>Set the Primary PCI-X
max Bus frequency at 100MHz

11 / 12) JP19 / JP20 (P64H2#2 Secondary PCI-X max Bus Frequency Selection)

For PCI-X_2 and PCI-X_4
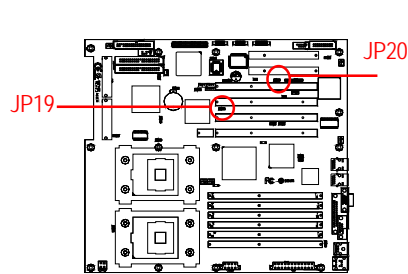
JP20 : JP19 = 1-2 closed ; 1-2 closed
==>Set the Secondary PCI-X
max Bus frequency at 133MHz
(Default)

JP20 : JP19 = 1-2 closed ; 2-3 closed
==>Set the Secondary PCI-X
max Bus frequency at 100MHz

JP20 : JP19 = 2-3 closed ; Open
==>The Secondary PCI-X max Bus
frequency will stay at 66MHz

13) JP21 (On Board SCSI Channel A Terminator Function)
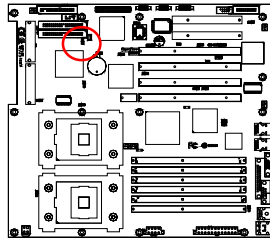
1-2 closed : Enable SCSI Channel A
terminator (Default)

2-3 closed : SCSI Channel A
terminator set by the controller
automatically

14) JP22 (On Board SCSI Channel B Terminator Function)
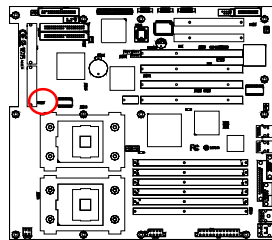
1-2 closed : Enable SCSI Channel B
terminator (Default)

2-3 closed : SCSI Channel B
terminator set by the controller
automatically

15) CLR_CMOS (Clear CMOS Function)
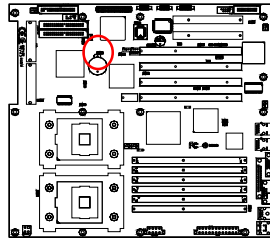
1 ▣▣▣ · 1-2 close: Clear CMOS

1 · ▣▣▣ 2-3 close: Normal (Default)

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

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.

ENTERINGSETUP

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

CONTROLKEYS

<↑>	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

GETTINGHELP

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.)

● **Security**

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

● **Boot**

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

● **Exit**

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

Main

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.

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit
System Date:	Jan 30 2002			[Setup Help]
System Time:	[00:13:12]			
Floppy Drive A:	1.44MB 3$^{1/2}$			
Floppy Drive B:	Not Installed			
▶ Primary IDE Master	CD-540E			
▶ Primary IDE Slave	Not Installed			
▶ Secondary IDE Master	ST380021A			
▶ Secondary IDE Slave	Not Installed			
▶ System Information				

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 1: Main

☞ **System Date**

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

☞ **System Time**

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

☞ Floppy Drive A/B

This category identifies the type of floppy disk drive A or drive B that have been installed in the computer.

    ▸ None   No floppy drive installed

    ▸ 1.2MB, 3.5 in.   3.5 inch AT-type high-density drive; 1.2M byte capacity

    ▸ 720K, 3.5 in.   3.5 inch double-sided drive; 720K byte capacity

    ▸ 1.44M, 3.5 in.   3.5 inch double-sided drive; 1.44M byte capacity.

    ▸ 2.88M, 3.5 in.   3.5 inch double-sided drive; 2.88M byte capacity.

☞ IDE Primary Master, Slave / 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.

    TYPE

    ▸ 1-46:   Predefined types.

    ▸ Users: Set parameters by User.

    ▸ Auto: Set parameters automatically. (Default Vaules)

    ▸ CD/DVD: Use for ATAPI CD/DVD-ROM drives.

    ▸ ARMD: Use for ATAPI Removable Media Device.

