IWILL® DK8EW

Hardware Installation Guide

Preface

Operation is subjected to the following two conditions

1. This device may not cause harmful interference

2. This device must accept any interference received, including interference that may cause undesired operation.

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Important

All product specifications are subject to change without prior notice. The actual specifications will

be according to the actual product.

FCC Compliance Statement

This equipment has been tested and found to comply with limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna

2. Move the equipment away from the receiver

3. Plug the equipment into an outlet on a circuit different from that to which the receiver is connected

4. Consult the dealer or an experienced radio/television technician for additional suggestions

You are cautioned that any change or modifications to the equipment not expressly approve by the party responsible for compliance could void your authority to operate such equipment.

This device complies with Part 15 of the FCC Rules.

CE Compliance Statement

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

Table of Content

Chapter 1 Getting Started

Congratulations on your purchase of the DK8EW workstation board. The DK8EW is based on the NVIDIA® nFORCE™ Professional 2200 MCP chipset supporting a dual AMD Opteron™ with Hypersport™ architecture. DK8EW provides dual PCI-Express x16 slots that the transfer speed can reach maximum 9GB/Sec.

The DK8EW server board supports up to eight memory DIMMs (four for each processor installed) accommodating up to 16GB of memory using registered PC3200/2700/2100 ECC DDR memory modules.

The DK8EW is designed for professional workstation field. In order to provide the best quality main board, DK8EW uses "digital VRM" components. Without any aluminum electrolytic capacitors is IWILL's best quality guarantee.

DK8EW supports NVIDIA SLI architecture. NVIDIA nFORCE4 offers blistering graphics performance with the ability to bridge two NVIDIA SLI ready PCI Express graphics cards.

Additional features such as onboard dual Broadcom® PCI-express Gigabit Ethernet controller and TI IEEE-1394 controller provide the highest system capabilities that meet a wide range of demanding workstation applications.

Getting Started

1-1 Packing list

Remove all items from the box and make sure you have these following items:

1.		DK8EW workstation Board
2.		The IWILL® DK8EW hardware installation guide (This Document)
3.		Power Installation CD Kit (including drivers and software)
4.		Two heatsink retention modules
5.		Rear panel I/O shield
6.		SATA cable+ SATA power cable
7.		Three jumper caps (Extra caps in case original caps get lost)
8.		ATA-66/100 IDE cable
9.		Floppy disk drive cable
10.		SLI bridge connector for connecting two graphic cards

If there are any missing parts, please contact your retailer immediately.

1-2 Operating Environmental Requirements

To ensure the reliability and performance of DK8EW Server System, please maintain the operating environment described below:

1. The ambient operating temperature is 0°C to 40°C

2. The relative humidity of operation is 10% to 85% non-condensing.

Leave your system in the shipping crate at its final destination for 24 hours in the environment where you will set it up. This is to prevent thermal shock and condensation. To minimize the chance of system failure, use the server board within the optimal temperature and humidity ranges as follow:

1. The optimize ambient temperature of operating is required as 21°C to 23°C

2. The optimize relative humidity of operating is 45% to 50% non-condensing.

1-3 Safe Notice

IWILL assumes the reader of this document is an experienced systems integrator. Please read our instruction while you are installing the system.

General Safety Precautions

- Keep the area around the Server clean and free of clutter.

- Servers weigh a lot. When lifting the system, two people should lift slowly from opposite ends with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.

- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.

- While working on the system, do not wear loose items such as neckties and unbuttoned shirtsleeves. They can come into contact with electrical circuits or get pulled into a cooling fan.

- Remove any jewelry or metal objects from your body, which are excellent metal conductors and can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

ESD Precautions

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Use a grounded wrist strap designed to prevent static discharge.

- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.

- Touch a grounded metal object before removing the board from the antistatic bag.

- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.

- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.

- When handling chips or modules, avoid touching their pins.

- Put the motherboard and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

Operating Precautions

- Check package contents

- Missing or damaging accessories

Please contact your vendor immediately

- Motherboard damage

Please contact your vendor immediately

- Prepare minimum system components

  At least one AMD Opteron^{TM} Processor

  At least one registered DDR memory module

  At least one SATA or IDE HDD

  EPS12V Power Supply

Chapter 2 Mainboard Overview

This chapter covers the below key points:

1. Mainboard layout
2. Rear IO layout
3. Internal IO connectors

    - IDE connector
    - Floppy connector
    - SATA connector
    - USB headers
    - IEEE-1394 headers
    - COM port

Mainboard Overview

2-1 DK8EW Layout
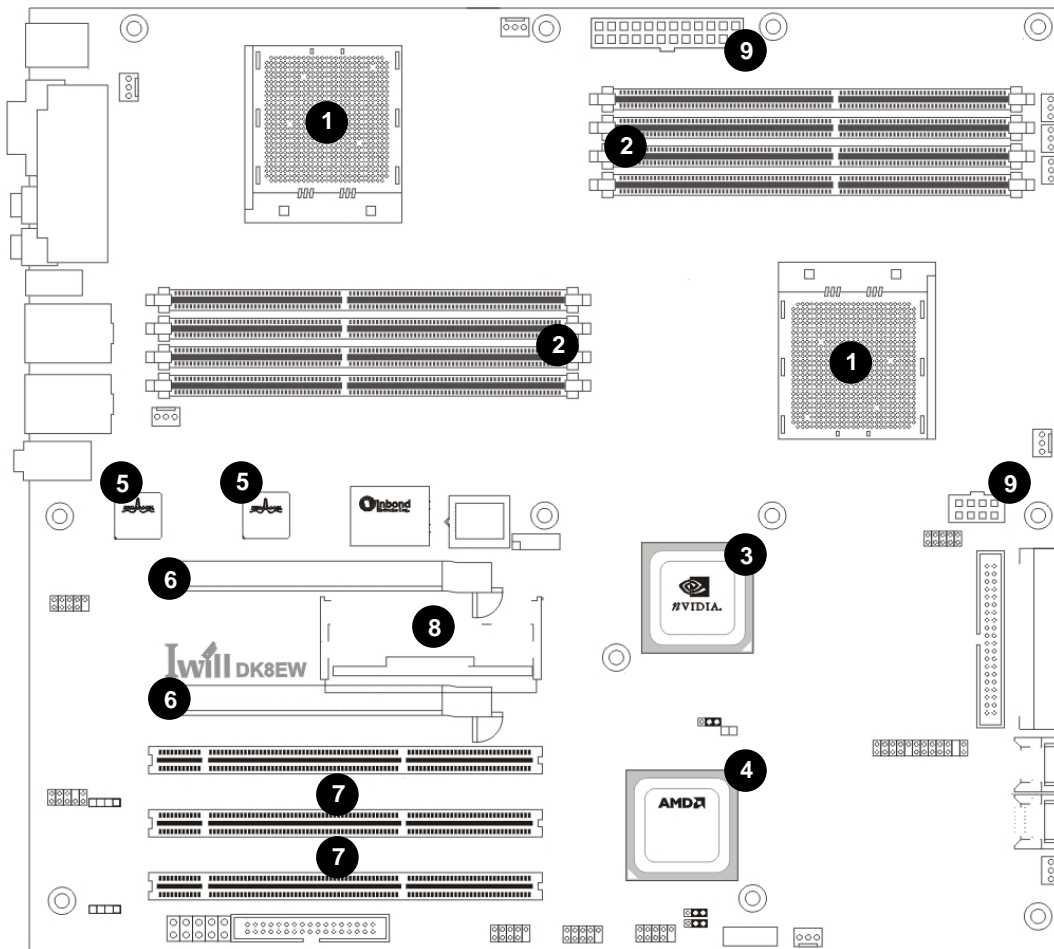
1	Dual AMD Opteron™ Socket 940 Processors	6	Dual PCI Express x16 slots
2	Dual Channel DDR400 Registered Memory Modules	7	PCI-X 64bits 64/100/133MHz
3	NVIDIA nForce™ Professional 2200 MCP	8	SLI Converter
4	AMD® 8131 PCI-X 1.0 Tunnel	9	EPS12V Power Connectors
5	Dual Broadcom® PCI Express GbE		

＊ This layout may differ from the actual product. All product specifications are subject to change without prior notice.

2-2 Rear Panel I/O Ports

This is an illustration of the Mainboard rear I/O port array
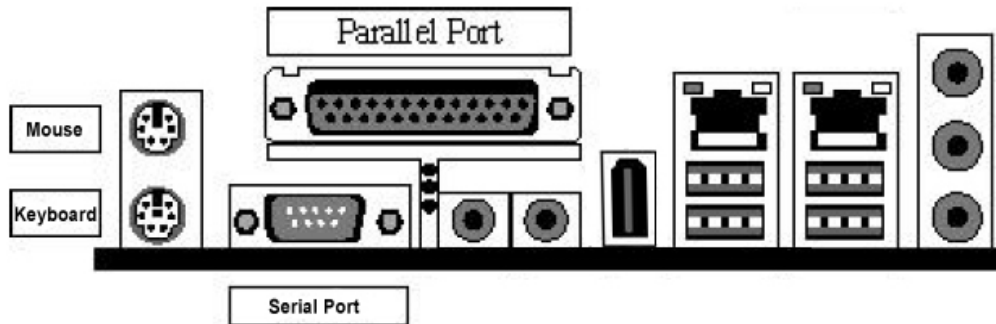
PS/2 Mouse Connector (6-pin Female)

The system will direct IRQ12 to the PS/2 mouse if one is detected. If no mouse is detected, IRQ12 will be free for expansion cards to use.

PS/2 Keyboard Connector (6-pin Female)

This connection is for standard keyboards using a PS/2 (mini DIN) plug. This connector will not accept standard AT size (large DIN) keyboard plugs. You may need a DIN to mini DIN adapter for standard AT keyboards.

Parallel Printer Connector (25-pin Female)

You can enable the parallel port and choose an IRQ through the BIOS. You can choose between ECP and EPP support through the BIOS setup.

Serial Port Function

The serial ports are RS-232C asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices. It can operate at speeds up to 115,200bps. You can configure the port's speed in the computer's Operating System.
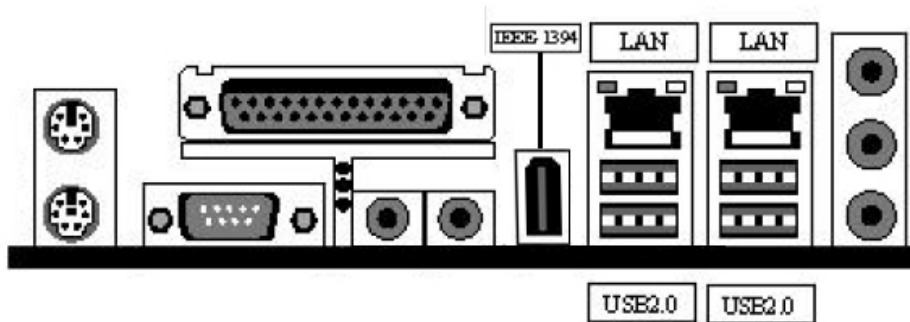
USB Port Function

DK8EW provides the four USB 2.0 ports at the rear panel. USB 2.0 supports 480Mb/second bandwidth providing a marked improvement in device transfer speeds between your computer and a wide range of simultaneously accessible external Plug and Play peripherals. You can connect or disconnect USB cables when the system is turned on.

IEEE 1394/ FireWire Connector (6-pin Male)

You have one (1) onboard IEEE 1394 connector port for connecting FireWire devices. Refer to IEEE 1394 Ports & Header for more information.

LAN Port Function

The LAN port uses a CAT 5 LAN cable for connecting the motherboard to a local area network by means of a network hub. The port has 2 indicator LEDs.

Speed LED (left)

• 10Mbps - will not blink

• 100Mbps - LED is green

• 1000Mbps - LED is orange

Link and Activity LED (right)

• LED is yellow when the LAN connection is linked and accessed.
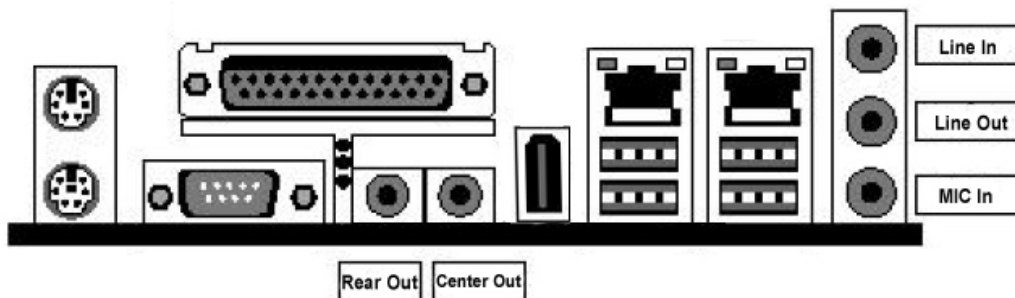
Rear Out Center Out

The interface is supported by the onboard RealTek ALC-655. It has 3 phone jacks for Speaker-Out, Microphone In, and Line-In. Besides; there are two phone jacks for Rear Out and Center Out, and a S/PDIF Out.

Port Color	Headset/2-Channel	4-Channel	6-Channel
Light Blue	Line In	Line In	Line In
Lime	Line Out (Front Channel)	Line Out (Front Channel)	Line Out (Front Channel)
Pink	Mic In	Mic In	Mic In
Black	no function	Line Out (Rear Channel)	Line Out (Rear Channel)
Orange	no function	no function	Line Out (Center Channel)

2-3 Internal IO connectors

2-3.1 Serial ATA II Connector

DK8EW supports up to 4 SATA devices each with data transfer rates of 300MB/s. Four Serial ATA ports are supported by nForce™ Professional 2200 MCP. This Mainboard features four Serial ATA ports for four Serial ATA devices. The speed of SATA II is double than the SATA devices. It uses point to point technology, and supports hot swap. This chipset also supports RAID 0, 1, and 10, which are defined as follows:

4x SATA ports
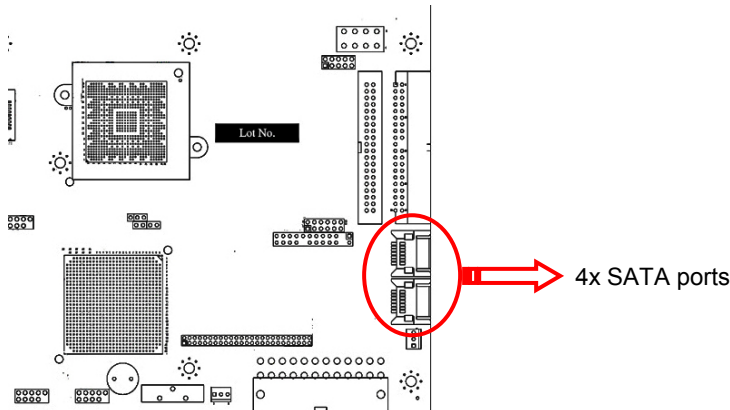
RAID Type	Description
RAID 0	Striping: high performance, designed to connect multiple drives to act as one
RAID 1	Mirroring: writes data to two drives at once in case one drive fails, the other one will be a complete replica and can continue on. Full fail-over
RAID 10	Combination of RAID 0 and 1: over 4 drives, The drives are split in half and striped together, and the 2 new striped drives are then mirrored.

