IWILL

DH800 Motherboard

User's Manual

{ DH800 Motherboard }

INDEX

DH800 Motherboard

Index

FCC Guidelines

This equipment has been tested and found to comply with the 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 a residential installation. 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 harmful interference to radio or television 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.
- Use only shielded cables to connect I/O devices to this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

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

Information to User:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. Shielded interference cable, if any, must be used in order to comply with emission limits.

Disclaimer of Warranties

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Static Electricity Precautions

It is quite easy to inadvertently damage your PC, mainboard, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the device in its antistatic bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Package Contents

The motherboard package includes the following items:

- DH800 motherboard
- ATA-66/100 IDE cable
- Serial ATA cable + SATA power cable
- Floppy disk drive cable
- Rear panel I/O shield
- Two heat sink retention modules
- 3 jumper caps (Extra caps in case original caps get lost.)
- CD (contains drivers and utilities)
- User's manual

If any of these items are missing or damaged, please contact your dealer or sales representative for assistance. Before you proceed, please read the " EPS 12V Power Connectors " section in this chapter. This section contains information about the type of power supply that you must use with this motherboard.

Before Using the Motherboard...

Before you install and use the motherboard, please check the following:

• Package contents

Make sure the package contains all items listed above. If any of these items are missing, please contact your dealer or sales representative for assistance.

• Damaged accessories

If any of the items are damaged, please contact your dealer or sales representative for assistance.

• Motherboard damage

If the motherboard has been visibly damaged, return the complete package to your dealer with the proof of purchase.

• Prepare basic system components

If you are installing the motherboard in a new system, you will need at least the following internal components.

- An Intel®Xeon™ CPU
- At least two DDR SDRAM memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need whatever external system peripherals you intend to use which will normally include at least a keyboard, a pointing device and a video display monitor.

Handling the Motherboard

It is quite easy to inadvertently damage the motherboard even before installing it in your system unit. Electrostatic discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling the motherboard to ensure that no static build-up is present.

Tips in Handling the Motherboard

1. To prevent electrostatic build-up, leave the motherboard in its anti-static bag until you are ready to install it.
2. Do all preparation work on a static-free surface with motherboard components facing up.
3. Hold the motherboard by its edges only. Be careful not to touch any of the components, contacts or connections, especially gold contacts, on the board.

Quick Installation Guide

Step 1
Install the CPU, CPU fan / heatsink and other system fans.

Step 2
Install the DIMM.

Step 3
Install add-in cards.

Step 4
Configure the jumpers.

Step 5
Connect the floppy disk drive cable and IDE disk drive cable to their respective devices.

Step 6
Connect the power supply's cables to the appropriate connectors and devices.

Step 7
Connect devices to the ports located at the rear panel.

Step 8
Connect the front panel cables (LED indicators and switch connectors) to the front panel connectors.

Step 9
Power on the PC.

Step 10
Configure the BIOS.

Step 11
Reboot the PC.

Step 12
Install the drivers and utilities that are in the provided CD.