    ▸ Cylinders   Number of cylinders

    ▸ Write Precompensation   Write precompensation

    ▸ SECTORS   Number of sectors

    ▸ Maximum Capacity   Maximum Capacity

    ▸ LBA Mode   This field shows if the device type in the specific IDE channel support LBA Mode

    ▸ Block Mode   This field only shows the information of Block Mode.

⯈ Fast Programmed I/O Mode	This field only shows the information of Fast Programmed I/O Mode.
⯈ 32 Bit Transfer Mode	Enables 32 bit access to maximize the hard disk data transfer rate.
	Option: On (Default Value); Off

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

☞ **System Information**

This category displays the following system information: **the Processor type**, **Speed**, **Cache Size**, **Total Memory Size**, **Memory Resized DIMM**, **BIOS version**, **BIOS Release Date** and **System Product Name**.

Advanced

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

[Setup Help]

▶ Advanced Configuration

▶ Chipset Configuration

▶ Power Management Configuration

▶ PCI-X Configuration

▶Peripheral Configuration

▶Hardware Monitor Configuration

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit
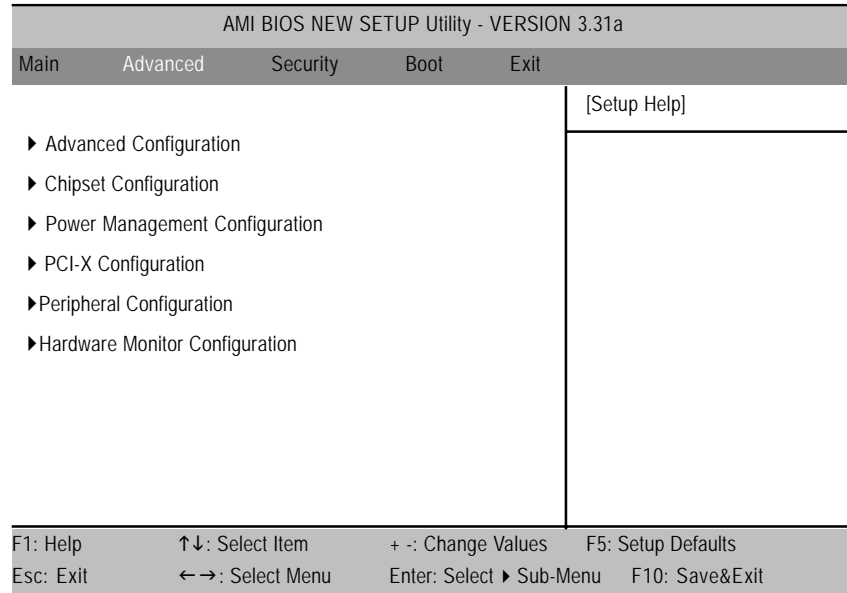
Figure 2: Advanced

♦ **About This Section: Advanced**

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

☛ Advanced Configuration
☛ Chipset Configuration
☛ Power Management Configuration
☛ PCI-X Configuration
☛ Peripheral Configuration
☛ Hardware Monitor 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 security, etc.

Advanced Configuration

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

Advanced Configuration		[Setup Help]
Quick Boot	Disabled	
MPS Version for O.S	1.4	
Console Redirect	Disabled	
※ C.R Baud Rate	19200	
※ C.R after Post	Disabled	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-1: Advanced Configuration

☞ **Advanced Configuration**

▶ Quick Boot

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

▶▶Enabled   Set this option "Enable" to permit BIOS to skip certain tests while booting. (Default Value)

▶▶Disabled   Disable this function.

The   ※   indicates DISPLAY ONLY

NOTE

▶ **MPS Version for O.S**

This option allows a user to select MP (Multi Processors) system supported version.

Note: Some old MPS OS support 1.1 version only.

▸▸ 1.4   Support MPS Version 1.4 . (Default Value)

▸▸ 1.1   Support MPS Version 1.1.

▶ **Console Redirect**

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

Note: If user wants to apply this function, please press 'F4' than 'DEL'.

▸▸ COMA/COMB   User can either select COMA or COMB to enable the console
                                redirect function. When the COM port is determined, users can
                                adjust the items for **C.R Baud Rate** and the **C.R after Post**.