7   1
Serial ATA Drive Connectors

SATA Pin assignments	
Pin	Description
1	GND
2	RXP
3	RXN
4	GND
5	TXN
6	TXP
7	GND

 Important

DK8EW supports special NVRAID utility. About NVRAID detail information and user's manual, please visit IWILL® website: www.iwill.net, or NVIDIA® website: www.nvidia.com

2-3.2 IDE and Floppy Connectors

The two 40-pin IDE connectors (primary and secondary channels) support 80-conductor IDE ribbon cables. Connect the single connector end to the Mainboard. Then, connect the two connectors at the other end to your IDE device(s). If you connect two hard disks to the same cable, you must set the second drive as a Slave through its jumper settings. Refer to the IDE device's documentation for the specific jumper settings. (Pin 20 is removed to prevent the connector from being inserted in the wrong orientation when using ribbon cables with pin 20 plugged in). The BIOS supports Ultra DMA 33/66/100.
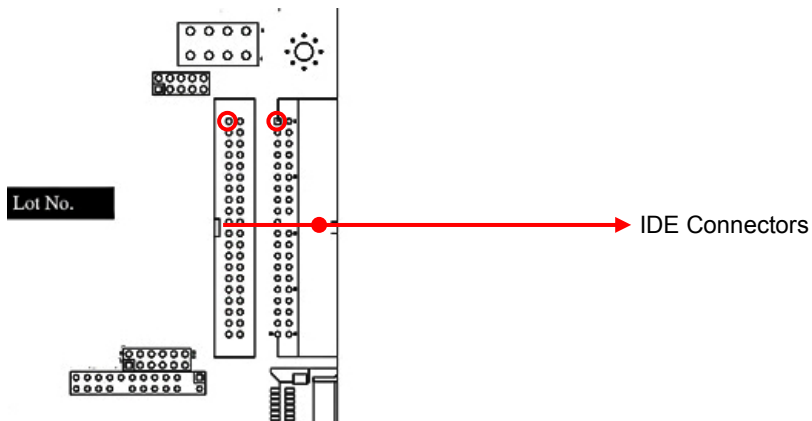
IDE Connectors

Important

Ribbon cables should always be connected with the red stripe on the Pin 1 side of the connector. IDE ribbon cables must be less than 46cm (18 inches) long, with the second drive connector no more than 15cm (6 inches) away from the first connector.

2-3.3 Floppy Disk Drive Connector

This 34-pin connector supports the standard floppy disk drive ribbon cable. Connect the single connector end to the Mainboard. Then, plug the other end of the ribbon into the floppy drive. Make sure you align the Pin 1 on the connector with the Pin 1 alignments on the Mainboard and the floppy drive.

Floppy Disk Drive Connector
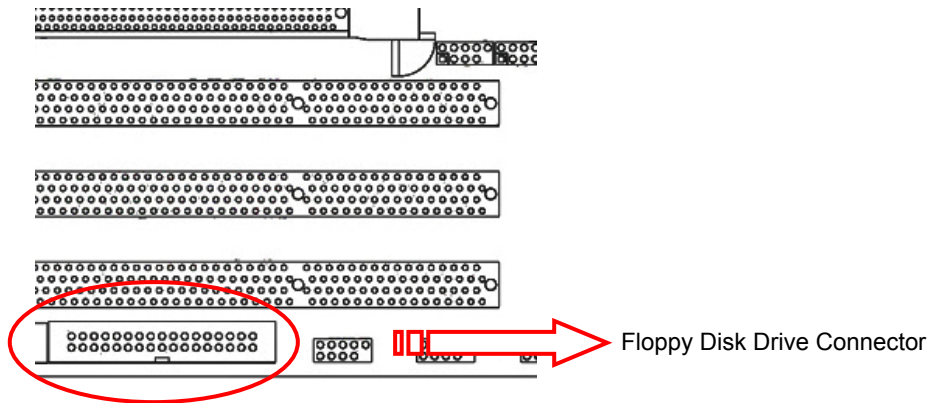
2-3.4 USB 2.0 Ports and Header -- J15, J135, J120

DK8EW supports USB 2.0 ports. USB 2.0 ports locate at the front and rear panel both. USB 2.0 supports transfer rates of up to 480MB/s.

USB 2.0 headers

VCC 0N0 0P0 GND GND

2   10

1   9

VCC 1N2 1P2 GND
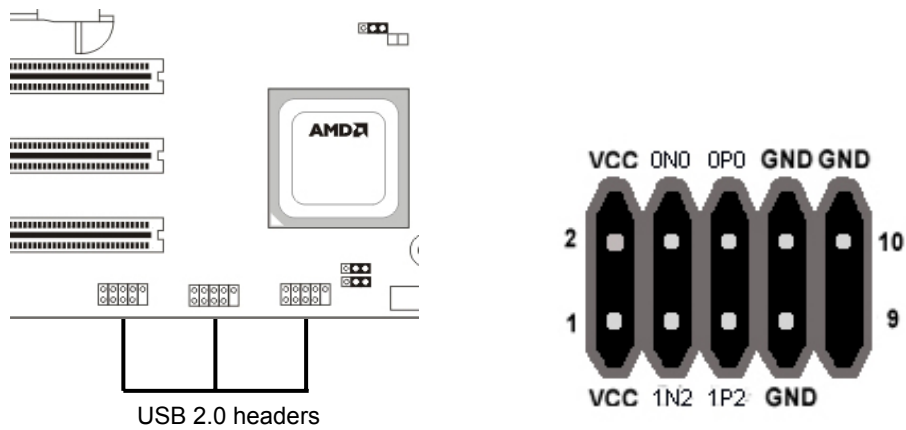
2-3.5 COM2 Header

The COM2 Port Bracket Connector lets you add an additional serial port, to which you can connect peripherals such as serial modems and pointing devices.
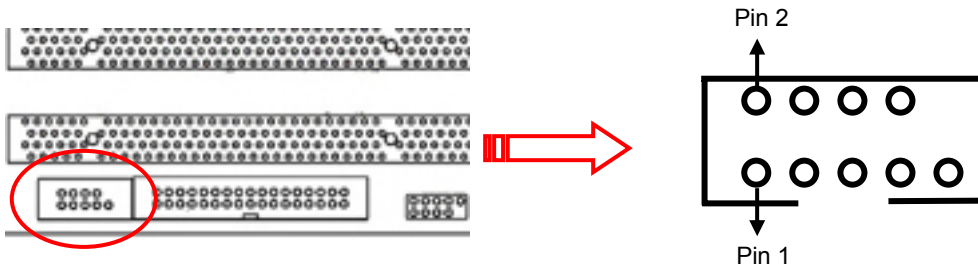
Pin1	DCD#	Pin2	RXD	
Pin3	TXD	Pin4	DTR#	
Pin5	CON	Pin6	DSR#	
Pin7	RTS#	Pin8	CTS#	
Pin9	RI#	Pin10	NC	

2-3.6 J132: IEEE 1394 (FireWire) Header

This mainboard features an integrated Texas Instrument TSB43AB22 chip which supports two IEEE 1394 (Firewire) ports. IEEE 1394 (FireWire) supports transfer rates of up to 400MB/s.
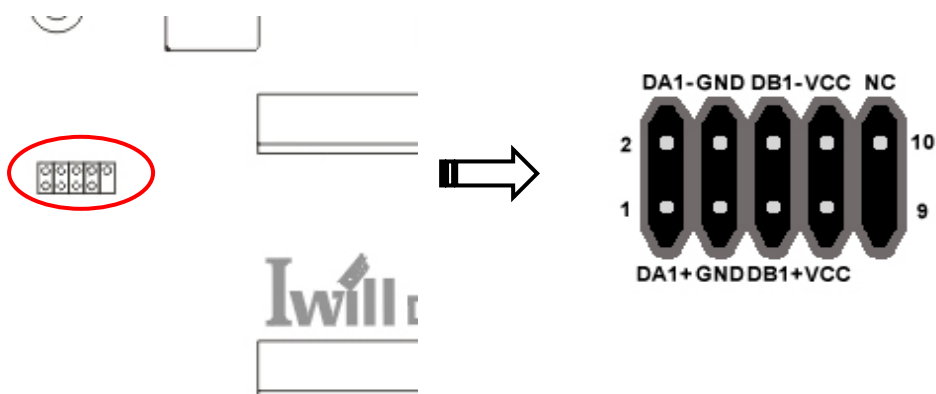
Chapter 3 Hardware Installation

This chapter covers the below key points:

1. Mainboard installation

2. Jumper setting

3. Heatsink and CPU installation

4. Memory installation

5. EPS Power 12V

6. CPU FAN

7. SLI converter Installation

8. Install expansion card

9. Power on your system

3-1 Mainboard Installation

This section explains the basic requirements for installing the motherboard in a system housing or "chassis". Since housing designs vary widely, you will need to consult the housing documentation for specific information.

To install the motherboard in a system housing, you will need to do the following:

• Install a rear panel I/O shield

• Attach the board to the housing

• Connect leads from the housing's front panel

• Connect other internal system components.

3-1.1 Motherboard Installation Procedure

The motherboard requires installing the supplied CPU Hat Spring to mount the heat sink retention mechanisms. Refer to the CPU Installation section in this chapter for details.

If the housing you are using normally stands vertically, place the open housing on its side before you start.

To install the motherboard, please follow the steps below.

1. Review any instructions that came with the system housing and prepare the necessary mounting hardware that came with it.

2. Identify the mounting holes on the motherboard and confirm that the housing has standoffs that match them.

3. Install the rear panel I/O shield in the housing's I/O panel opening.

4. Place the motherboard in the housing and align the mounting holes to the standoffs of the housing's motherboard mounting plate. Make sure all of the rear I/O ports are properly aligned with the openings of the I/O panel.

5. Secure the motherboard to the housing by inserting mounting screws in all the holes.

 Important

When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

3-1.2 Screw holes

Place twelve (12) screws into the holes indicated by

circles to secure the motherboard to the chassis.

Warning

Do not overtighten the screws! Doing so can damage

the motherboard.
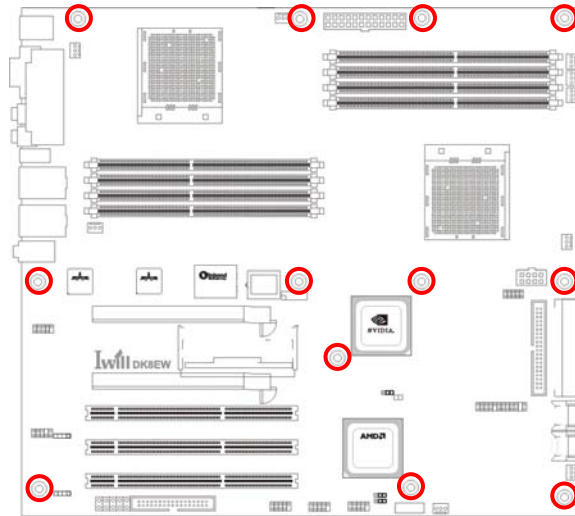
Place this side towards the rear of the chassis

3-2 Jumper Setting for Mainboard

This section covers the jumper setting. Refer to the following illustration for the location of the jumpers.
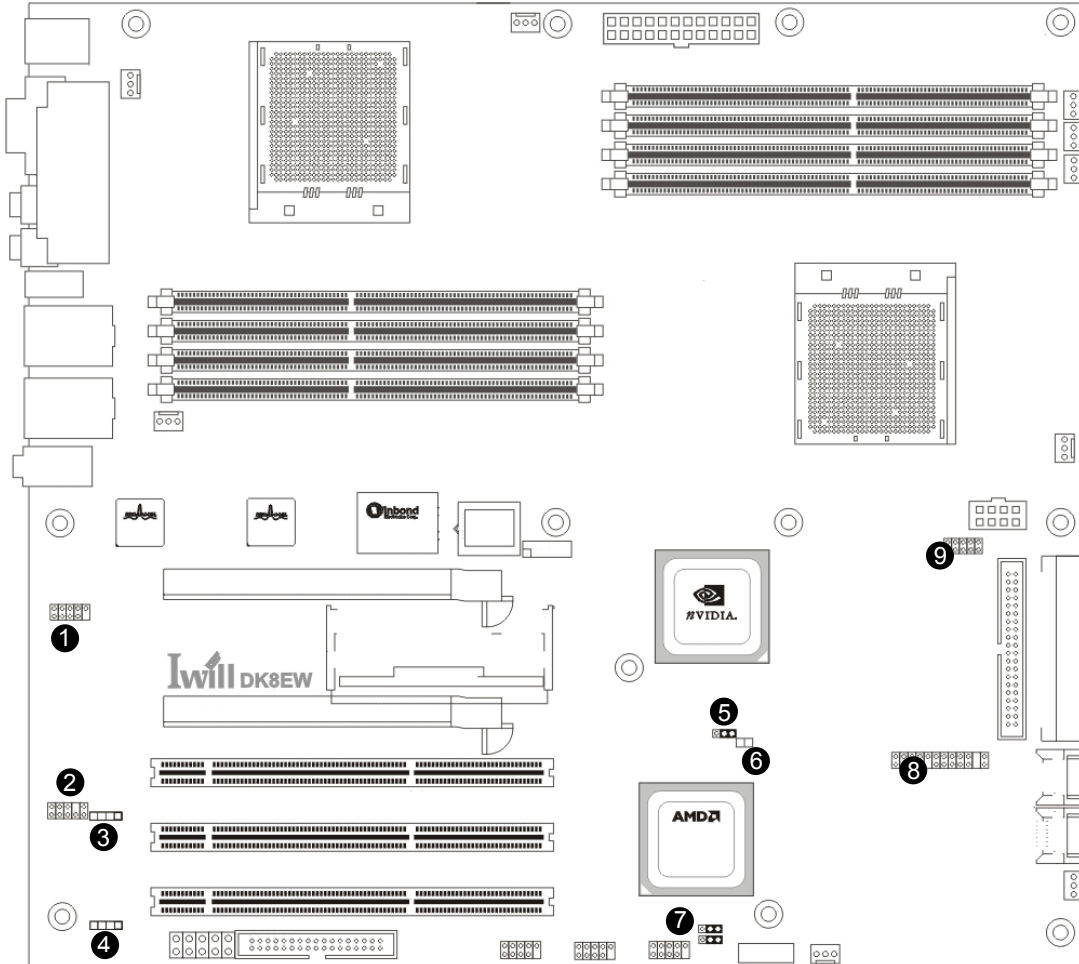
1	IEEE-1394 header (J132)	6	Case open pin header (CN814)
2	Audio connector (J143)	7	PCI-X switch jumper (JP3, JP4)
3	CD-IN header (J12)	8	Front panel switch header (CN48)
4	S/PDIF In/Out (J147)	9	LAN LED Header (J110)
5	Clear CMOS Header (JP1)		

3-2.1 CD In header

There is CD-In 4-pin connector to connect your internal sound devices to the Sound Card.