IWILL

DH800 Motherboard

Chapter 1
Components and Features

1.1 Motherboard Layout

Mounting Hole

EPS 12V Power Connector

CPU FAN1

CPU FAN2

DIMM Slots

IDE

AUX_IN

JP3A & JP3

SATA

CD_IN

SMBUS

FDC

SYSFAN 2

SYSFAN 1

1394 Connector

WOL

JP1

JP16

Case Open

Front Panel
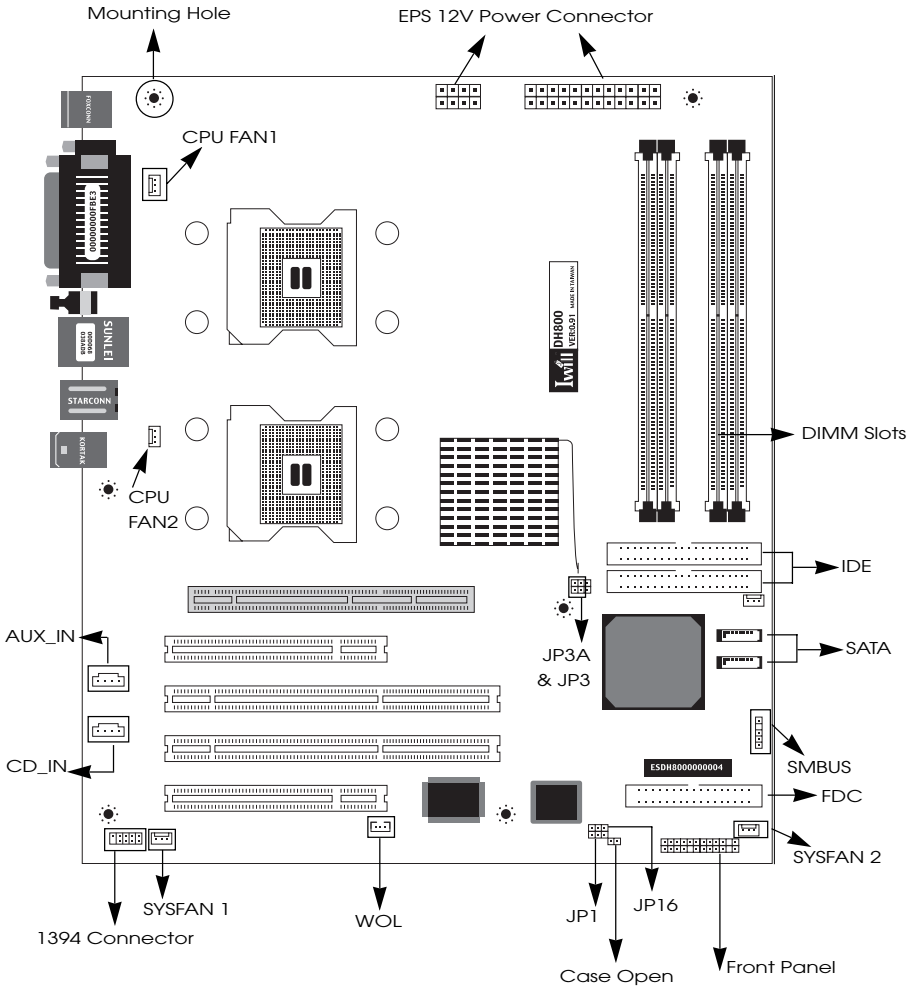
1.1.1 Components

Description	Location
CPU Sockets	CPU1 , CPU2
Channel A DIMM slots	A1 (J5) , A2 (J6)
Channel B DIMM slots	B1 (J3) , B2 (J4)
AGP	J11
PCI 1 , PCI 2	J12 , J13
PCI-X 1, PCI-X 2	J14 , J15
EPS 12V (24 pin)	J37
EPS 12V (8 pin)	J37A
CPU Fan 1	J39
CPU Fan 2	J39A
System Fan 1	J41
System Fan 2	J41A
System Fan 3	J41B
CD_IN	J54
AUX_IN	J53
WOL (Wake-On-LAN)	J46
IRDA	J45
SMBUS	J48
SATA 1	J63
SATA 2	J64
1394 Connector	J67
Front Panel	J43
CPU FSB	JP3 , JP3A
FWH Protection	JP16
Clear CMOS	JP1
Case Open	J42
FDC	J30
IDE 1	J28
IDE 2	J29

1.2 Chipset

Intel Chipset
North bridge: Intel 875P Memory Controller Hub
South bridge: Hance Rapid I/O Controller Hub

Intel LAN Controller
Intel 82547GI Gigabit Ethernet Controller

T.I. IEEE-1394 Controller
T.I. TSB43AB22A Controller
Support 1394a specification

Analog Devices Audio Controller
Analog Devices AD1980 Controller
Support 6-channel audio function

Super I/O Controller
Winbond W83627THF

1.3 CPU Socket

Function
The two CPU sockets are for installing Intel Xeon processors.
• System Bus: 100/133/166/200 MHz
• Supports Prestonia core CPU
• Auto detect CPU type for external clock and multiplier settings

Installation Notes
• You can install either one or two CPUs
• When installing one CPU, install it in CPU1 socket
• When installing two CPUs, make sure to use identical CPUs. The CPU
 settings (clock speed and ratio) must also be identical.

CPU Installation
Refer to Chapter 2 for information on the CPU installation procedure

BIOS Settings
The BIOS automatically detects the CPU clock. You can manually
configure the settings in the IWILL Smart Setting submenu of the BIOS.
Refer to chapter 3 for more information.

1.4 System Memory

Function
The DIMM sockets are for installing DDR SDRAM memory modules. The sockets function independently allowing a variety of configurations:

- Four DDR DIMM sockets
   Support dual channel memory interface
   Each channel supports 2 DIMM sockets
- PC1600 (DDR200) / PC2100 (DDR266) / PC2700 (DDR333) / PC3200 (DDR400) DDR SDRAM modules
   - Support Unbuffered ECC / Non-ECC memory modules
   - Support maximum of 4GB memory using 64, 128, 256, 512 MB or 1GB technology
- Peak memory bandwidth: 6.4 GB/s

Memory Configuration
- Support 128MB, 256MB, 512MB, 1GB modules
- Modules must all be the same type and capacity
- Install only 2 or 4 DIMMs; DO NOT install 3 DIMMs

The four DDR DIMM sockets are divided into 2 channels:
   Channel A: DIMM A1 (J5) and A2 (J6)
   Channel B: DIMM B1 (J3) and B2 (J4)
The figures below illustrate the ONLY allowed module configuration.
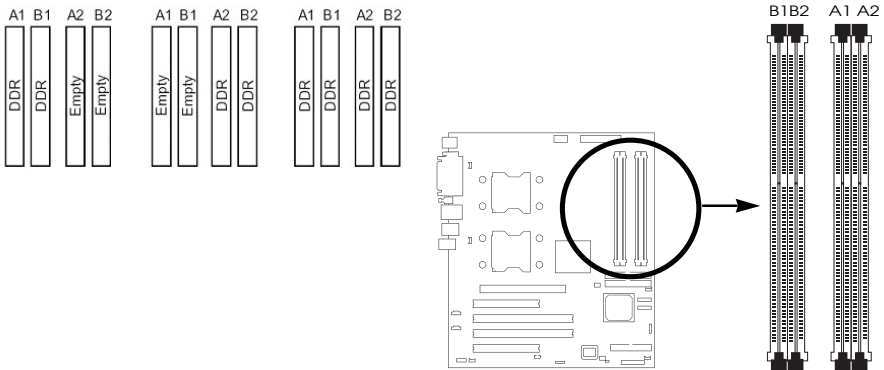
1.5 Expansion Slots

1.5.1 AGP slot

Function
The AGP slot is for installing an AGP interface video display card. It is
AGP 3.0 compliant. The slot supports three types of AGP cards:
 • AGP 8x (2.13GB/sec bandwidth)
 • AGP 4x (1066MB/sec. bandwidth)
 • AGP Pro 50 (The slot is extended to support AGP Pro cards that use
   up to 50 watts of power)

AGP 8X / Pro J11
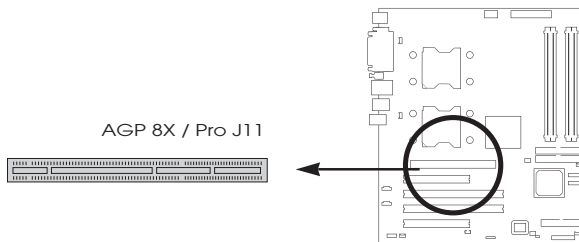
*The AGP slot only supports 1.5V devices. DO NOT
install 3.3V AGP card.*

BIOS Setting
Configure the amount of system memory the AGP card will use as
auxiliary memory by selecting the AGP Aperture Size in the Advanced
Chipset Features submenu of the BIOS. Refer to chapter 3 for more
information.