▸▸ Disabled   Disable this function.(Default Value)

Chipset Configuration

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

Chipset Configuration		[Setup Help]
ClkGen Spread Spectrum	Disabled	
Hyper Threading	Disabled	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-2: Chipset Configuration

☞ **Chipset Configuration**

▶ **ClkGen Spread Spectrum**

➵ Enabled   Enable ClkGen Spread Spectrum

➵ Disabled   Disable this function. (Default Value)

▶ **Hyper Threading**

Hyper-Threading Technology can provide an immediate performance boost in multi-tasking Enabling Hyper-Threading Technology requires a computer system with an Intel Pentium 4 processor at 3.06 GHz or higher, a chipset and BIOS that utilize this technology, and an operating system that includes optimizations for this technology. Performance will vary depending on the specific hardware and software you use.environments and while using multi-threaded applications.

➵ Enabled   Enable Intel Hyper Threading.

➵ Disabled   Disable Inel Hyper Threading. (Default Value)

Power Management Configuration

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

Power Management Configuration	[Setup Help]
System After AC Back Last State	
PME Event Wake Up Enabled	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-3: Power Management Configuration

☞ **Power Management Configuration**

The Power Management Configuration allows you to reduce system power consumption through different saving power methods for various devices.

▶ System After AC Back

▸ On State System power state when AC cord is re-plugged.

▸ Off State Do not power on system when AC power is back.

▸ Last State Set system to the last sate when AC power is removed. Do not power on system when AC power is back. (Default Value)

▶ PME Event Wake Up

This option allow user to wake up system from the PME device.

▸ Enabled Enable PME Event Wake Up (Default Value)

▸ Disabled Disable this function.

45

PCI-X Configuration

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

PCI-X Configuration		[Setup Help]
Data Parity Error Recovery	Enabled	
Relaxed Ordering	Enabled	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-4: PCI-X Configuration

☞ **PCI-X Configuration**

▶ **Data Parity Error Recovery**

▸ Enabled   Select "Enabled" to active PCI-X data parity error recovery. (Default Value)

▸ Disabled   Disable this function.

▶ **Relaxed Ordering**

▸ Enabled   Select "Enabled" to active relaxed ordering. (Default Value)

▸ Disabled   Disable this function.

Peripheral Configuration

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

Peripheral Configuration		[Setup Help]
OnBoard IDE	Both	
OnBoard FDC	Enabled	
Onboard Serial Port A	3F8/COM1	
Onboard Serial Port B	2F8/COM2	
Onboard Parallel Port	378	
Parallel Port Mode	ECP	
Parallel Port IRQ	7	
Parallel Port DMA	3	
USB Function	Enabled	
USB Legacy Support	Disabled	
OnBoard Gigabit LAN	Enabled	
OnBoard SCSI	Enabled	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-5: Peripheral Configuration

☞ **Peripheral Configuration**

   ▶ OnBoard IDE

   ▸ Option: Both (Default Value), Primary, Secondary, Disabled

   ▶ OnBoard FDC

   ▸ Enabled   Select "Enabled" to active Onboard Floppy Controller. (Default Value)

   ▸ Disabled   Disable this function.

▶ OnBoard Serial Port A

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

➤ 3F8/COM1   Enable onboard serial port A and set I/O address to 3F8/COM1. (Default value)

➤ 2F8/COM2   Enable onboard serial port A and set I/O address to 2F8/COM2.

➤ 3E8/COM3   Enable onboard serial port A and set I/O address to 3E8/COM3.

➤ 2E8/COM4   Enable onboard serial port A and set I/O address to 2E8/COM4.

▶ OnBoard Serial Port B

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

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

➤ 3F8/COM1   Enable onboard serial port A and set I/O address to 3F8/COM1.

➤ 2F8/COM2   Enable onboard serial port A and set I/O address to 2F8/COM2. (Default value)

➤ 3E8/COM3   Enable onboard serial port A and set I/O address to 3E8/COM3.