Audio Pin Assignments	
Pin	Description
1	Audio- L
2	Ground
3	Ground
4	Audio - R
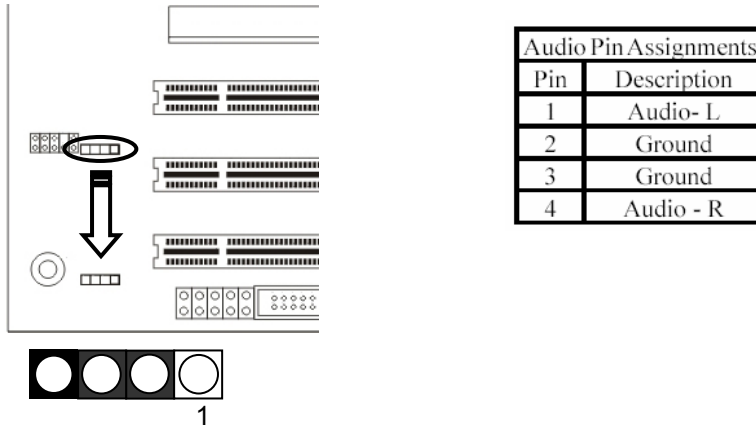
3-2.2 Audio Connector

There is no external output connector on the mainboard. Therefore, there is an audio connector on the left-down corner. You can connect the cable from this connector to the front or rear panel of chassis.
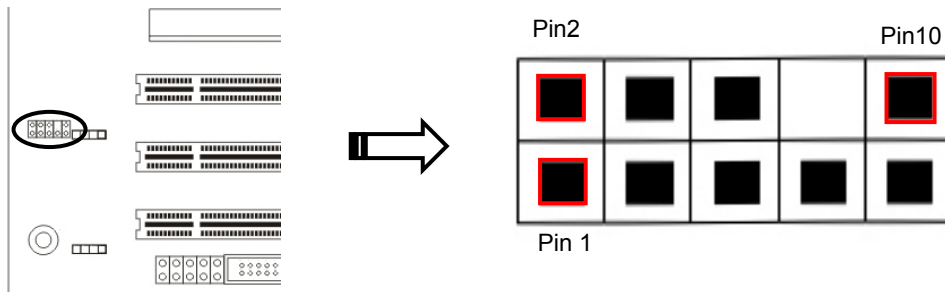
1	Audio VREF	2	GND
3	MIC In (Right)	4	VCC
5	Line Out (Right)	6	Line Out (Right)
7	MIC In (Left)	8	NC
9	Line Out (Left)	10	Line Out (Left)

3-2.3 S/PDIF header
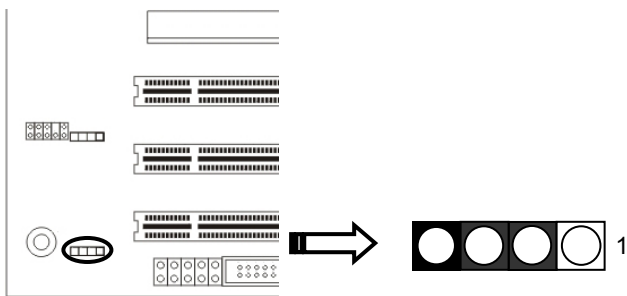
1	VCC	**3**	SPDIF IN
2	SPDIF OUT	**4**	GND

3-2.4 Clear CMOS Header

The onboard button cell battery powers the CMOS RAM. It contains all the BIOS setup information. Normally, it is necessary to keep the jumper connected to pin1 and pin2 (Default) to retain the RTC data as shown below.
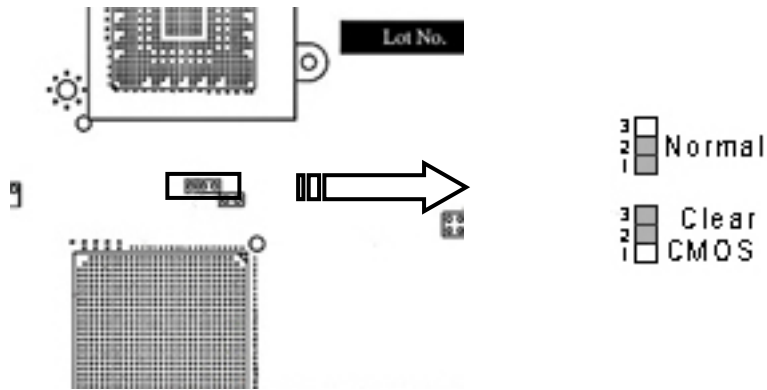
Follow these instructions to clear the CMOS RTC data:

1. AC off.

2. Short pin2 and pin3 with a jumper for a few seconds.

3. Replace the jumper on pin1 and pin2.

4. Turn on your computer by pressing the power-on button.

5. Hold down <Delete> during boot and select either the <Load Optimal Defaults> or <Load Failsafe Defaults> option in the selection "Exit". Then re-enter BIOS setup to re-enter user preferences. Refer to Chapter 4 BIOS SETUP for more information.

3-2.5 Case Open Pin Header

Case Open is a security function. This can detect whether the chassis (case) had been opened or not. If the case had been opened, the open record would show on the screen until you delete this message.

Setting	J42
Open	Disable
Close	Enable

1

3-2.6 PCI-X switch jumper

DK8EW provides three PCI-X slots. It could be divided into Channel A and B. **PCI-X 1 is the channel A; PCI-X 2 and 3 is the channel B**. By the jumper setting, the slots can be up to 133 MHz or down to 100MHz. However, if you use 64MHz expansion card, you would not need to adjust the jumpers. System will automatically slow down the speed.

PCI-X 3
PCI-X 2
PCI-X1
Channel B (JP4)
Channel A (JP3)
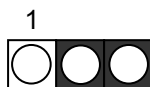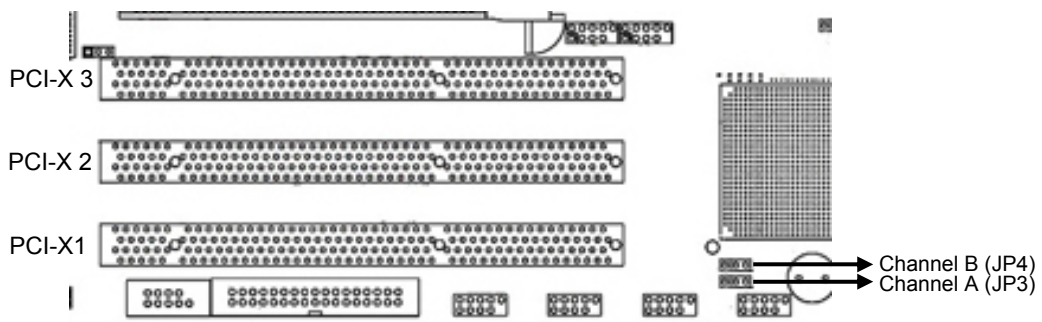
1

1-2	2-3
133MHz	100MHz

3-2.7 Front Panel Switch Header
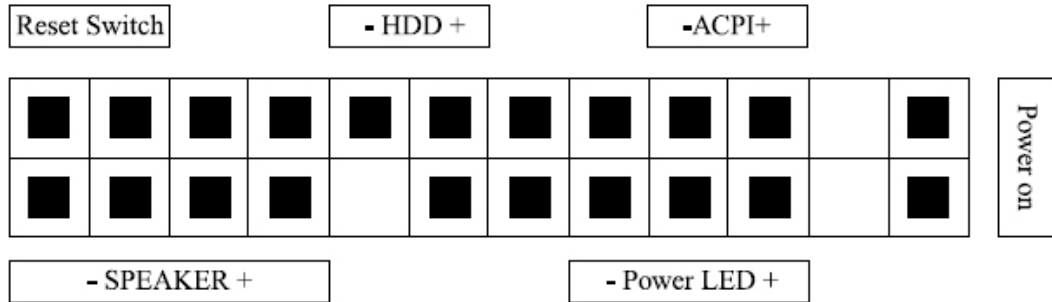
Reset Button (2-pin RST)

This 2-pin connector connects to the chassis-mounted reset switch for rebooting your computer without turning your power switch off and on. This is a preferred method of rebooting your system to prolong the life of your system's power supply.

Hard Disk Activity LED (2-pin HDD_LED)

This connector supplies power to the chassis's HDD/IDE activity LED. Read and Write activity by devices connected to the Primary or Secondary IDE connectors will cause the front panel LED to light up.

ACPI LED

ACPI function allows the system to enter or resume from the Suspend mode. If your system chassis does not have this button, the same function may be performed from your OS; if it is supported.

Power On Switch

This switch connects to the system's Power button allowing you to power on and off the system. You can configure the system to use the keyboard or mouse to power-on the system. You can also configure the system to respond to power restoration after a power outage occurs. These functions can be configured by making appropriate settings in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS.

Speaker Connector

This connects to the PC speaker installed in the system chassis.

Power LED Connector

This connector connects to the system's Power LED. When the system's power is on, this LED will light.

3-3 Heatsink and CPU Installation

System mainboard accommodates AMD Opteron^{TM} micro-PGA Socket 940 processors at 1600 MT (Mega Transfer per second). You must insert a CPU into CPU socket 0 (CPU0) first before installing one in CPU socket 1 (CPU1).
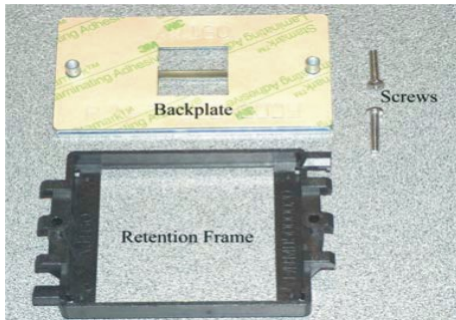
Step 1

1. Take proper electrostatic discharge precautions before handling motherboard or processor.
2. The heatsink and fan assembly shown in this picture may not exactly match the one provided by IWILL.
3. The AMD Opteron^{TM} processor heatsink requires the retention frame and the backplate to be attached to the motherboard. If the retention frame and backplate are already attached to the motherboard, proceed to step 7.
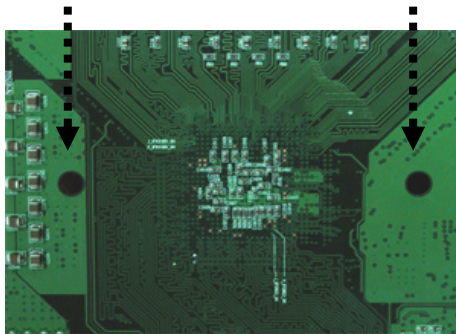
Step 2

1. Gently lift the motherboard by the edges over the backplate.
2. Align the backplate's two threaded standoffs with the two mounting holes near the socket.
3. Gently lower the motherboard until the standoffs fit through the holes in the motherboard and the backplate makes complete contact with the motherboard.

 Note

As with all computer equipment, the processor and motherboard components may be damaged by electrostatic discharge (ESD). Please take proper ESD precautions when handling any board.

 Warning

Do not apply voltage until the heatsink is fully installed. If voltage is applied before the heatsink is fully installed, the processor will overheat and failure will result. Read through the entire installation instructions completely to make sure you understand them before you begin.
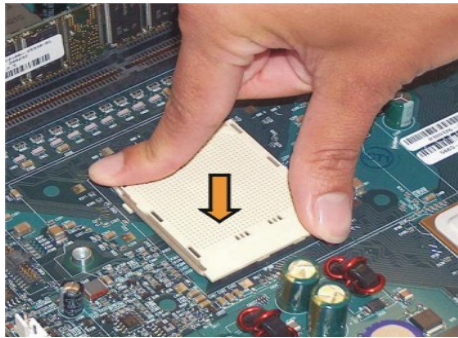
■ Press firmly on the socket to ensure proper contact of the backplate and motherboard.
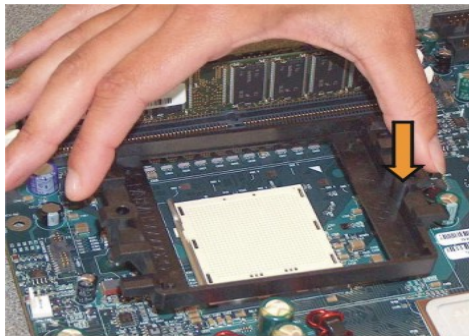
Step 4

■ Carefully place the retention frame on the motherboard.
■ The screw holes must align with the backplate standoffs.
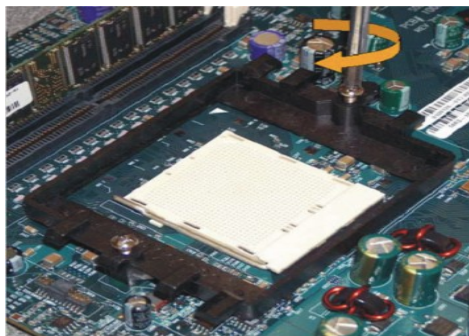
Step 5

1. Place the screws and tighten down the retention frame.
2. Do not over-tighten the screws.
3. Ensure that the retention frame is flat with the motherboard.
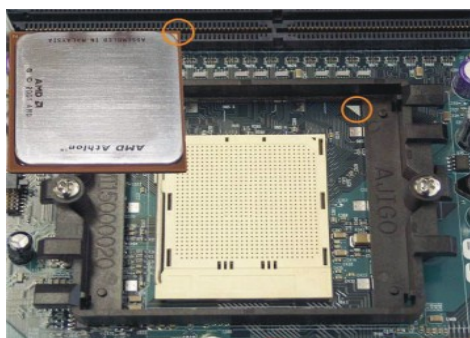
Step 6