Display Driver
If the AGP card comes with a display driver, you must install the driver
according to the documentation that came with it.

1.5.2 PCI slots

Function
This motherboard has four Bus Master capable PCI expansion slots, including two 32-bit 33MHz slots and two 64-bit PCI-X slots operating at 66MHz.

BIOS Settings
The BIOS automatically configures Plug and Play and other PCI bus settings. Basically, you do not need to change any resource settings unless you encounter a problem after installing an expansion card. You can reconfigure the settings in the PnP/PCI Configurations submenu of the BIOS. Refer to chapter 3 for more information.
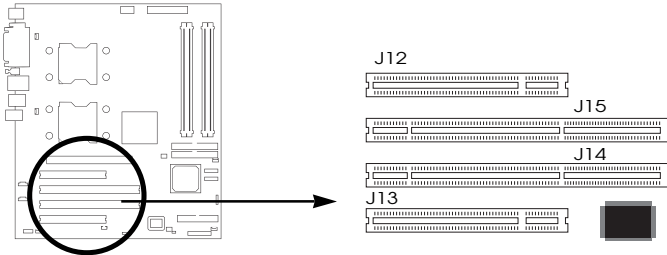
1.6 Rear Panel I/O Ports

1.6.1 PS/2 Keyboard and PS/2 Mouse Ports
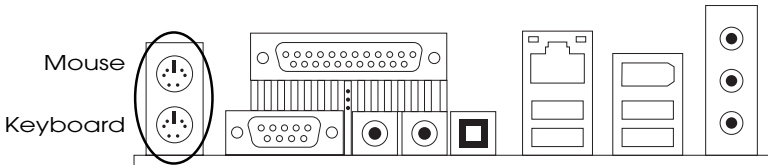
Mouse

Keyboard

Function

The PS/2 mouse (Green) and PS/2 keyboard (Purple) ports are for connecting a PS/2 mouse and PS/2 keyboard respectively. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.

Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the motherboard.

Keyboard/Mouse Power Up Function

You can configure the system to use the keyboard or mouse to power-on the system. To use this function: " Power On Function " (" Super IO Device " field) in the Integrated Peripherals submenu of the BIOS must be set accordingly. Refer to chapter 3 for more information.

1.6.2 Parallel Port
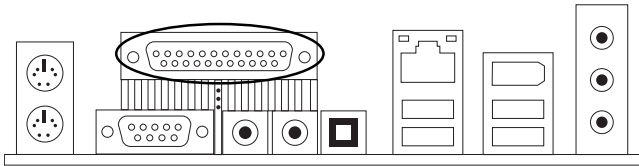
Function

The standard parallel port (Burgundy) is for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP modes.

• SPP (Standard Parallel Port)

Allows normal speed operation but in one direction only.

• ECP (Extended Capabilities Port)

Allows parallel port to operate in bidirectional mode and at a speed faster than the SPP's data transfer rate.

• EPP (Enhanced Parallel Port)

Allows bidirectional parallel port operation at maximum speed.

BIOS Setting

Select the parallel port's mode in the Integrated Peripherals submenu (" Super IO Device " field) of the BIOS. Refer to chapter 3 for more information.

1.6.3 Serial Port

COM1
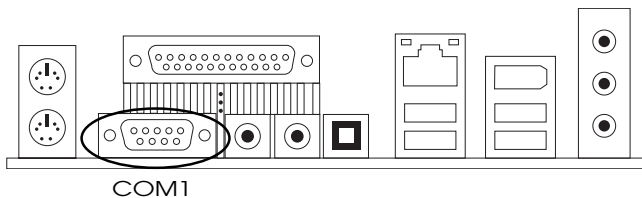
Function

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.

BIOS Setting

Select the serial ports' I/O address in the Integrated Peripherals submenu (" Super IO Device " field) of the BIOS. Refer to chapter 3 for more information.

1.6.4 Rear Out and Center Out Jacks
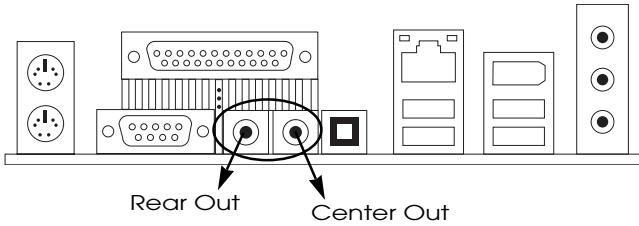
Rear Out   Center Out

Function

The rear out (black) and center out (orange) jacks support four audio output signals. The rear out jack supports rear right channel and rear left channel. The center out jack supports center channel and subwoofer. These four audio output signals together with the line-in and mic-in jacks support 6-channel audio output.

1.6.5 S/PDIF Out Jack

S/PDIF-Out
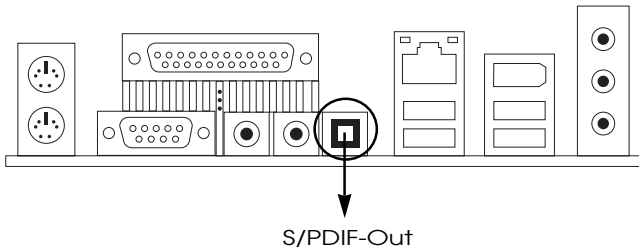
Function

S/PDIF is a standard audio file transfer format that transfers digital audio signals to a device without having to be converted first to an analog format. This prevents the quality of the audio signal from degrading whenever it is converted to analog.

The S/PDIF connector is used to connect the onboard AC'97 audio subsystem to external 5.1 audio devices. The connector has a composite signal which includes the audio channels of a 5.1 speaker system. These are:

· Front left/right speakers
· Rear left/right speakers
· Center channel speaker
· Subwoofer

The S/PDIF connector must be connected to a digital decoder that splits the audio signal and directs it to the various audio channel.