➤ 2E8/COM4   Enable onboard serial port A and set I/O address to 2E8/COM4.

▶ OnBoard Parallel Port

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

➤ 378   Enable onboard LPT port and set I/O address to 378. (Default value)

➤ 278   Enable onboard LPT port and set I/O address to 278

➤ 3BC   Enable onboard LPT port and set I/O address to 3BC

▶ Parallel Port Mode

This option specifies the parallel mode.

▶▶ **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. (Default value)

▶ Parallel Port IRQ

This option is to select Parallel Port IRQ

▶▶ Option: 7 (Default Value) , 5

▶ Parallel Port DMA

This option iallows user to select Parallel Port DMA.

▶▶ Option: 3 (Default Value) , 1

▶ USB Function

This option allows user to enable USB host controller.

▶▶ Enable   Enable USB host controller (Default Value)

▶▶ Disabled   Disable this function.

▶ USB Legacy Support

This option allows user to function support for legacy USB.

▶▶ Enabled   Enables support for legacy USB

▶▶ Disabled   Disables support for legacy USB (Default Value)

▶ **OnBoard Gigabit LANs**

This option allows user to function onboard Gigabit LANs.

▶ Enable   Enables onboard Gigabit LANs. (Default Value)

▶ Disabled   Disable this function.

▶ **OnBoard SCSI**

This option allows user to function onboard SCSI controller.

▶ Enable   Enable onboard SCSI. (Default Value)

▶ Disabled   Disable this function.

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

Hardware Configuration		[Setup Help]
Reset Case Open Status	No	
CPU Fan Fail Alarm	Disabled	
CPU Voltage Fail Alarm	Disabled	
CPU Warning Temperature	Disabled	
Case Status	Open	
※CPU0 Fan Temperature	38^0C/100^0F	
※CPU1 Fan Temperature	30^0C/86^0F	
※System Current Temperature	30^0C/86^0F	
※CPU0 FAN	RPM	
※CPU1 FAN	RPM	
※System FAN1	RPM	
※Power FAN1	RPM	
※Power FAN2	RPM	
※Vcore	1.429V	
※VCC1.8	1.805V	
※VCC3	3.342V	
※VCC2.5	2.550V	
※+12V	11.984	
※VCC	4.983V	
※VBAT	2.962V	
※VBAT	2.962V	
※Vtt DDR	1.299V	

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 2-6: Hardware Monitor Configuration

NOTE The ※ indicates DISPLAY ONLY

☞ **Hardware Monitor Configuration**

This section provides the system hardware health information to user for reference.

▶ **Reset Case Open Status**

This function provides user to stop the case open warning beep. Once the case is opened, the system will rise waring alert.To stop the beep, user is required to enter the setup menu and rest the case open status to "Yes" option.

▶ **Case Status**

This item displays the status of system case.

▶ **CPU Fan Fail Alarm**

▸Disabled   CPU Fan Fail Warning Function Disabled. (Default value)

▸Enabled   CPU Fan Fail Warning Function Enabled.

▶ **CPU Vlotage Fail Alarm**

▸Disabled   CPU Voltage Fail Warning Function Disabled. (Default value)

▸Enabled   CPU Voltage Fail Warning Function Enabled.

▶ **CPU Warning Temperature**

▸70°C / 158°F   Monitor CPU0/1 Temp. at 70°C / 158°F.

▸80°C / 176°F   Monitor CPU0/1 Temp. at 80°C / 176°F

▸90°C / 194°F   Monitor CPU0/1 Temp. at 90°C / 194°F.

▸Disabled   Disabled this function.(Default value)

▶ **CPU 0 / 1 Fan Temperature**

This field only displlays the current CPU0/1 Fan temperature.

▶ **System Current Temperature**

This field only displlays the current system temperature.

▶ **CPU 0 / 1 FAN**

This field indicates the **RPM** (Ratio Per Minute) of current CPU 0/1 speed.

▶ **System FAN 1**

This field indicates the **RPM** (Ratio Per Minute) of current system 1 fan speed.

▶ **Power FAN 1/2**

This field indicates the **RPM** (Ratio Per Minute) of current power fan speed.