1. The AMD Opteron™ processor will have a small triangle marking on one corner. This will correspond to the alignment on the motherboard.
2. To insert the processor, the socket locking lever must be raised (Pull out slightly, then lift up).
3. Gently place the processor into the socket. The corner with the triangle must be located near the marking on the motherboard.
4. Be careful not to bend the processor pins.
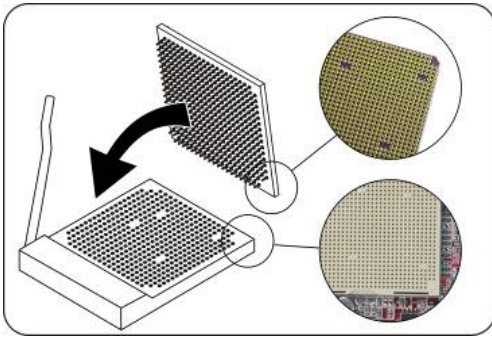
Step 7

- Gently push down on the processor while lowering the locking lever and latching it into the fully locked position.
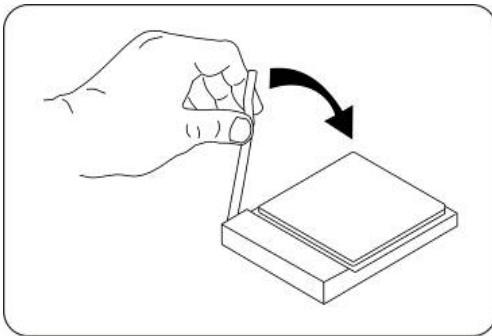
Step 8

- Do not apply any power (voltage) to the system until the heatsink is fully installed.
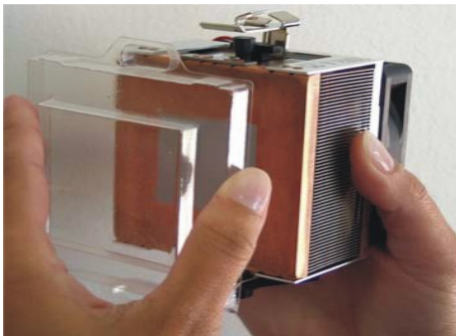
Step 9

1. The heatsink has a thermal interface material pre-applied on the bottom. This material is protected by a plastic cover.
2. Inspect the thermal interface material for scratches or gaps. Do not use if thermal material has scratches or gaps. If replacement thermal interface material is needed,
3. Remove plastic cover and discard. Be careful not to touch or scratch the thermal interface material.
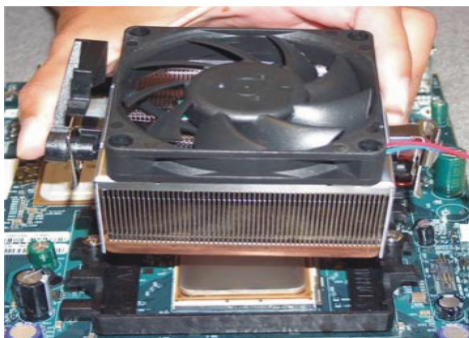
Step 10

1. Place the heatsink on the processor with it centered in the retention frame matching the heatsink clip with the socket mounting lug.
2. The heatsink should have full contact with the processor.
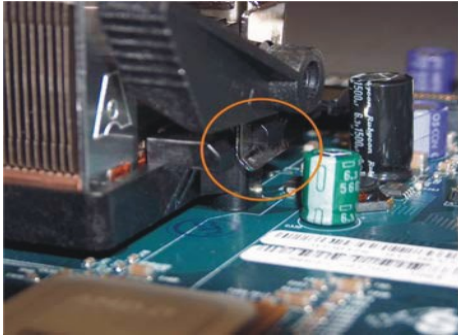
Step 11

■ Hook the spring clip under the cam lever to the mounting lug on the retention frame first. Some force may need to be applied.
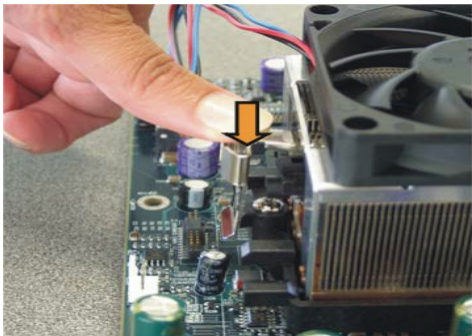
Step 12

1. Make sure the retention clip is aligned with the plastic lug on the retention frame.
2. Carefully push straight down on the clip. This may take more force than the first side
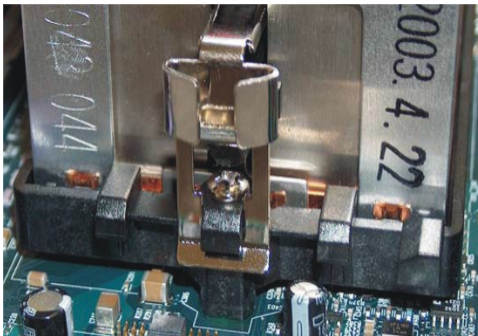
Step 13

■ The spring clip must be installed as shown.
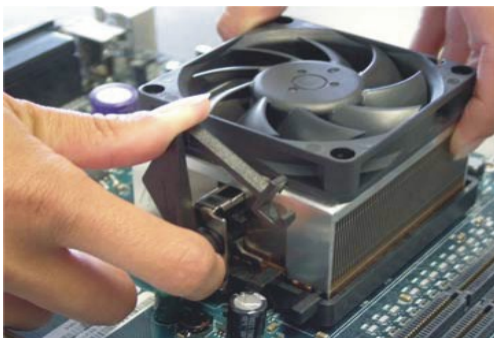
Step 14

■ Carefully turn the cam lever to lock into place.
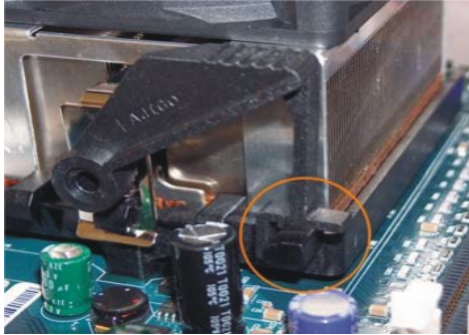
Step 15

■ Ensure the cam lever is locked into the retention frame.

![Tip icon] Tip

1. Connect the fan power lead to the proper connector to the motherboard.

2. Check the installation completely to make sure heatsink is installed correctly before starting the system. When the system is first powered-on, verify that the processor heatsink kit is turning at a rapid rate.

3. If the fan is spinning at a slow rate or not spinning at all, power-down the system immediately to avoid any thermal damage.

![Important icon] Important

In single CPU mode, please place CPU on the position of CPU0

3-4 Install Memory

The system mainboard uses Dual Inline Memory Modules (DIMM). Two pair's banks are available; each bank supports one CPU with Hyper Transport Technology. The memory DIMMs accommodates PC2100/2700/3200 (DDR266/DDR333/DDR400) and Double Data Rate Memory (DDR) memory modules in 128MB, 256MB, 512MB, 1GB, and 2GB combinations. Total memory size for one mainboard is between 128MB and 16GB.

IMPORTANT

The system mainboard has strict memory type and timing requirements. Before you purchase DDR (Double Data Rate) memory for using in the system mainboard, you should contact your local reseller for a recommend list of system memory that has been validated on this system.

IMPORTANT

To take advantage of the 128-bit interface, you must install DIMMs in pairs of two (2). DIMM slots DIMM0 and DIMM1 are paired, and slots DIMM2 and DIMM3 are paired. If you are only installing two DIMMS into a Memory Bank, it is recommended that you install them in slots DIMM0 and DIMM1 to get the full bandwidth.

Two DDR Modules	HO DIMM0, HO DIMM1
Four DDR Modules	HO DIMM0, HO DIMM1, HO DIMM2, HO DIMM3

3-4.1 Memory Installation Procedures

1. Locate the DIMM modules
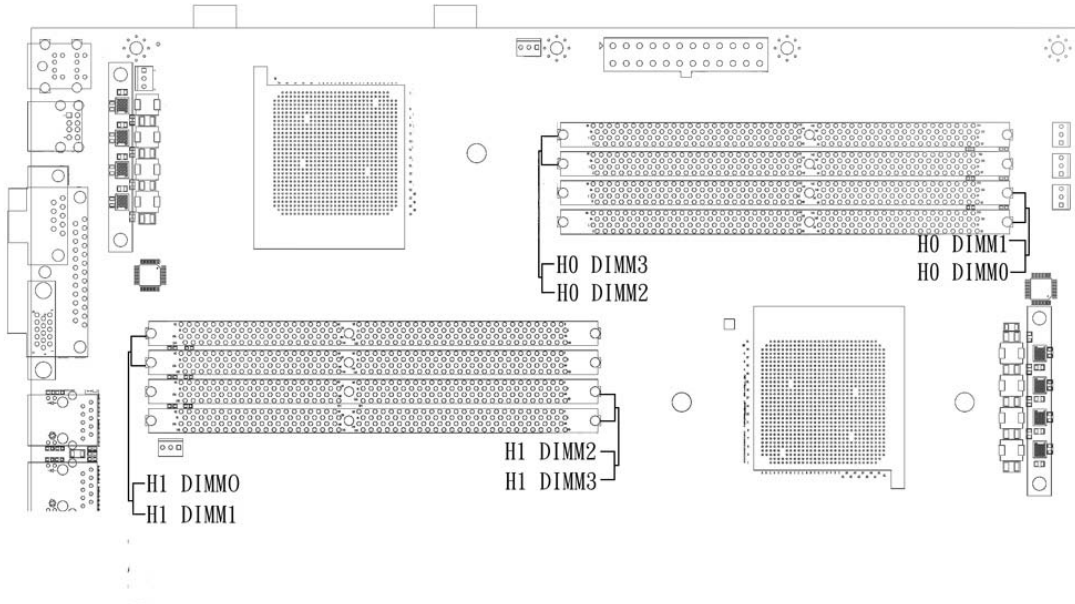
2. Make sure the DIMM's pins are facing down, and check that the pin arrangement on the memory module resembles the one pictured below.
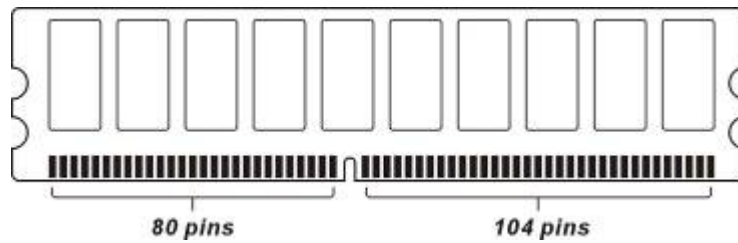
![Hand pointing icon] **IMPORTANT**

Always populate H0 DIMM socket before installing memory modules in the H1 DIMM sockets.

3. Insert the module into the DIMM socket and press down evenly on both ends firmly until the DIMM module is securely in place. (The tabs of the DIMM socket will close-up to hold the DIMM in place when the DIMM is properly installed into the socket.)
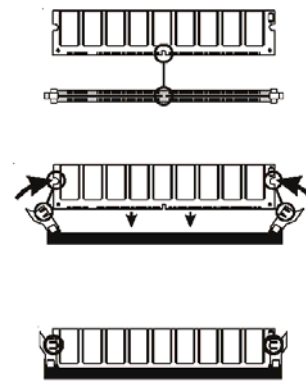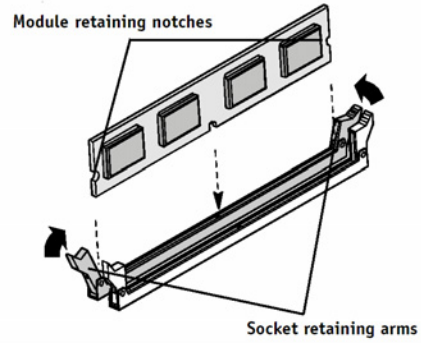
3-5 EPS Power Supply

These 24-pin connectors connect the server board to the EPS power supply. Find the proper orientation and push down firmly to make sure that the pins are aligned. The 8-pin connector provides a dedicated power supply for the CPUs.
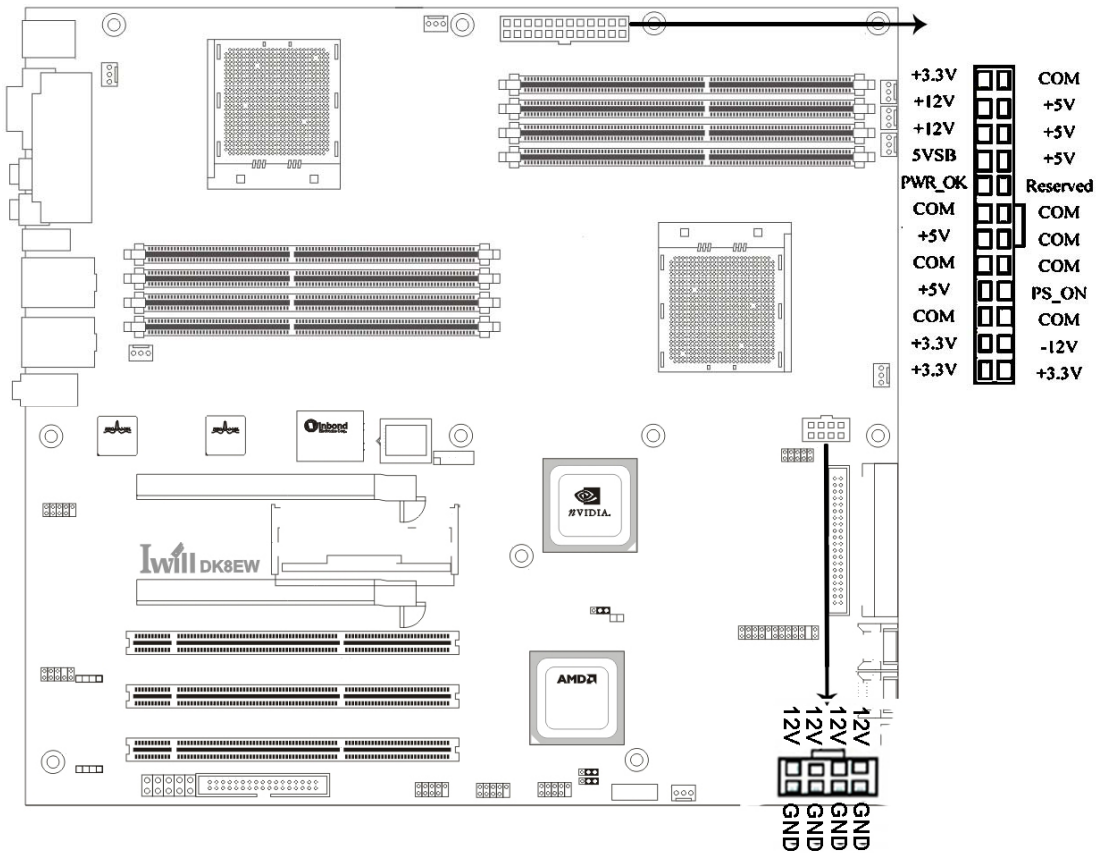
👆 IMPORTANT

IWILL® always recommends our customers use EPS12V Power supplies. For any power damaged, please contact your retailer or IWILL® technicians.