1.6.6 LAN Port

LAN
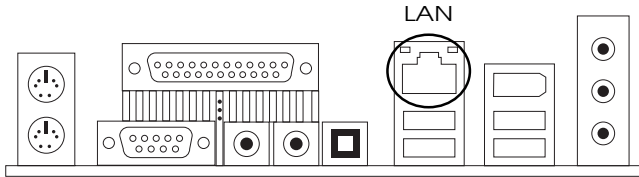
Function

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.

Speed LED ━ ▢━━▢ ━Link and Activity LED
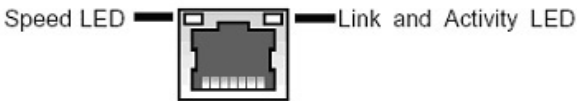
BIOS Setting

Enable or disable the onboard LAN in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.
Driver Installation
Install the " LAN Drivers " contained in the provided CD into your system. Refer to chapter 4 for more information.

1.6.7 USB Port

USB1   USB3
USB2   USB4

Function
The motherboard supports USB 2.0 and USB 1.1 ports. USB 1.1 supports
12Mb/second bandwidth while 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.

The motherboard is equipped with four onboard USB ports for rear
panel connection.

BIOS Setting
Enable or disable the onboard USB in the Integrated Peripherals
submenu of the BIOS. Refer to chapter 3 for more information. If you
are using a USB 2.0 device, install the " USB 2.0 Drivers " contained in the
provided CD. Refer to chapter 4 for more information.

Driver Installation
You may need to install the proper drivers in your operating system to
use the USB device. Refer to your operating system's manual or
documentation for more information.

1.6.8 Audio Jacks
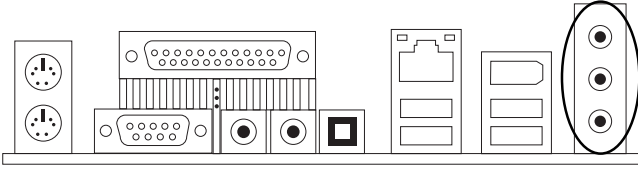
Function

- Line-in Jack (Light Blue)
  This jack is an audio input connector for an external audio source.
- Line-out Jack (Lime)
  This jack is used to connect stereo speakers for audio output.
- Mic-in Jack (Pink)
  This jack is used to connect an external microphone.

1.7 SATA Connectors

Serial ATA is a storage interface that is compliant with SATA 1.0 specification. With speed of up to 1.5Gbps, it improves hard drive performance even in data intensive environments such as audio/video, consumer electronics and entry-level servers.

The Hance Rapid chip supports RAID level 0, 1 on devices connected to the two SATA ports. For optimal performance, install identical drives of the same model and capacity. The drives' matched performance allows the RAID array to function better as a single drive.

Drives in an array must be identical. If striping for performance, use two new drives. If mirroring for protection, you can use two new drives or use an existing drive and a new drive (the new drive must be the same size or larger than the existing drive). Only two drives can be configured as RAID. Since striping or mirroring is done on the same channel, one drive must be set in Master mode and the other in Slave mode.

Connecting Serial ATA Devices
Connect one end of the cable to J64 (SATA 1) or J63 (SATA 2) and the other end to your serial ATA device. Connect the serial ATA power cable.
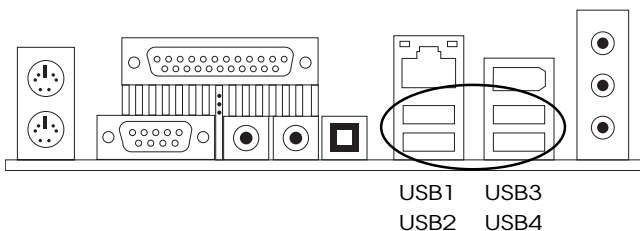
BIOS Setting
Configure the onboard Serial ATA and IDE in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation
You must install the RAID driver contained in the provided CD. Refer to chapter 4 for more information.

STAT2
STAT1
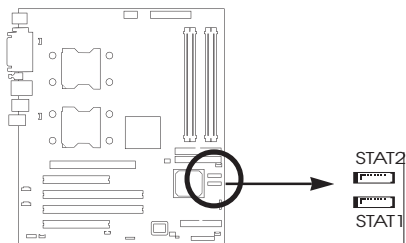
1.8 IDE Drive Connectors

Function

The 2 IDE disk drive connectors are Primary and Secondary IDE channels for connecting up to four ATA/100 IDE devices. It supports PIO (Programmable Input/Output) and DMA (Direct Memory Access) mode operations for a maximum data transfer rate of 100Mbps per channel. Each IDE connector supports 2 devices, a Master and a Slave. Use an IDE ribbon cable to connect the drives to the motherboard. An IDE ribbon cable have 3 connectors on them, one that plugs into a drive connector on the motherboard and the other 2 connects to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive.

IDE2
IDE1
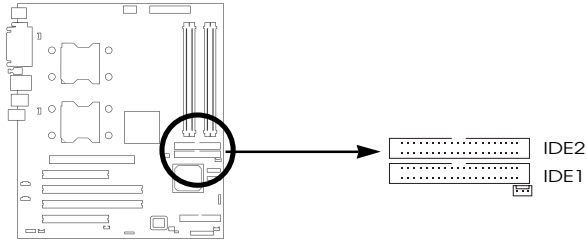
Connecting IDE Drives

Install one end of the IDE cable into the IDE 1 header on the motherboard and the other connectors to the IDE devices. If you are adding a third or fourth IDE device, use another IDE cable and install one end of the cable into the IDE 2 header on the motherboard and the other connectors to the IDE devices.

Refer to your disk drive user's manual for information about selecting proper drive switch settings.