▶ **Vcore/ VCC 1..8 / VCC 3 / VCC 2..5 / VCC / +12V / VBAT/ Vtt DDR**

This field only displays the current CPU / System voltage.

Security

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

	[Setup Help]
Set Supervisor Password:	[Enter]
Set User Password:	[Enter]
Password Check	[Setup]

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 3: Security

❹ **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.

↷**Set Supervisor Password**

You can install and change this 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.

☞Set 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.

☞Password Check

▶ **Setup** will check password while invlolking setup. (Default Value)

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

Boot

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

[Setup Help]

Boot Device Priority

1st Floppy: 1.44 MB 3$^{1/2}$

2nd CD/DVD: C-540E

3rd IDE-0: Disabled

OnBoard LAN Boot ROM   Disabled

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit

Figure 4: 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 <Space> 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.

☞ 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 Value)

▸▸ ATAPI CDROM

▸▸Hard Disk

▸▸Disabled.

▶ The Choice for 2nd Boot Device:

▸▸Removable Device

▸▸ ATAPI CDROM (Default Value)

▸▸Hard Disk

▸▸Disabled.

▶ The Choice for 3rd Boot Device:

▸▸Removable Device

▸▸ ATAPI CDROM

▸▸Hard Disk

▸▸Disabled (Default Value)

▶ **OnBoard LAN Boot ROM**

▸▸Enabled   Enable OnBoard LAN Boot ROM.

▸▸Disabled   Disable this function. (Default Value)

Exit

AMI BIOS NEW SETUP Utility - VERSION 3.31a				
Main	Advanced	Security	Boot	Exit

[Setup Help]

Exit Saving Changes   [Enter]

Exit Discarding Changes   [Enter]

Load Defaul Settings   [Enter]

Load Original Values   [Enter]

F1: Help	↑↓: Select Item	+ -: Change Values	F5: Setup Defaults
Esc: Exit	←→: Select Menu	Enter: Select ▶ Sub-Menu	F10: Save&Exit
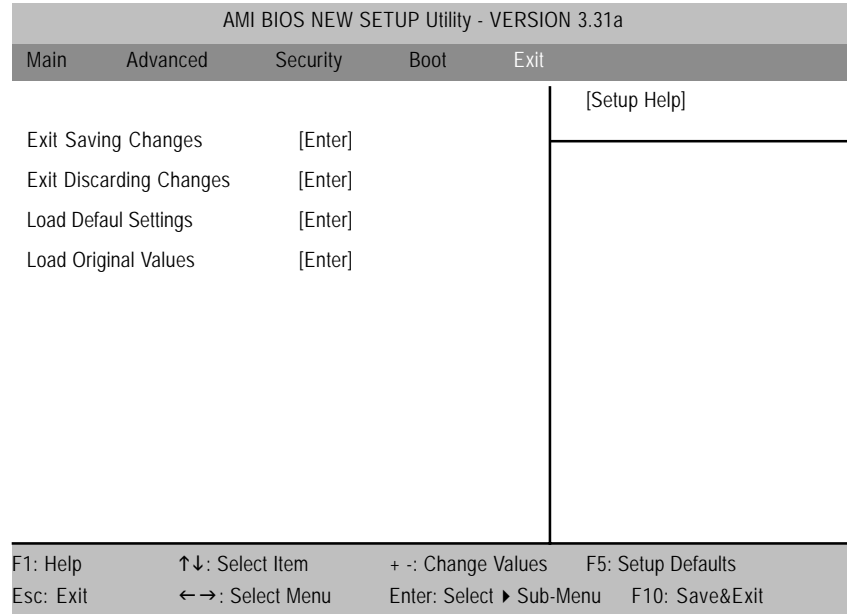
Figure 5: Exit

◢ **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 Default Settings**

       ☛ **Load Original Values**

☞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 Default Settings

Press <Enter> on this item to load the default values for all the setup options. Enable this function you will get a confirmation dialog box with a message as below:

Press [Enter] to continue

Or press [ESC] to Abort

Press [Enter] to load the default settings that are factory settings for default performance system operations.