3-6 CPU/ System Fan Connectors

There are six 3-pin fan connectors in the Mainboard. Two fans are used for CPU1 and CPU0; four fans are for system and back. These connectors support cooling fans of 500mA (6W) or less. All fan drive current minimum are must over 1.5V. Depending on the fan manufacturer, the wiring and plug may be different. Connect the fan's plug to the Mainboard with respect to the polarity of the fan connector.
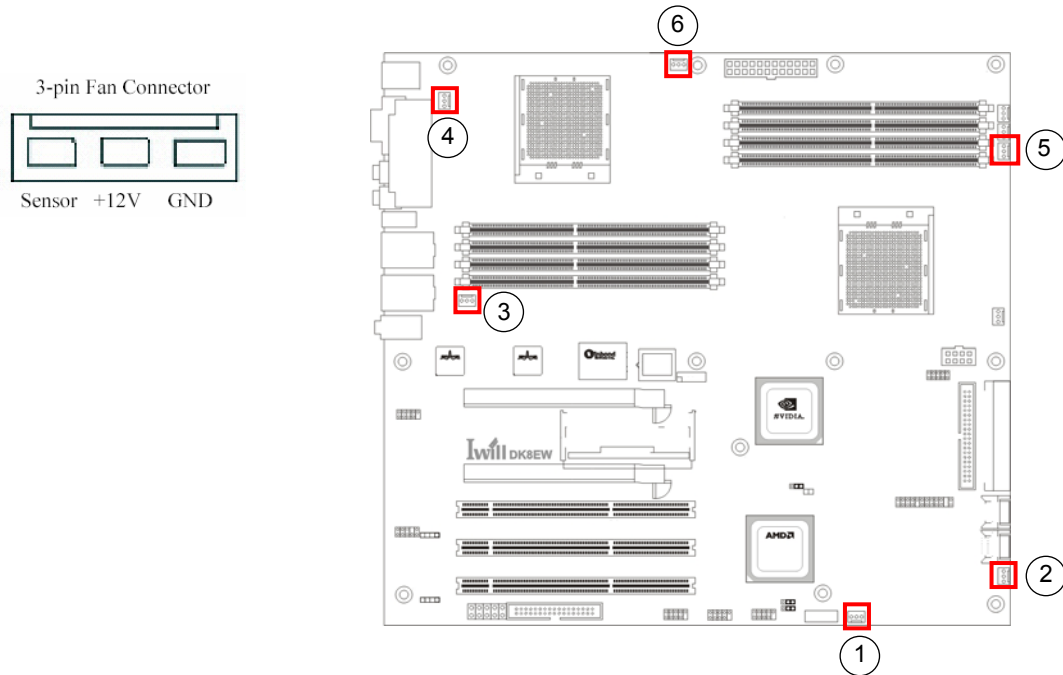
#		#	
1	Sys0 FAN	4	Sys3 FAN
2	Sys1 FAN	5	CPU0 FAN
3	Sys2 FAN	6	CPU1 FAN

Warning

The CPU and motherboard will overheat if there is not enough airflow across the CPU and onboard heatsink. Damage may occur to the motherboard and/or the CPU fan if these pins are incorrectly used. These are NOT jumpers; DO NOT place jumper caps over these pins.

3-7 SLI Converter

Function

You can find an SLI converter socket inserted with an SLI converter between the first and second PCIE x 16 slots. The SLI switch module has gold edge connectors on the top and bottom of it. One connector is SLI Mode and the other is Normal Mode.

Normal Mode: (factory default)	SLI Mode:
The first PCI-E x16 slot would run in x 16 bandwidth; the second one would run in x 1 bandwidth	The two PCI-E x16 slots would use the same bandwidth. They can run in x8 bandwidth.

PCI-E 1: x 16 bandwidth   PCI-E 1: x 8 bandwidth

PCI-E 2: x 1 bandwidth   PCI-E 2: x 8 bandwidth
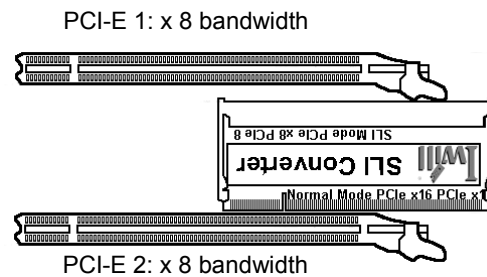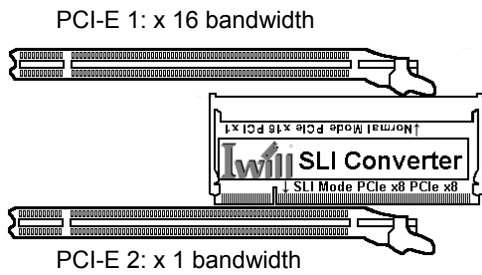
Note

Simply changing SLI converter direction could switch two modes. You can see the texts printed on the converter card to recognize two modes. When you see the IWILL logo in reverse order, you are running the SLI mode. Otherwise, you are running the normal mode.

Warning

Only Windows XP operating system is currently supported by the NVIDIA SLI technology.

3-7.1Enabling SLI Mode

1. Gently spread the retaining clips of the socket and the module may then be removed from the socket. Hold the module by the edges and lift it away from the socket.	
2. Position the SLI Mode side of the module above the socket at a $25°$ angle. Align the small notch at the top edge of the module with the key in the socket.	
3. Insert the top edge of the module into the socket. Make sure the gold edge connectors are fully inserted. Gently press down on the two ends of the module until it is locked in place by the socket clips. (You should hear a "click" when the module is attached.)	
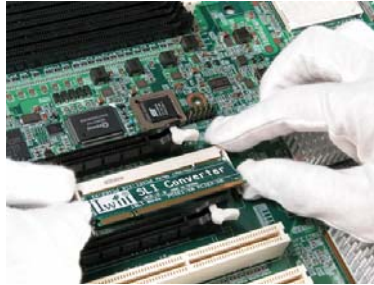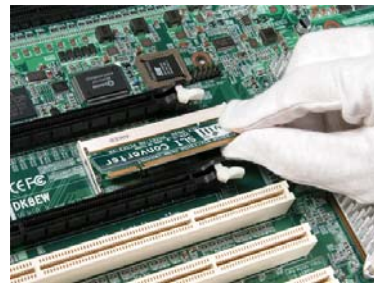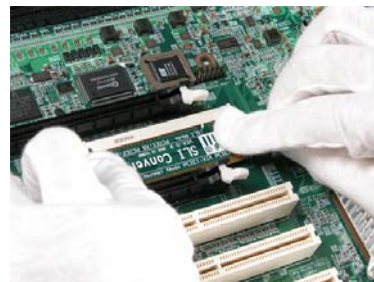
3-7.2 Connecting two graphics cards

1. Install two cards that contain a qualified NVIDIA PCI
Express GPU with the NVIDIA SLI connector on the
two PCI-Express x16 slots.
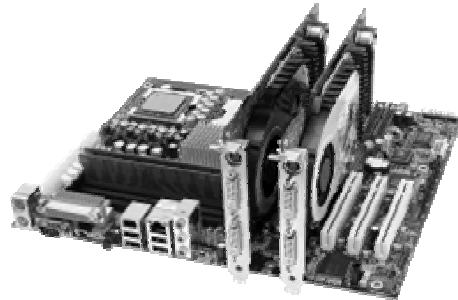
2. You have to use connector to connect two
NVIDIA-based PCI Express graphics cards.

3. Please put the connector onto the both sides of
graphics card's fingers.
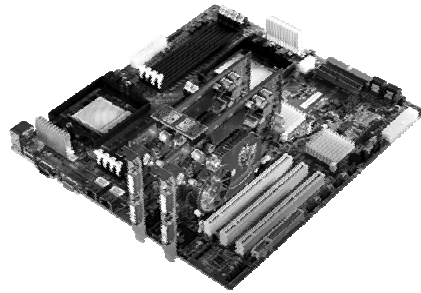
Important

DK8EW provides dual PCI-Express x16 slots for graphic use. It provides the higher performance and greater
bandwidth than the traditional AGP slot. DK8EW does not support AGP slot, so please choose the graphic card with
PCI-Express interface.

3-7.3 Graphics Card Driver Setting

1. Click the NVIDIA Settings icon on your Windows taskbar.

2. From the pop-up menu, please select nView Desktop Manager, and then click nView Properties
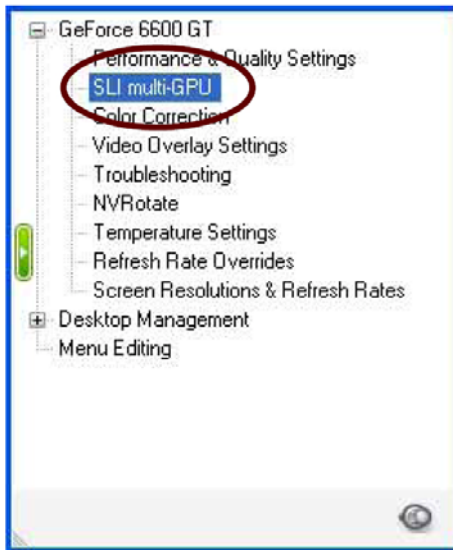
3. Under the NVIDIA controller panel, you could find your display option. (ex: GeForce 6600GT option)

Under this option, please click the slider to display the following screen, and then select the SLI multi-GPU item.

4. After you select SLI multi-GPU from the side menu, you should see the screen as the picture in right column. Please select the Enable SLI multi-GPU checkbox in the SLI multi-GPU dialog box. System will restart after you click Apply. Then the SLI configuration is completed.

3-8 Install Expansion Cards

 Warning

Please power off your power supply completely when adding removing any expansion card or other system components. Failure to do so may cause severe damage to both your motherboard and expansion card.

3-8.1 Expansion Card Installation Procedure

Read the documentation for your expansion card and make any necessary hardware or software setting changes such any jumper configuration.

1. Remove the bracket plate on the slot you intend to use. Keep the bracket for possible future use.

2. Carefully align the card's connectors and press with the riser card firmly.

3. Secure the card on the slot with the screw you removed above.

3-8.2 Assigning IRQs for PCI Expansion Cards

An IRQ number is automatically assigned to PCI expansion cards. In the PCI bus design, the BIOS automatically assigns an IRQ to a PCI slot that contains a card requiring an IRQ. To install a PCI card, you need to set the INT (interrupt) assignment. Since all the PCI slots on this motherboard use an INTA #, set the jumpers on your PCI cards to INTA.

3-9 Powering on your System

Follow these instructions to power on the computer after you have installed the Mainboard and all system devices.

1. Be sure that all switches are off (in some systems, Off is marked by "O"). After double-checking all jumper settings and connections, close the system chassis cover.

2. Connect the power cord to the power cord connector located on the power supply at the back of your system chassis and plug the power cord into a power outlet that is equipped with a surge protector.

3. Turn on your devices in the following order:

    ◆   Monitor

    ◆   System power

4. For power supplies, you need to switch On the power supply, then press the Power switch on the front of the chassis.

5. The power LED on the front panel of the system case will light up. For power supplies, the system LED will light up when the power switch is pressed. The monitor LED may light up after the system's LED if it complies with "Green" standards or if it has a power standby feature. The system will first run its "power-on" tests. While the tests are running, additional messages will appear on the screen.

6. If you do not see anything on the screen within 30 seconds from the time you turn on the power, the system may have failed a power-on test. Re-check your jumper settings and connections. Contact your retailer/dealer for assistance if everything else fails.

7. During power-on, hold down <DEL> to enter BIOS setup. Follow the instructions in BIOS for further setup information.

Chapter 4 BIOS Setup

This chapter discusses the AMI BIOS Setup program built into the ROM BIOS. The Setup program allows users modifying the basic system configurations according to their requirements. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The AMI BIOS installed in your computer system's ROM (Read Only Memory) is a custom version of an industry standard BIOS. The BIOS provides critical low-level support for standard devices such as disk drives and serial ports.

The AMI BIOS has been customized by adding important, but non-standard, features such as password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

BIOS Setup

4-1 Starting BIOS Setup

The AMI BIOS is immediately activated when you power on the computer every time. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. After finishing configuring the whole system, then BIOS will continue to seek an operating system on one of the disks, launch then turn control over to the operating system.

While the AMI BIOS is in control, the Setup program can be activated in the way:

By pressing the <DEL> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

4-2 Updating BIOS Setup

- Creating a bootable floppy disk

  A、DOS environment

    Insert a 1.44 MB floppy disk into the drive.

    At the DOS prompt, type:

    format A:/S then press <Enter>.

  B、Microsoft® Windows® environment

    Insert a 1.44 MB floppy disk into the floppy disk drive.

    From your Windows desktop, click on Start, then select My Computer.

    Select the 3 1/2 Floppy Drive icon.

    Click File from the menu, and then select Format. A Format 3 1/2 Floppy Disk window appears.

    If you are using Windows™, select "Create an MS-DOS startup disk" from the format options field, then click Start.

- Move the latest BIOS file to the bootable floppy disk.

- Using "NVFLASH.EXE" to update the BIOS

  Update the BIOS using the AMIFLASH.EXE utility in DOS environment.

  1. Visit the IWILL website (http://www.iwill.net) to download the latest BIOS file for your motherboard. Save the BIOS file to a bootable floppy disk.

  2. At the DOS prompt, type the command line:
  NVFLASH / <filename>
  where "filename" means the latest (or original) BIOS file that you copied to the bootable floppy disk. The screen displays the status of the update process.

Important

The BIOS information on the screen is for reference only. What you see on your screen may not be exactly the same as shown.

Warning

DO NOT shutdown or reset the system while updating the BIOS! Doing so may cause system boot failure!

3.   When the BIOS update process is complete, the utility returns to the DOS prompt.

The AMI BIOS is immediately activated when you power on the computer every time. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. After finishing configuring the whole system, then BIOS will continue to seek an operating system on one of the disks, launch then turn control over to the operating system.