Adding a Second IDE Disk Drive

When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together.

BIOS Setting

Enable or disable the onboard primary or secondary IDE controller in the Integrated Peripherals submenu ("OnChip IDE Device" field) of the BIOS. Refer to chapter 3 for more information.

1.9 Floppy Disk Drive Connectors

Function
The FDD connector is for connecting up to two floppy disk drives.

Connecting Floppy Drives
Install one end of the floppy disk drive cable into the floppy disk header on the motherboard and the other end-most connector to the drive you want to designate as Drive A. If you are connecting another drive (Drive B), install the middle connector of the cable to the drive.

BIOS Setting
Enable or disable this function in the Integrated Peripherals submenu (" Super I/O Device " field) of the BIOS. Refer to chapter 3 for more information.

FDC
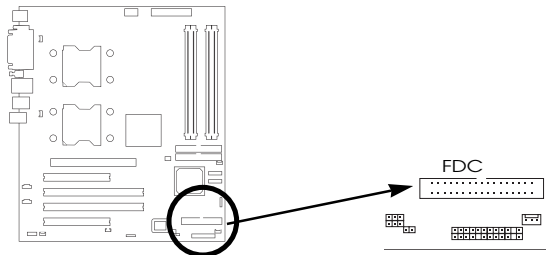
1.10 SMBus Connector

Function
The SMBus (System Management Bus) connector is used to connect SMBus devices. It is a multiple device bus that allows multiple chips to connect to the same bus and enable each one to act as a master by initiating data transfer.

1.11 Front Panel Connector

Function

The front panel connector (J44) on the motherboard supports several system indicators and controls that connect to the front panel of the system chassis. This will enable you to determine information about the system's operational status and provide some system controls. These include the:

- Reset Switch
  This switch connects to the system's Reset button allowing you to restart the system. Do not use the reset button if you can shut the system down from the operating system (OS). Shutting the system down from the OS minimizes the possibility of hard disk drive problems or data loss. However, if your system hangs, you have two hardware reboot options. " Warm " reboot using the <Ctrl> <Alt> <Del> keys or using the reset button.

- IDE LED Connector
  This connector connects to the system's IDE LED. The IDE LED flashes when the hard drive is being accessed.

- ACPI Switch
  This switch connects to the system's Suspend button allowing 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 speaker installed in the system chassis.

- Keyboard Lock Connector
  This connector connects to the chassis-mounted switch allowing you to use of the keyboard lock feature.

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

RESET SWITCH   IDE LED   ACPI SWITCH

POWER ON SWITCH

SPEAKER   POWER LED
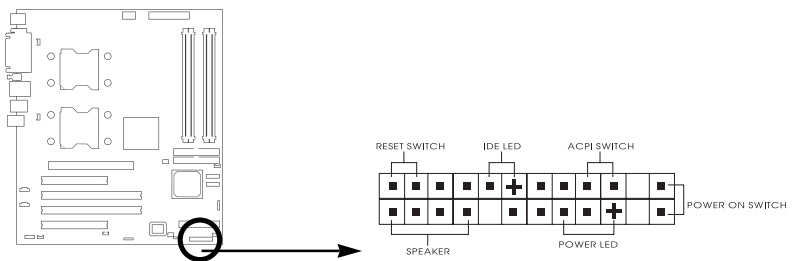
1.12 EPS12V Power Connector

Connecting a 450-Watt EPS 12V Power Supply
The motherboard requires using a 450-Watt EPS 12V power supply. Leads from the power supply will plug into the two power connectors (J1 and J3) on the motherboard. The 24-pin (J1) and 8-pin (J3) power connectors are not standard ATX connectors. These are for connecting to the minimum 450-Watt EPS 12V power supply that complies with the Intel Xeon processor power supply design guidelines.
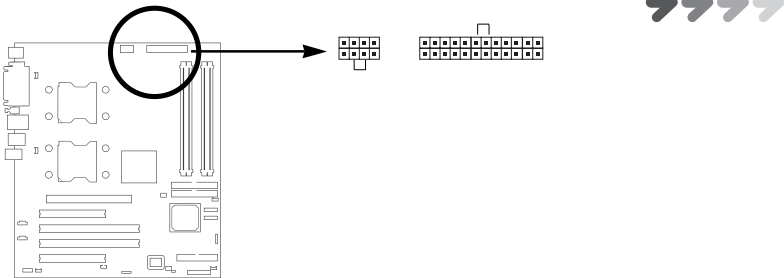
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DH800 Motherboard

Chapter 2
Hardware Installation

2.1 Jumper Settings

2.1.1 Clear CMOS - JP1

Function

The BIOS CMOS Setup Utility creates system configuration record that is stored in CMOS memory in the real-time clock chip. If the CMOS data becomes corrupted, you can use this jumper to delete the data stored in the CMOS memory and reset the configuration to the CMOS Setup Utility's Optimized Defaults.

Settings

1-2 On Default
2-3 On Clear CMOS

To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.
2. Remove the chassis cover.
3. Set JP1 pins 2 and 3 to On. Wait for a few seconds.
4. Set JP1 back to its default setting, pins 1 and 2 On.
5. Replace the chassis cover.
6. Now power-on the system.
7. After powering-on the system, press <Del> to enter the main menu the BIOS.
8. Select the Load Optimized Defaults submenu and press <Enter>.
9. Type <Y> and press <Enter> to load the optimized default values.
10. Press <Esc> to return to the main menu of the BIOS setup utility.
11. Select the "Save & Exit Setup" submenu then press <Enter>.
12. Type <Y> and press <Enter>.