☞Load Original Values

Press <Enter> on this item to discard changes without exiting setup. Enable this function you will get a confirmation dialog box with a message as below:

Press [Enter] to continue

Or press [ESC] to Abort

Press [Enter] to load the original values that are factory settings for factory original value system operations.

Chapter 4   Technical Reference

GA-8IPXDR-E System Block Diagram
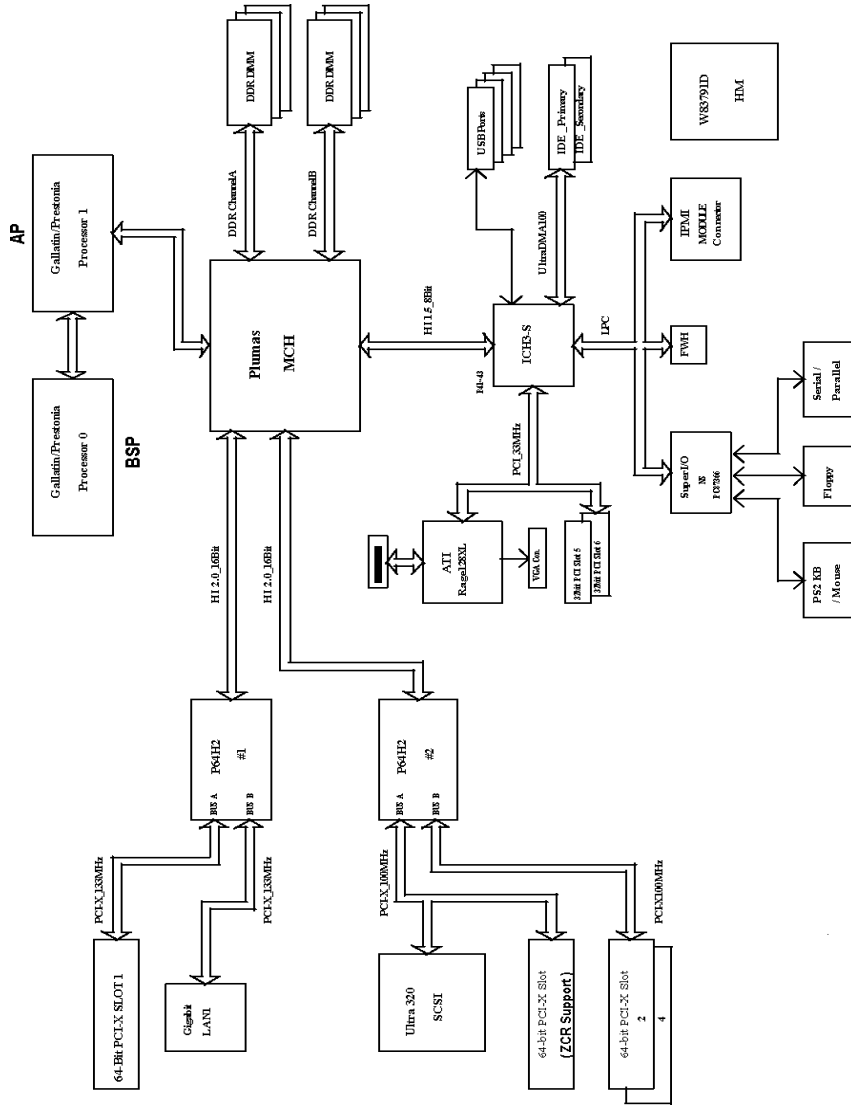
Chapter 5   Appendix

Appendix A: Intel Network Driver Installation
(Note: Driver CD Ver. : 2.0)

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver
CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the
CD-ROM device icon in "My computer", and execute the setup.exe.

1.Click "Intel Network Driver" item.

(1)

2.Click "Install Software" item.

(2)

3. Click Next" to process the installation.

(3)

4. Select "I accept the terms in the lincense aggrement and click "Yes".

(4)

5.Slect either **Typical** or **Custom** Setup type and click "Next".