While the AMI BIOS is in control, the Setup program can be activated in the way:

By pressing the <DEL> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

● Press <DEL> to enter SETUP

4-3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow(↑) Key	Move to the previous item
Down Arrow(↓) Key	Move to the next item
Left Arrow(←) Key	Move to the previous item
Right Arrow(→) Key	Move to the next item
Esc key	In the Submenu: Exit the submenu. In the BIOS main category: Quit Without saving changes.
Enter Key	Select the item. A pop-up selection will display on the screen to set the item value.
PgUp Key	Previous page on Scrollable menus or jump to the first interactive item listed
PgDn Key	Next page on Scrollable menus or jump to the last interactive item listed
F1 Key	General Help on Setup navigation keys. Press <F1> key 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> key or <F1> key again.
F2/F3 Key	Change colors
F7 Key	Discard changes
F8 Key	Load failsafe defaults
F9 Key	Load optimal defaults
F10 Key	Save and Exit
Home	Go to top of screen
End	Go to bottom of screen
Esc	Exit

IMPORTANT

The BIOS does NOT automatically save values that you have modified. If you do not save your values before you exit the BIOS Setup Utility, all your changes will be lost.

If after making and saving system changes with the BIOS Setup Utility, you discover that your computer is no longer able to boot, the AMI BIOS supports an override, which will reset your system to the Failsafe defaults. If that fails, it is possible to manually clear the present CMOS information through the "Clear CMOS Header" on the motherboard (Refer to Jumper Settings for more information).

The best advice is to ONLY alter settings which you thoroughly understand. The default settings have been carefully chosen by AMIBIOS to provide the maximum system performance and reliability. Even a slight change to the chipset setup may cause potential and unpredictable failure to the system.

4-4 Main Menu

This is the first screen that is displayed when you enter the BIOS Setup Utility. Each tab lined on the top of the screen represents each different menu. The following picture shows the main menu. Main menu shows the information of BIOS version, date and ID; processor type, speed and count; system size. In addition, system time and date is adjustable using + / - key or number keys.

```
                         BIOS SETUP UTILITY
 Main    Advanced    PCIPnP    Boot    Security    Chipset    Power    Exit

 System Overview                                   Use [ENTER], [TAB]
 ───────────────────────────────────────          or [SHIFT-TAB] to
 AMIBIOS                                            select a field.
 Version   :08.00.12
 Build Date:01/20/05                               Use [+] or [-] to
 ID        :DK8ES100                               configure system Time.

 Processor
 Type   :AMD Opteron(tm) Processor 248
 Speed  :2200MHz
 Count  :1

 System Memory                                     ↔    Select Screen
 Size   :353541MB                                  ↑↓   Select Item
                                                   +-   Change Field
 System Time              [14:12:35]               Tab  Select Field
 System Date              [Fri 01/21/2005]         F1   General Help
                                                   F10  Save and Exit
                                                   ESC  Exit

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```

4-5 Advanced Menu

You can make these modifications on the advanced menu.

```
                         BIOS SETUP UTILITY
 Main    Advanced    PCIPnP    Boot    Security    Chipset    Power    Exit

 Advanced Settings                                 Options for CPU
 ───────────────────────────────────────
 WARNING: Setting wrong values in below sections
          may cause system to malfunction.

 ▶ CPU Configuration
 ▶ IDE Configuration
 ▶ Floppy Configuration
 ▶ SuperIO Configuration
 ▶ Hardware Health Configuration
 ▶ ACPI Configuration
 ▶ Hyper Transport Configuration
 ▶ IPMI 1.5 Configuration           ↔    Select Screen
 ▶ MPS Configuration                ↑↓   Select Item
 ▶ PCI Express Configuration        Enter Go to Sub Screen
 ▶ Remote Access Configuration      F1   General Help
 ▶ USB Configuration                F10  Save and Exit
                                    ESC  Exit

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```

4-5.1 CPU Configuration Submenu

In CPU configuration, you can set up CPU frequency and enable/disable the Error Reporting.

GART error reporting should remain disabled for the normal operation.

```
                        BIOS SETUP UTILITY
      Advanced

 CPU Configuration                             This option should
                                               remain disabled for
 GART Error Reporting        [Disabled]        the normal operation.
 MTRR Mapping                [Continuous]       The driver developer
 CPU OverClock in MHz        [200]             may enable it for
                                               testing purpose.




                                               ↔     Select Screen
                                               ↑↓    Select Item
                                               +-    Change Option
                                               F1    General Help
                                               F10   Save and Exit
                                               ESC   Exit



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```

4-5.2 IDE Configuration Submenu

You can make the selections on IDE Configuration menu.

```
                        BIOS SETUP UTILITY
      Advanced

 IDE Configuration                            DISABLED: disables the
                                              integrated IDE
 OnBoard PCI IDE Controller    [Both]         Controller.
                                              PRIMARY: enables only
 ▶ Primary IDE Master        : [Not Detected]  the Primary IDE
 ▶ Primary IDE Slave         : [Not Detected]  Controller.
 ▶ Secondary IDE Master      : [Hard Disk]    SECONDARY: enables
 ▶ Secondary IDE Slave       : [Not Detected]  only the Secondary IDE
 ▶ Third IDE Master          : [Not Detected]  Controller.
 ▶ Fourth IDE Master         : [Not Detected]  BOTH: enables both IDE
 ▶ Fifth IDE Master          : [Not Detected]  Controllers.
 ▶ Sixth IDE Master          : [Not Detected]
                                              ↔     Select Screen
 Hard Disk Write Protect       [Disabled]     ↑↓    Select Item
 IDE Detect Time Out (Sec)     [5]            +-    Change Option
 ATA(PI) 80Pin Cable Detection [Host & Device] F1    General Help
 SATA0 IDE Interface           [Enabled]      F10   Save and Exit
 SATA1 IDE Interface           [Enabled]      ESC   Exit
 First Boot Device from        [P-ATA]
 ▶ Configuration nVidia RAID ROM

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```

Feature	Options	Description
OnBoard PCI IDE Controller	Disable Primary Secondary Both	Disable: disable the integrated IDE controller Primary: enable only the Primary IDE controller Secondary: enable only the Secondary IDE controller Both: enable both IDE controllers
Hard Disk Write Protect	Disable Enable	Disable/Enable the hard disk write protection. This will be effective only device is accessed through BIOS
IDE Detect Time out (sec)	0, 5, 10, 15, 20, 25, 30, 35	Select the time out value for detecting ATA/ATAPI device
ATA (PI) 80Pin Cable Detection	Host & Device Host Device	Select the mechanism for detecting 80 pin cable
SATA0 IDE Interface	Disable Enable	Disable/Enable the SATA0 IDE Interface
SATA1 IDE Interface	Disable Enable	Disable/Enable the SATA1 IDE Interface
First Boot Device from	P-ATA S-ATA	Choice the first boot device when you turn on the system

4-5.3 Floppy Configuration Submenu

4-5.4 Super I/O Configuration Submenu

```
                        BIOS SETUP UTILITY
    Advanced

Configure Win627THF Super IO Chipset            Allows BIOS to Select
                                                Serial Port1 Base
OnBoard Floppy Controller      [Enabled]        Addresses.
Serial Port1 Address           [3F8/IRQ4]
Serial Port2 Address           [2F8/IRQ3]
  Serial Port2 Mode            [Normal]
Parallel Port Address          [378]
  Parallel Port Mode           [Normal]
  Parallel Port IRQ            [IRQ7]


                                                ↔     Select Screen
                                                ↑↓    Select Item
                                                +-    Change Option
                                                F1    General Help
                                                F10   Save and Exit
                                                ESC   Exit


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```

4-5.5 Hardware Health Configuration Submenu

```
                        BIOS SETUP UTILITY
    Advanced

Hardware Health Configuration                   Enables Hardware
                                                Health Monitoring
H/W Health Function            [Enabled]        Device.

Hardware Health Event Monitoring

CPU0 Temperature               :52°C/125°F
CPU1 Temperature               :0°C/32°F

Fan0 Speed                     :4440 RPM

VcoreA                         :1.560 V
+3.3Vin                        :3.285 V          ↔     Select Screen
+5Vin                          :5.096 V          ↑↓    Select Item
+12Vin                         :11.718 V         +-    Change Option
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit


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```

On this menu, you can monitor the system status. It would show the CPU and system temperature.

4-5.6 ACPI Setting Submenu

```
                     BIOS SETUP UTILITY
   Advanced

 General ACPI Configuration                            Select the ACPI
                                                       state used for
 Suspend mode              [S1 (POS)]                  System Suspend.




                  ┌──────── Options ────────┐
                  │  S1 (POS)                │
                  │  S3 (STR)                │
                  │  Auto                    │
                  └──────────────────────────┘


                                                  ↔     Select Screen
                                                  ↑↓    Select Item
                                                  +-    Change Option
                                                  F1    General Help
                                                  F10   Save and Exit
                                                  ESC   Exit


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```

Select the ACPI state used for system suspend.

4-5.7 Hyper Transport Configuration Submenu

```
                     BIOS SETUP UTILITY
   Advanced

 Hyper Transport Configuration                         The HyperTransport
                                                       link will run at this
 CPU0:CPU1 HT Link Speed      [N/A]                    speed if it is slower
 CPU0:CPU1 HT Link Width      [N/A]                    than or equal to the
                                                       system clock and the
 CPU0:PCI-X0 HT Link Speed    [Auto]                   board is capable.
 CPU0:PCI-X0 HT Link Width  ┌──── Options ────┐
                            │  Auto            │
 CPU0:SB HT Link Speed      │  200 MHz         │
 CPU0:SB HT Link Width      │  400 MHz         │
                            │  600 MHz         │
                            │  800 MHz         │
                            └──────────────────┘
                                                  ↔     Select Screen
                                                  ↑↓    Select Item
                                                  +-    Change Option
                                                  F1    General Help
                                                  F10   Save and Exit
                                                  ESC   Exit


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```

To set up the hyper transport speed and bandwidth, you can adjust over this menu. The incorrect manipulation will impede the system running.

4-5.8 MPS Configuration Submenu


```
                        BIOS SETUP UTILITY
  Advanced

 MPS Configuration                                  Select MPS
                                                    Revision.
 MPS Revision                    [1.4]



                      ┌──── Options ────┐
                      │ 1.1             │
                      │ 1.4             │
                      └─────────────────┘
                                              ↔    Select Screen
                                              ↑↓   Select Item
                                              +-   Change Option
                                              F1   General Help
                                              F10  Save and Exit
                                              ESC  Exit

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```

4-5.9 PCI Express Configuration Submenu


```
                        BIOS SETUP UTILITY
  Advanced

 PCI Express Configuration                          Enable/Disable
                                                    PCI Express L0s and
 Active State Power-Management   [Disabled]          L1 link power
                                                    states.






                                              ↔    Select Screen
                                              ↑↓   Select Item
                                              +-   Change Option
                                              F1   General Help
                                              F10  Save and Exit
                                              ESC  Exit

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```

Enable/Disable PCI Express L0 and L1 link power states.

4-5.10 Remote Access Configuration Submenu

```
                         BIOS SETUP UTILITY
        Advanced

┌────────────────────────────────────────────────┬──────────────────────┐
│ Configure Remote Access type and parameters     │ Select Remote Access │
│                                                  │ type.                │
│ Remote Access            [Enabled]               │                      │
│                                                  │                      │
│ Serial port number       [COM1]                  │                      │
│ Serial Port Mode         [115200 8,n,1]          │                      │
│ Flow Control             [None]                  │                      │
│ Redirection After BIOS POST   [Disabled]         │                      │
│                                                  │                      │
│ Terminal Type            [ANSI]                  │                      │
│ Send Carriage Return     [Disabled]              │                      │
│ VT-UTF8 Combination Key Suppor [Disabled]        │                      │
│                                                  │ ↔    Select Screen   │
│                                                  │ ↑↓   Select Item     │
│                                                  │ +-   Change Option   │
│                                                  │ F1   General Help    │
│                                                  │ F10  Save and Exit   │
│                                                  │ ESC  Exit            │
│                                                  │                      │
└────────────────────────────────────────────────┴──────────────────────┘
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```

4-5.11 USB Configuration Submenu

```
                         BIOS SETUP UTILITY
        Advanced

┌────────────────────────────────────────────────┬──────────────────────┐
│ USB Configuration                                │ Configures the USB   │
│                                                  │ 2.0 controller in    │
│ Module Version - 2.24.0-F.4                      │ HiSpeed (480Mbps)    │
│                                                  │ or FullSpeed         │
│ USB Devices Enabled :                            │ (12Mbps).            │
│         None                                     │                      │
│                                                  │                      │
│                                                  │                      │
│ USB Controller Support   [USB 1.1+USB 2.0]       │                      │
│ Legacy USB Support       [Enabled]               │                      │
│ USB 2.0 Controller Mode  [HiSpeed]               │                      │
│ BIOS EHCI Hand-Off       [Enabled]               │                      │
│                                                  │ ↔    Select Screen   │
│                                                  │ ↑↓   Select Item     │
│                                                  │ +-   Change Option   │
│                                                  │ F1   General Help    │
│                                                  │ F10  Save and Exit   │
│                                                  │ ESC  Exit            │
│                                                  │                      │
└────────────────────────────────────────────────┴──────────────────────┘
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```

Adjust the USB speed on this submenu. There are two speeds, HiSpeed and FullSpeed, for your configuration.