JP1
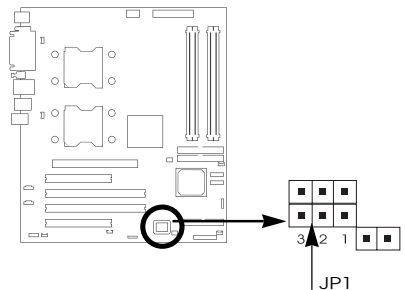
2.1.2 BIOS Flash Protect - JP16

Function

The system BIOS and CMOS Setup Utility are stored in the motherboard's Flash memory which provides permanent storage but is rewritable allowing BIOS updates. This jumper protects the system from unnecessary updating or flashing of the BIOS. It secures the BIOS therefore prevents accidental overwriting of the data stored in Flash memory.

Settings

1-2 On   Protection mode selected in the " Iwill Smart Setting " submenu of the BIOS. (default)
2-3 On   BIOS Write Protection Enabled
All Off   BIOS Write Protection Disabled

JP16

3 2 1
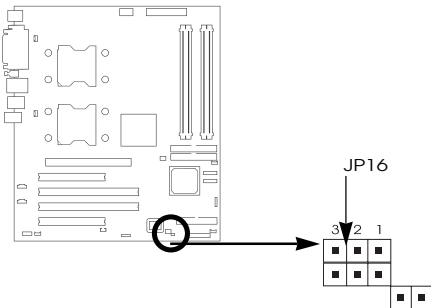
2.2 Motherboard Installation

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.

Motherboard Installation Procedure
The motherboard requires installing the supplied CPU Backplates 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 it's 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.
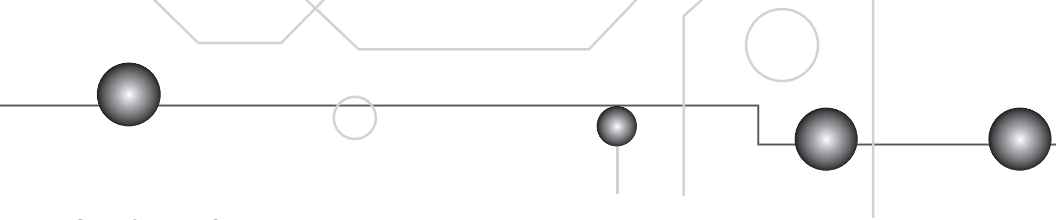
CPU & HeatSink Installation

IWILL DH800 supports two different specification of processor; therefore please follow direction as below according to the processor you bought.

2.2.1 Installing the Xeon CPU @ 533MHz FSB

Step 1 Position the attached screws for the special-designed iron plate.
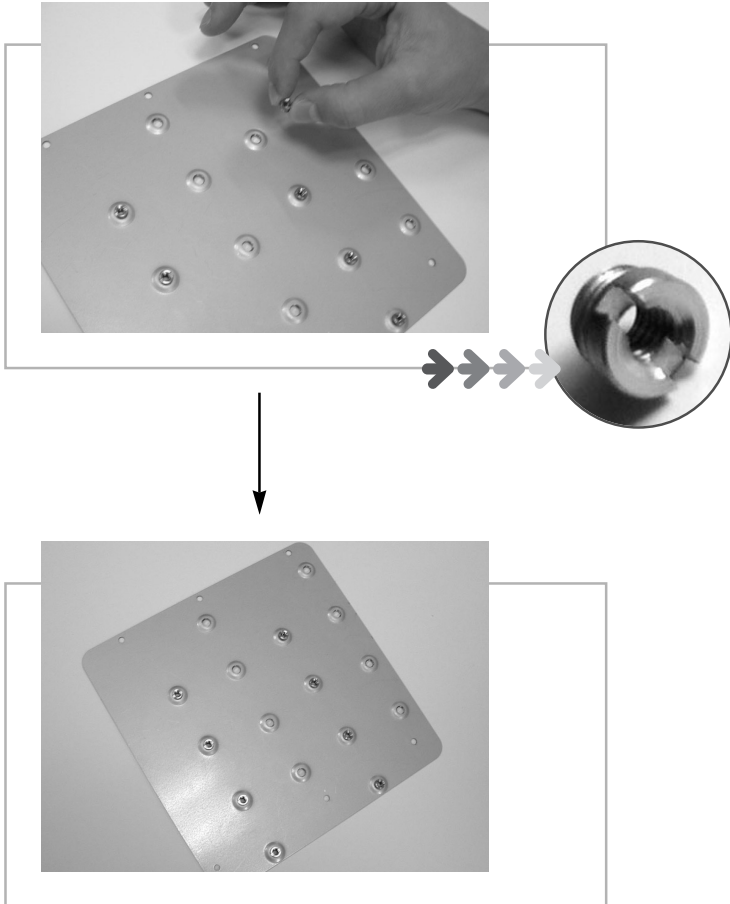
Step 2 Screw this plate to the chassis you will use to install this
motherboard. Please position the case mounting hole of this
plate to the chassis.