6. Ready to install the program. Click "Install" to begin the installation.
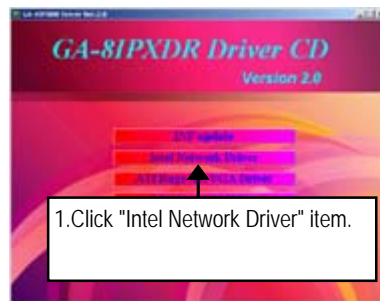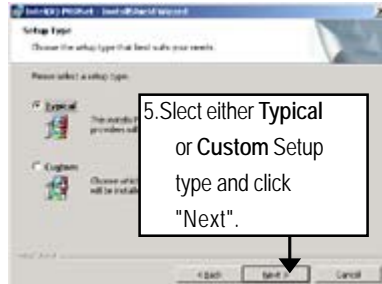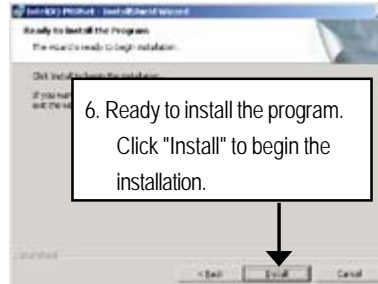
(5)   (6)

Step 5. Note that user can select either **Typical** or **Custom** Setup Types. **Typical** setup type allows users to install basic connectivity and the adapter management utility. **Custom** setup type embraces installing features and subfeatures user selects, including modern utilities, manage ment components and drivers. Recommended for advanced users.

Starting installation

8. Wizard completed. Click "Finish".
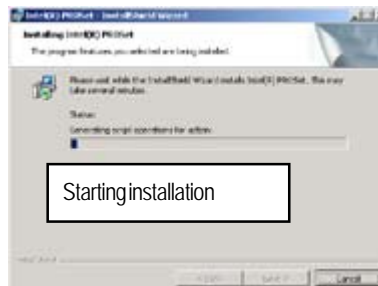
(7)   (8)

Appendix B: INF Update Installation (Driver for chipset)

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver
CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the
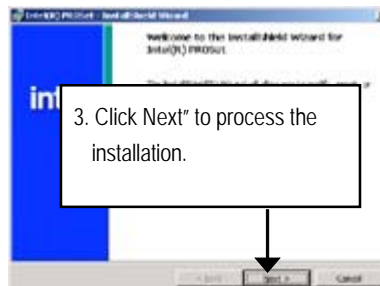CD-ROM device icon in "My computer", and execute the setup.exe.

(1)

(2)

(3)
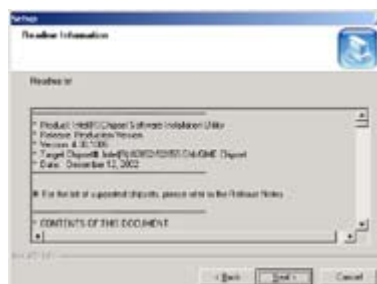
(4)
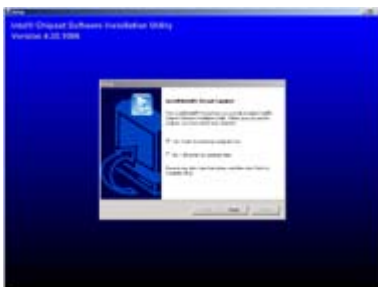
(5)

Appendix C: ATI Rage XL VGA Driver 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.

1.Click "ATI Rage XL VGA Driver" item.

(1)

2.Click "Next".

(2)

3.Click "Yes" at License Agreement window.

(3)

4. Select "Yes, I want to restart my computer" item and click "Finish" to restart computer.

(4)

Appexdix D: Adaptec SCSI Driver 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.
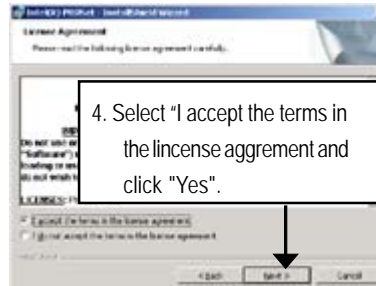

1. Click "Adaptec SCSI Driver" item.

(1)

2. A n exploer window will pops up. Click in the "SCSI 7902W" folder, the followed up screen will guide you to install the SCSI driver depends on the operating system.