4-5.12 The Advanced setting description

Feature	Options	Description
Floppy Configuration	Disabled 5 1/2" 360 KB 5 1/2" 1.2 MB 3 1/2" 720 KB 3 1/2" 1.44 MB 3 1/2" 2.88 MB	Select Floppy A or Floppy B and then selects floppy-diskette type installed in your system.
Hardware Health Configuration	Disable/Enable hardware health function and hardware thermal throttling	Enable/Disable hardware health function Thermal throttling allows the user to reduce CPU duty cycle to a user defined percentage when the temperature reaches a user defined value H/W health event
ACPI Configuration	ACPI Aware O/S Yes/No	Enable: O/S supports ACPI Disable: O/S doesn't support ACPI
Hyper Transport Configuration	CPU0 : CPU1 HT Link Speed/Width	Hyper Transport link speed/width is adjustable
Remote Access Configuration	Disable Serial	Selects Remote Access type
USB Configuration	Legacy USB Support Disabled/Enabled/Auto USB Mass Storage Device Configuration	Enable support for legacy USB Auto option disables legacy support it no USB device connected Configure the USB mass storage class devices

4-6 PCI PnP Menu
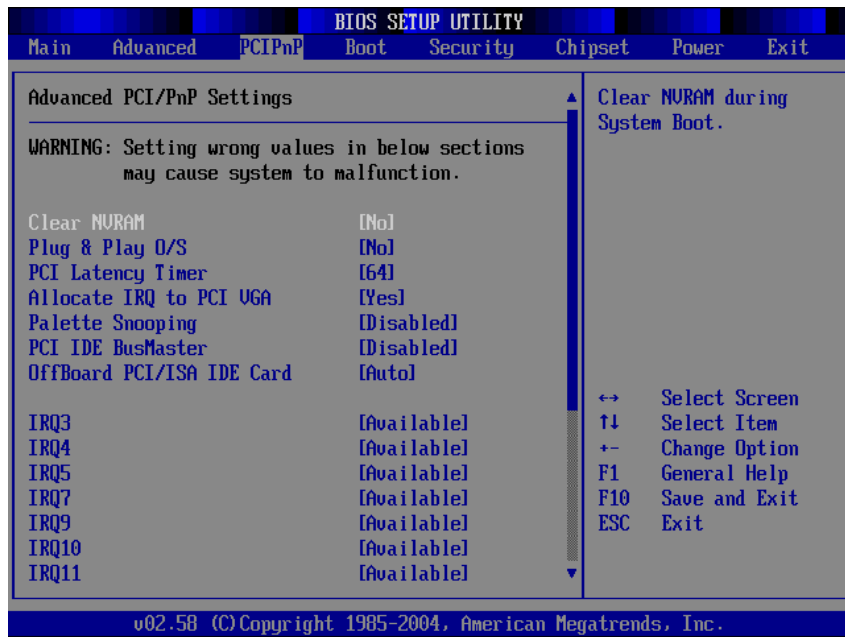
PCI PnP Menu 1

PCI PnP Menu 2

Feature	Options	Description
Clear NVRAM	Yes No	Clear NVRAM during System Boot
Plug & Play O/S	Yes No	Yes: lets the O/S configure PnP devices not required for boot if your system has a Plug and Play O/S
PCI Latency Timer	32, 64, 96, 128, 160, 192, 224, 248	Value in units of PCI clocks for PCI device latency timer register
Allocate IRQ to PCI VGA	Yes No	Yes: Assign IRQ to PCI VGA card if card requests IRQ No: Doesn't assign IRQ To PCI VGA cars even if card requests IRQ
Palette Snooping	Enabled Disabled	Enabled: informs the PCI devices that an ISA graphics device is installed in the system so the card will function correctly
PCI IDE BusMaster	Enabled Disabled	Enabled: BIOS uses PCI busmastering for reading/writing to IDE drives
Offboard PCI/ISA IDE card	Auto PCI Slot1 PCI Slot2 PCI Slot3 PCI Slot4 PCI Slot5 PCI Slot6	Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card
IRQ3~IRQ15	Available Reserved	Available: specified IRQ is available to be used by PCI/PnP devices Reserve: specified IRQ is reserved for use by legacy ISA devices
DMA Channel 0, 1, 3, 5, 6, 7	Available Reserved	Available: specified DMA is available to be used by PCI/PnP devices Reserve: specified DMA is reserved for use by legacy ISA devices
Reserved Memory Size	Disabled 16K 32K 64K	Size of memory block to reserve for legacy ISA devices

4-7 Boot Menu
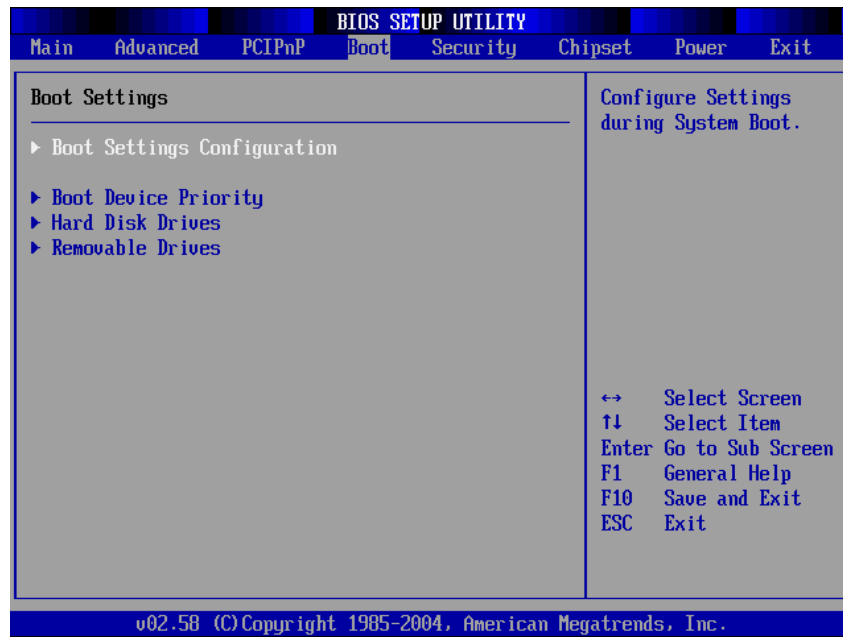
Boot Menu 1: Boot Settings

Boot Menu 2: Boot Device Priority
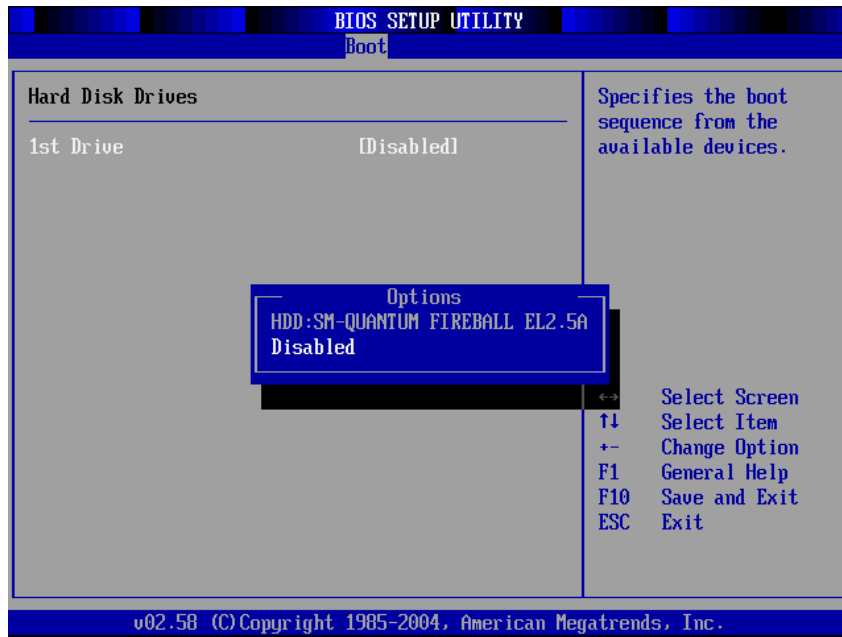
Boot Menu 3: Hard Disk Drives

Boot Menu 4: Removable Drives

Feature	Description
Boot Device Priority	Specify the boot device priority sequence
Hard Disk Drives	Specify the boot device priority sequence from available hard drives
Removable Drives	Specify the boot device priority sequence from available removable drives

4-7.1 Boot Settings Configuration Submenu

```
                         BIOS SETUP UTILITY
                               Boot

  Boot Settings Configuration                    Allows BIOS to skip
  ─────────────────────────────                  certain tests while
  Quick Boot                  [Enabled]          booting. This will
  Quiet Boot                  [Disabled]         decrease the time
  AddOn ROM Display Mode      [Force BIOS]       needed to boot the
  Bootup Num-Lock             [On]               system.
  PS/2 Mouse Support          [Auto]
  Typematic Rate              [Fast]
  Wait For 'F1' If Error      [Enabled]
  Hit 'DEL' Message Display   [Enabled]
  Interrupt 19 Capture        [Disabled]
                                                 ↔     Select Screen
                                                 ↑↓    Select Item
                                                 +-    Change Option
                                                 F1    General Help
                                                 F10   Save and Exit
                                                 ESC   Exit


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```

Feature	Options	Description
Quick Boot	Disabled Enabled	Allow BIOS to skip tests while booting
Quiet Boot	Disabled Enabled	Disabled: Display normal POST messages Enabled: Display OEM logo
Add-on ROM Display Mode	Force BIOS Keep Current	Set display mode for option ROM
Bootup Num-Lock	Off On	Select power on state for Num-Lock
PS/2 Mouse Support	Disabled Enabled	Select support for PS/2 mouse
Typematic Rate	Fast Slow	Select the speed rate of typematic
Wait for " F1 " if error	Disabled Enabled	Wait for F1 key to be pressed if error occurs
Hit " DEL " Message Display	Disabled Enabled	Display " Press DEL to run Setup " in POST
Interrupt 19 Capture	Disabled Enabled	Enabled: allows option ROMs to trap interrupt 19

4-8 Security Menu

```
                      BIOS SETUP UTILITY
  Main    Advanced   PCIPnP   Boot   Security   Chipset   Power    Exit

  Security Settings                              Install or Change the
                                                 password.
  Supervisor Password :Not Installed
  User Password       :Not Installed

  Change Supervisor Password
  Change User Password
  Clear User Password
                          ┌──────────────────────┐
  Boot Sector Virus Prote │ Enter New Password    │
                          └──────────────────────┘
                                           ↔     Select Screen
                                           ↑↓    Select Item
                                           Enter Change
                                           F1    General Help
                                           F10   Save and Exit
                                           ESC   Exit

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```

Security Menu 1: Change Supervisor Password

```
                      BIOS SETUP UTILITY
  Main    Advanced   PCIPnP   Boot   Security   Chipset   Power    Exit

  Security Settings                              Install or Change the
                                                 password.
  Supervisor Password :Not Installed
  User Password       :Not Installed

  Change Supervisor Password
  Change User Password
  Clear User Password
                          ┌──────────────────────┐
  Boot Sector Virus Prote │ Enter New Password    │
                          └──────────────────────┘
                                           ↔     Select Screen
                                           ↑↓    Select Item
                                           Enter Change
                                           F1    General Help
                                           F10   Save and Exit
                                           ESC   Exit

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```

Security Menu 2: Change User Password
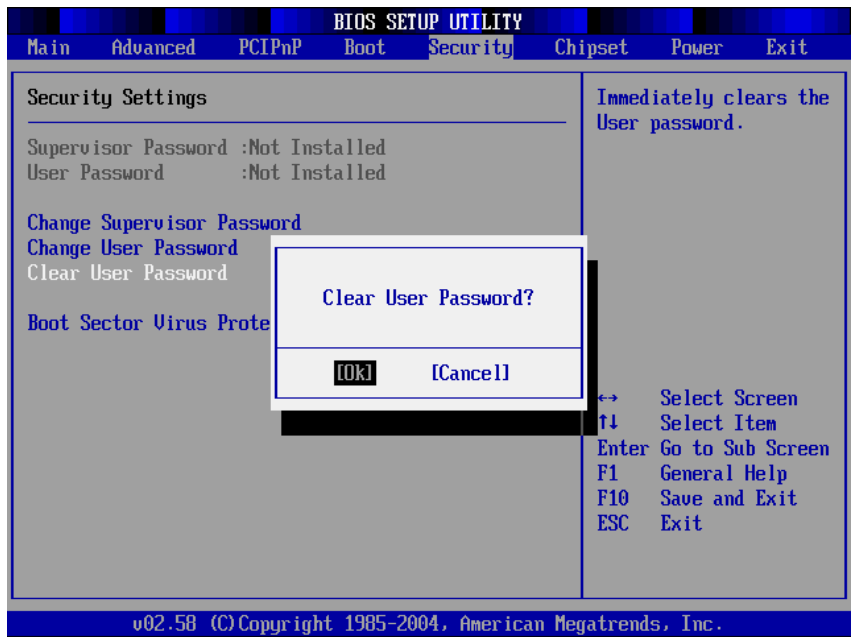
Security Menu 3: Clear User Password
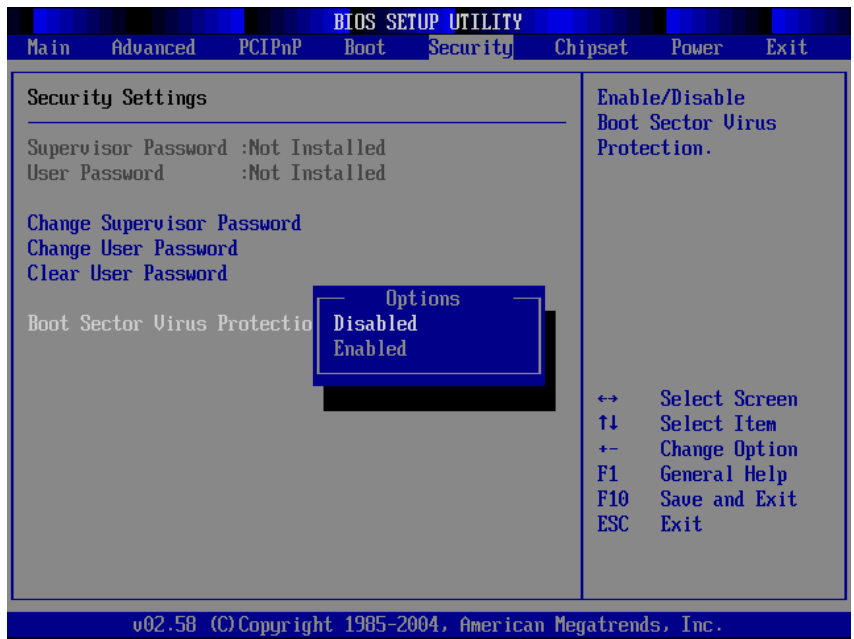
Security Menu 4: Boot Sector Virus Protection

Feature	Options	Description
Change Supervisor Password		Install or change the password
Change User Password		Install or change the password
Clear User Password		Setup: check password while invoking setup
		Always: check password while invoking setup as well as on each boot
Boot Sector Virus Protection	Disabled Enabled	Enable/Disable boot sector virus protection

4-9 NorthBridge Chipset Configuration Menu

```
                        BIOS SETUP UTILITY
                                              Chipset

 NorthBridge Chipset Configuration

 ▶ Memory Configuration
 ▶ ECC Configuration
 ▶ IOMMU Option Menu

   Memory CLK              :200 MHz
   CAS Latency(Tcl)        :3.0
   RAS/CAS Delay(Trcd)     :3 CLK
   Min Active RAS(Tras)    :8 CLK
   Row Precharge Time(Trp) :3 CLK
   RAS/RAS Delay(Trrd)     :2 CLK
   Row Cycle (Trc)         :12 CLK        ↔     Select Screen
   Row Refresh Cycle(Trfc) :14 CLK        ↑↓    Select Item
   Read Write Delay(Trwt)  :3 CLK         Enter Go to Sub Screen
   Read Preamble           :7.0 ns        F1    General Help
   Asynchronous Latency    :8 ns          F10   Save and Exit
                                          ESC   Exit