PSU

I/o
Shield

Front
Panel
of the
Chassis

Do not install here!
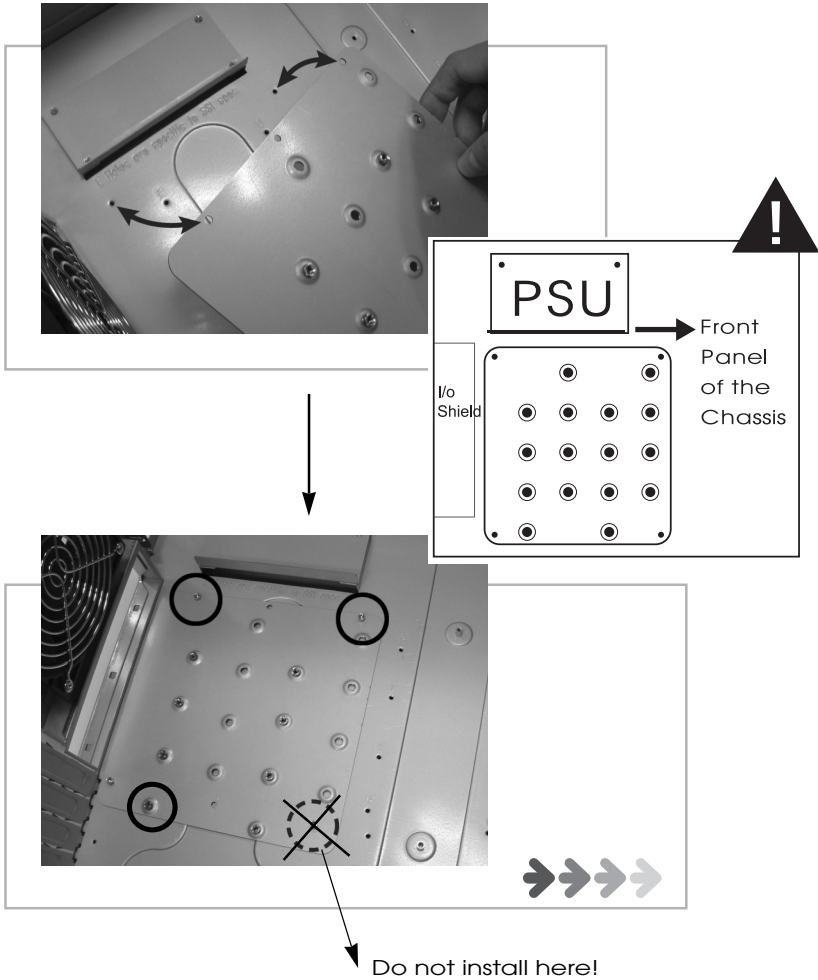
Step 3 Position IWILL DH800 on top of this plate and screw the
motherboard to the chassis.
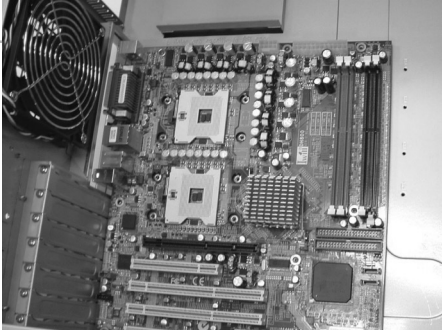
Step 4 Position processor on the CPU socket.

Step 5   Screw Retention Module on top of this motherboard
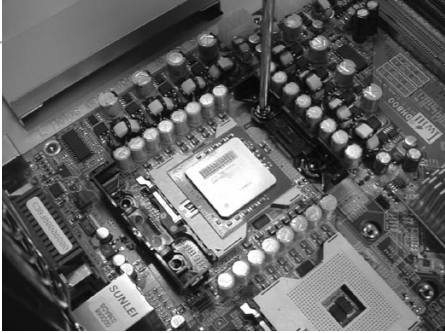
Step 6   Put CPU HeatSink on the top of the CPU, apply the clip to adjust the heatsink to be steady and finish the installation
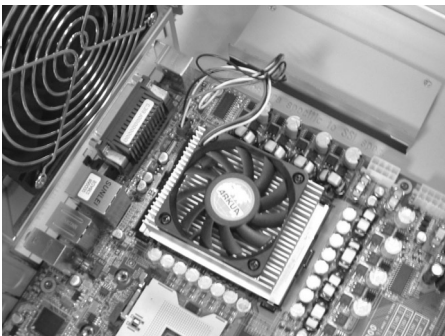
2.2.2 Installing the Xeon CPU @ 800MHz FSB

Step 1 Put the attached Hat Spring to the back of this motherboard
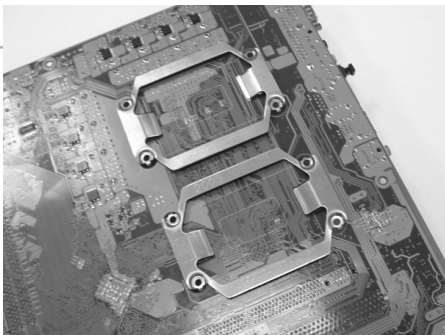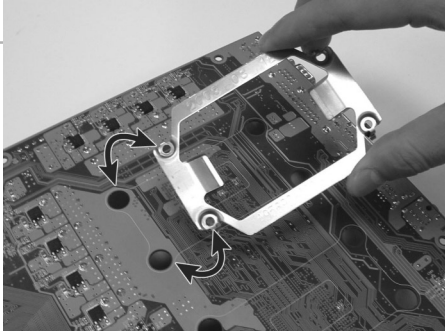
Step 2 Repeat step 1 ~ step 4 in 2.2.1

Step 3 Position the CPU HeatSink on the top of the CPU; screw it to the
        motherboard and finish the installation
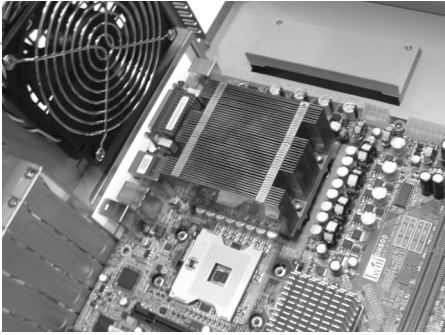
2.3 Memory Installation

The DDR module is held in the socket by the retaining arms on each side. The module's edge connector are of different widths and there are key notches in each module. These ensure that you won't insert the module incorrectly.

Module retaining notches

Socket retaining arms
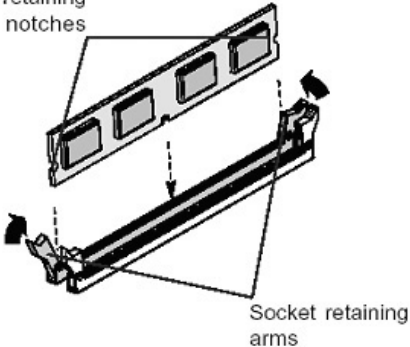
Before you install any modules, you must prepare the required number and type of DDR modules.