(2)

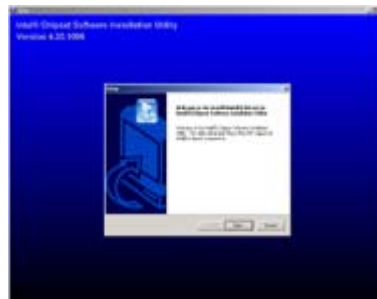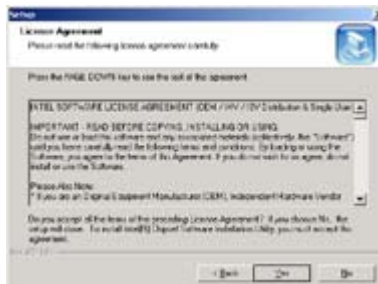## Appendix E: Utilites Installation

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.

The **Utilities** item contains the utility of **DirectX 9.0**, **Adabe Acrobate Reader V.5.0**, **GMT1.21** and **Norton Internet Security 2003**
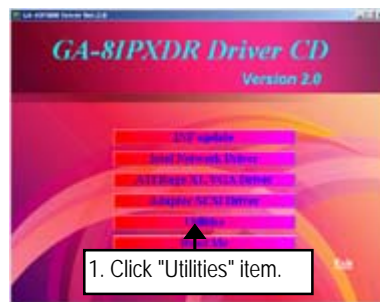
(1)

(2)

Appendix F: About Updateing Latest version of BIOS

To update the latest BIOS version, please go to Gigabyte Networking official web site:
Http://networking.gigabyte.com.tw

Appendix G: IPMI Connector Pin Definition

Pin	Definition	Pin	Definition
1	EMP Port ENABLE	36	POWER BUTTON OUT
2	5VSB	37	POWER BUTTON IN
3	SERIAL PORT	38	SYSTEM S5
4	SERIAL PORT	39	SERIAL PORT
5	SERIAL PORT	40	RESET BUTTON IN
6	SERIAL PORT	41	BUZZER STOP
7	POWER OK	42	GND
8	GND	43	CPU0 PRESENT
9	MAIN SMBUS DATA	44	CPU0 THER TRIP-
10	MAIN SMBUS CLK	45	CPU1 PRESENT
11	MAIN SMBUS ALERT	46	CPU1 THER TRIP-
12	P1 SMBUS ALERT	47	LPC LDRQ0
13	P1 SMBUS DATA	48	BMC BEEP
14	P1 SMBUS CLK	49	VCC3
15	AOL SMBUS DATA	50	VCC
16	AOL SMBUS CLK	51	BSP TRI-STATE
17	AOL SMBUS ALERT	52	ID BUTTON
18	IPMB SMBUS ALERT	53	AP TRI-STATE
19	IPMB SMBUS DATA	54	VGA FUSE
20	IPMB SMBUS CLK	55	KB/MS FUSE
21	GND	56	SCSI1 FUSE
22	BMC LPC CLOCK	57	USB1 FUSE
23	LPC FRAME	58	SCSI2 FUSE
24	GND	59	USB2 FUSE
25	LPC LAD3	60	GND
26	LPC LAD42	61	ALL ERROR LED
27	GND	62	BMC RESET OUT
28	LPC LAD1	63	HDD ERROR LED
29	LPC LAD0	64	POWER SUPPLY ERROR LED
30	3VSB	65	FAN ERROR LED
31	LPC RESET	66	SYSTEM POWER LED
32	SYSTEM NMI	67	SERIAL PORT
33	SERIAL IRQ	68	SERIAL PORT
34	GREEN OUTPUT	69	CPU0 IERR-SIGNAL
35	RESET BUTTON OUT	70	CPU1 IERR-SIGNAL

Appendix H: 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
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
ZCR	Zero Channel RAID

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:

_____

_____