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```

4-9.1 Memory Configuration Submenu

```
                         BIOS SETUP UTILITY
                                                    Chipset

 Memory Configuration                           MEMCLK can be set
                                                by the code using
 Memclock Mode              [Auto]              AUTO, or if you use
 MCT Timing Mode            [Auto]              LIMIT, you can set
 User Config Mode           [Auto]              one of the standard
 Bank Interleaving          [Auto]              values.
 Burst Length               [4 Beats]
 Enable Clock to All DIMMs  [Disabled]
 SoftWare Memory Hole         Options
                          Auto
                          Limit
                                                ↔     Select Screen
                                                ↑↓    Select Item
                                                +-    Change Option
                                                F1    General Help
                                                F10   Save and Exit
                                                ESC   Exit


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```

Feature	Options	Description
Memclock Mode	Auto Limit	It can be set by the code using AUTO, or if you use LIMIT, you can set one of the standards.
MCT Timing Mode		See 4-9.1.1
User Config Mode		See 4-9.1.1
Bank Interleaving	Auto Disabled	Interleaving allows memory accesses to be spread out over BANKS on the same node, or across NODES, decreasing access contention
Burst Length	8 Beats 4 Beats 2 Beats	Burst length can be set to 8 or 4 beats. 64 bit Dq must use the 4 beats
Enable Clock to All DIMMs	Disable Enable	Enable unused clocks to DIMMs even memory slots are NOT populated

4-9.1.1 MCT Timing Mode Submenu

```
                      BIOS SETUP UTILITY
                                            Chipset

 Memory Configuration                             Options

 Memclock Mode              [Auto]           Auto
 MCT Timing Mode            [Manual]         Manual
   CAS Latency (CL)         [2.5]
   TRAS                     [8 CLK]
   TRP                      [4 CLK]
   TRCD                     [4 CLK]
   TRRD                     [ 2T]
   TRC                      [12T]
   TRFC                     [24T]
   TRWT                     [4 CLK]
 User Config Mode           [Auto]           ↔    Select Screen
 Bank Interleaving          [Auto]           ↑↓   Select Item
 Burst Length               [4 Beats]        +-   Change Option
 Enable Clock to All DIMMs  [Disabled]       F1   General Help
 SoftWare Memory Hole       [Enabled]        F10  Save and Exit
                                             ESC  Exit


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```

MCT Timing Mode

```
                      BIOS SETUP UTILITY
                                            Chipset

 Memory Configuration                             Options

 Memclock Mode              [Auto]           Auto
 MCT Timing Mode            [Auto]           Manual
 User Config Mode           [Manual]
   Read Preamble            [ 9.5ns]
   Asyc Latency             [11.0ns]
   CMD-ADDR Timing Mode     [ 2T]
 Bank Interleaving          [Auto]
 Burst Length               [4 Beats]
 Enable Clock to All DIMMs  [Disabled]
 SoftWare Memory Hole       [Enabled]

                                             ↔    Select Screen
                                             ↑↓   Select Item
                                             +-   Change Option
                                             F1   General Help
                                             F10  Save and Exit
                                             ESC  Exit


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```

User Config Mode

4-9.2 ECC Configuration Submenu

```
                    BIOS SETUP UTILITY
                                                Chipset

 ECC Configuration                              DRAM ECC allows
 ─────────────────────────                      hardware to report
 DRAM ECC Enable            [Enabled]           and correct memory
   MCA DRAM ECC Logging     [Disabled]          errors automatically
   ECC Chip Kill            [Disabled]          maintaining system
   DRAM SCRUB REDIRECT      [Disabled]          integrity.
   DRAM BG Scrub            [Disabled]
 L2 Cache BG Scrub          [Disabled]
 Data Cache BG Scrub    ─── Options ───
                        Disabled
                        Enabled

                                                ↔    Select Screen
                                                ↑↓   Select Item
                                                +-   Change Option
                                                F1   General Help
                                                F10  Save and Exit
                                                ESC  Exit


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```

Feature	Options	Description
DRAM ECC Enable	Disabled Enabled	DRAM ECC allows hardware to report and correct memory errors automatically maintaining system integrity.
L2 Cache BG Scrub	Disable 40ns 80ns 160ns 320ns 640ns 1.28us 2.56us 5.12us 10.2us 20.5us 41.0us 81.9us 163.8us 327.7us 655.4us	Allows the L2 date cache ram to be corrected while idle.
Date Cache BG Scrub	See above	Allows the L1 date cache ram to be corrected while idle.

4-9.3 IOMMU Mode Submenu

```
                                              Chipset

 IOMMU Mode                    [Disabled]                         Options

                                                       Disabled
                                                       Best Fit
                                                       Absolute

                          ┌──── Options ────┐
                          │ Disabled        │
                          │ Best Fit        │
                          │ Absolute        │
                          └─────────────────┘
                                                       ↔    Select Screen
                                                       ↑↓   Select Item
                                                       +-   Change Option
                                                       F1   General Help
                                                       F10  Save and Exit
                                                       ESC  Exit

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```
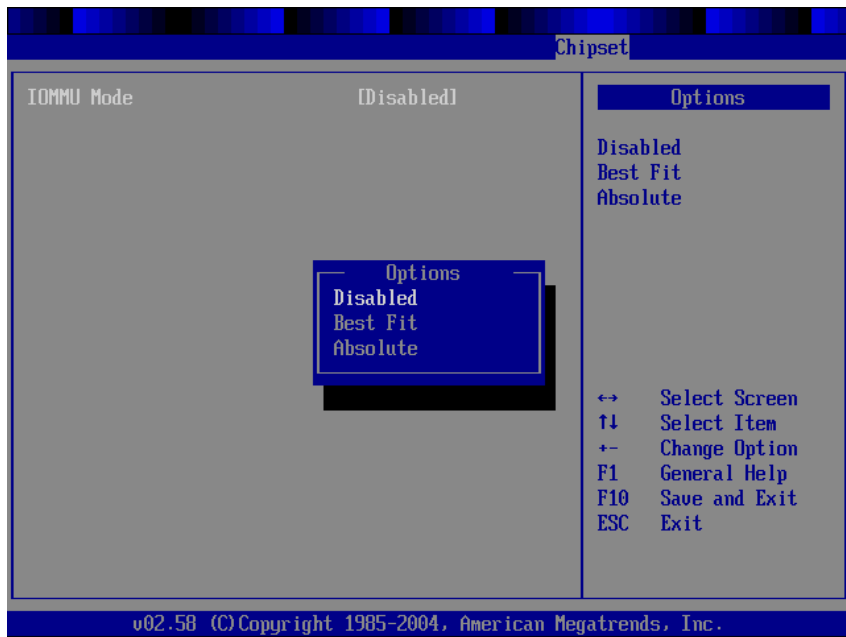
Feature	Options	Description
IOMMU Mode	Disabled	
	Best Fit	
	Absolute	

4-10 Power Menu

```
   Main    Advanced   PCIPnP    Boot    Security   Chipset   Power   Exit

   Power Management/APM        [Enabled]            Enable or disable
   Power Button Mode           [On/Off]             APM
   Video Power Down Mode       [Suspend]
   Hard Disk Power Down Mode   [Suspend]
   Hard Disk Time Out (Minute) [Disabled]
   LAN & PME# Resume           [Enabled]
   RTC Resume                  [Disabled]
   Resume On PS2 Device        [Enabled]
   Restore on AC/Power Loss    [Last State]
   PXE Detect                  [Disabled]

                                                ↔    Select Screen
                                                ↑↓   Select Item
                                                +-   Change Option
                                                F1   General Help
                                                F10  Save and Exit
                                                ESC  Exit


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```
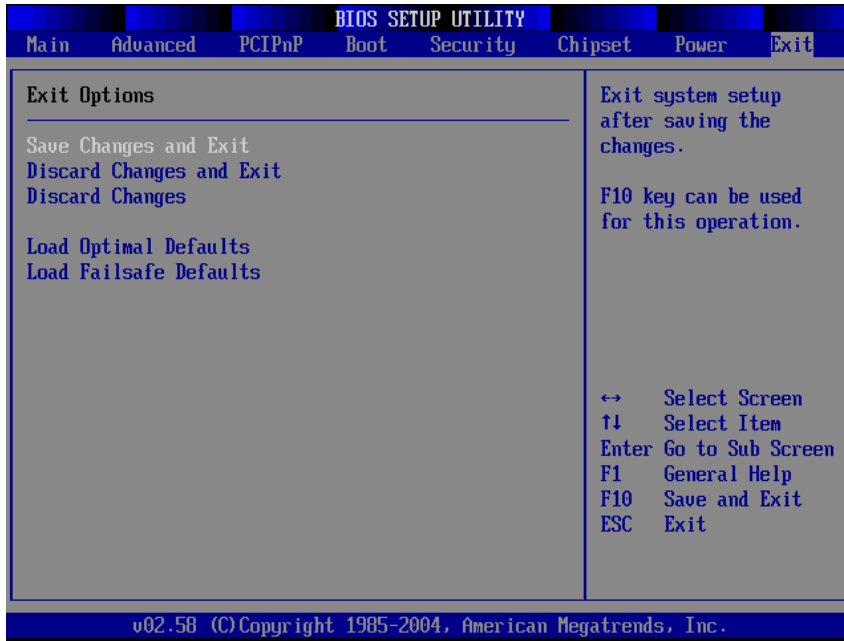
The Power menu items allow you to change the power management settings. Select an item then press Enter to display the configuration options.

4-11 Exit Menu

```
                        BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security    Chipset    Power    Exit

  Exit Options                                      Exit system setup
  ──────────────                                    after saving the
  Save Changes and Exit                             changes.
  Discard Changes and Exit
  Discard Changes                                   F10 key can be used
                                                    for this operation.
  Load Optimal Defaults
  Load Failsafe Defaults




                                                    ↔    Select Screen
                                                    ↑↓   Select Item
                                                    Enter Go to Sub Screen
                                                    F1   General Help
                                                    F10  Save and Exit
                                                    ESC  Exit


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```

Feature	Description
Save Changes and Exit	Exit system setup after saving the changes F10 key can be used for this operation
Discard Changes and Exit	Exit system setup without saving the changes ESC key can be used for this operation
Discard Changes	Discard changes done so far to any of the setup question F7 key can be used for this operation
Load Optimal Defaults	Load optimal default values for all the setup questions F9 key can be used for this operation
Load Failsafe Defaults	Load Failsafe default values for all the setup questions F8 key can be used for this operation

 Important

Any wrong values setting may cause system to malfunction. Therefore, IWILL suggests loading optimal defaults while any error happens.
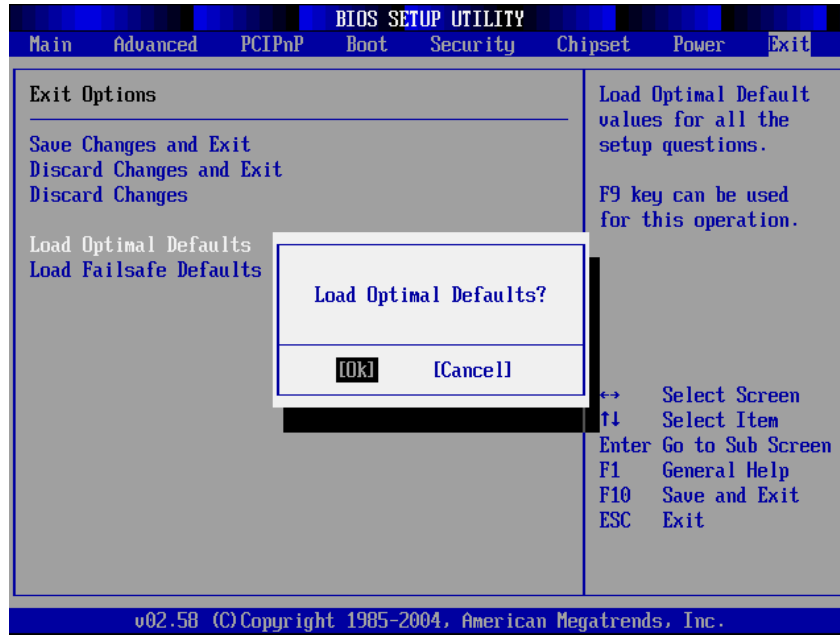
Chapter 5 Technology Support

If a problem arises with yours system during Installation or OS operating, you should ask your dealer for help first as your system has most likely be configured by them. They always have the best idea and quick response for your symptoms. If your dealer is near to your locations, you should bring your system to them to have it quickly serviced instead of attempting to solve the problem by yourself.

1. Go to IWILL® website at www.iwill.net and navigate to this product page which contains links to product updates such as Jumper settings or BIOS updates.

2. FAQ sections on IWILL® Website are often helpful since other user's questions are often your own.

3. Email us at: support@iwill.net, and we will try to answer your questions within 24 hours.

Three years Warranty

If any problems occur during the product's warranty period, consult your system vendor or distributor before contacting IWILL®. The warranty covers normal customer use of the product. The warranty does not cover damages sustained during shipping or failure due to alteration, misuse, abuse, or improper maintenance of the unit.

Technology Support

IWILL® DK8EW Hardware Installation Guide

Document part number: FB25910200

Mainboard Specification

Processor

- Two PGA 940 pin sockets

- Support up to two AMD Opteron^{TM} processors

- Dual Digital VRM

Chipset

- NVIDIA nForce™ Professional 2200

- AMD 8131 PCI-X Tunnel chip

- Winbond W83627THF Super I/O chip

System Memory

- Support ECC Registered SDRAM memory module

- Support up to 16GB memory capacity

- Support PC3200/PC2700/2100

- Total eight 184pin 2.5V DIMM slots

BIOS

- AMI BIOS 8.0 on 4Mbit flash ROM

- Support APM 1.2 and ACPI 1.0

- Support S1, S3, S4 and S5 modes

Expansion Slots

- Two PCI-Express x16 expansion slots

- PCIe x16, PCIe x1 under Normal Mode; Dual PCIe x8 under SLI Mode

- Three PCI-X 64bit 133/100/64/33 MHz expansion slots

Onboard SATA

- Onboard SATA from nForce™ Professional 2200 MCP

- Support four channel SATA II ports and up to four SATA devices

- Support NVIDIA RAID 0, 1, 0+1

Onboard LAN

- Dual Broadcom PCI-E 5721 Gigabit Ethernet Controller

- Dual RJ-45 port at the rear panel

Onboard IDE

- Support dual channel master mode IDE ports and up to four EIDE devices

IEEE-1394

- TI TSB43AB22 chipset

Onboard IO

- One floppy connector

- One 9 pin serial port connector

- Three USB 2.0 pin headers

- Power, HDD and LAN LED pin header

- One IEEE-1394 header

- One Audio Connector

- One CD-in header

- One S/PDIF in/out header

Rear Panel IO

- Two PS/2 connectors for mouse & keyboard

- Four USB 2.0 connectors

- One 9 pin serial port connector

- One Parallel connector support ECP/EPP mode

- One IEEE-1394 port

- Rear/Center Out

- Three Audio Jacks

- Two RJ-45 Gigabit ports

Form Factor

- Extended ATX form factor

- 12" x 13" board size

- Digital VRM design

- Support EPS 12V power