1. Align the module to the socket with the "notch" in the module aligned with the " key " on the socket. The module will insert in only one direction.
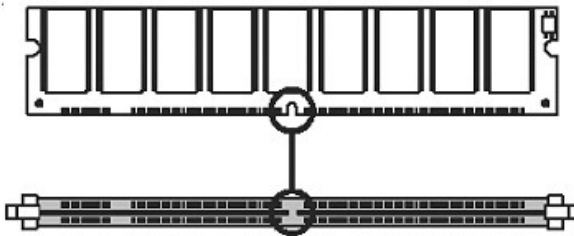
2. Hold the module perpendicular to the motherboard and press the edge connector into the socket.
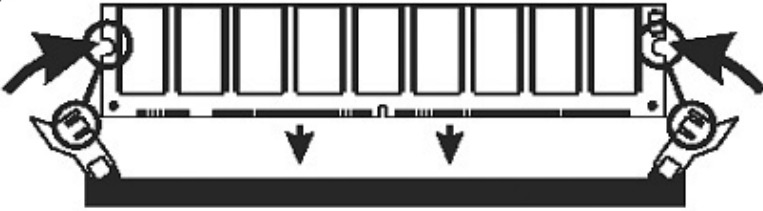
3. Press the module completely into the socket so that the retaining arms will engage the retention notches at each end of the module.

IWILL

DH800 Motherboard

Chapter 3
BIOS

Overview

This chapter discusses the AMIBIOS Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration.

The BIOS is the Basic Input / Output System used in all IBM PC, XT, AT, and PS/2 compatible computers. The AMIBIOS flash chip stores the system parameters, such as type of disk drives, video displays, etc. in the CMOS. When the computer is turned off, a back-up battery provides power to the BIOS flash chip, enabling it to retain system parameters. Each time the computer is powered-on the computer is configured with the values stored in the BIOS ROM by the system BIOS, which gains control at boot-up.

The AMIBIOS 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 and parallel ports.

STARTING THE BIOS SETUP

The AMIBIOS is immediately activated every time you power on the system. The BIOS reads the system information contained in the CMOS and begins the process of checking the system and configuring it. After configuring the system, the BIOS will follow the Boot Order to seek out an operating system. The BIOS then turns control of the system over to the operating system.

The CMOS information that determines the system parameters may be changed by entering the BIOS Setup utility.

1. Power on the System.
   Note: Normally, the only visible POST (Power On Self Test) routine is the memory test.
2. As the memory is being tested, you can access the BIOS Setup Utility by pressing the <F2> key when "Press < F2> to enter SETUP" appears briefly at the bottom of the screen.

From the main menu of the BIOS Setup Utility, you can access the other setup screens, such as the Security and Power menus.

USING THE BIOS SETUP UTILITY

Navigating through the BIOS Setup Utility is straight forward. Use the arrow keys to highlight items, press <Enter> to select items in menus, and press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Up ArrowKey	Move to the previous item
Down Arrow Key	Move to the next item
Left Arrow Key	Move to the previous menu
Right Arrow Key	Move to the next menu
<Esc> key	In the Submenu: Exit the submenu. In the BIOS main menu: Jump to the Exit Menu
<Enter> Key	Select the highlighted item. When available, a pop-up list will display for you to select the item value or select a submenu
<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.
<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 AMIBIOS 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.

3.1 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.

```
        Copyright (C)1985-2002, American Megatrends, Inc.
                              Main
 System Overview                                  Help Item
 AMIBIOS                                   Use [ENTER], [TAB]
 Version   :  N/A                          or [SHIFT-TAB] to
 Build Date:  N/A                          select a field.
 ID        :  N/A
                                           Use [+] or [-] to
 Processor                                 configure system Time.
 Type      :  N/A
 Speed     :  N/A
 Count     :  N/A

 System Memory
 Size      :  N/A

 System Time                  00:00:00
 System Date                  Sun 12/19/2099

                       ←→    Select Screen
                       ↑↓    Select Item
```

3.2 Advanced PCI / PnP Settings

```
                  Copyright (C)1985-2002, American Megatrends, Inc.
                                       PCIPnP
  ┌─────────────────────────────────────────────┬──────────────────────────┐
  │ Advanced PCI/PnP Settings                  ▲ │        Help Item         │
  │                                              │                          │
  │ WARNING: Setting wrong values in below sections │ NO: lets the BIOS     │
  │          may cause system to malfunction.    │ configure all the        │
  │                                              │ devices in the system.   │
  │ Plug & Play O/S              No              │ YES: lets the            │
  │ PCI Latency Timer           32              │ operating system         │
  │ PCI Delayed Transaction     Disabled        │ configure Plug and       │
  │ Allocate IRQ to PCI VGA     Yes             │ Play (PnP) devices not   │
  │ Palette Snooping            Disabled        │ required for boot if     │
  │ PCI IDE BusMaster           Disabled        │ your system has a Plug   │
  │ OffBoard PCI/ISA IDE Card   Auto            │ and Play operating       │
  │                                              │ system.                  │
  │ IRQ3                        Available       │                          │
  │ IRQ4                        Available       │                          │
  │ IRQ5                        Available       │                          │
  │ IRQ7                        Available       │                          │
  │ IRQ9                        Available       │                          │
  │ IRQ10                       Available     ▼ │                          │
  ├─────────────────────────────────────────────┴──────────────────────────┤
  │                    ←→    Select Screen                                   │
  │                    ↑↓    Select Item                                     │
  └─────────────────────────────────────────────────────────────────────────┘
```

```
                  Copyright (C)1985-2002, American Megatrends, Inc.
                                       PCIPnP
  ┌─────────────────────────────────────────────┬──────────────────────────┐
  │ IRQ3                        Available     ▲ │        Help Item         │
  │ IRQ4                        Available       │                          │
  │ IRQ5                        Available       │ Size of memory block     │
  │ IRQ7                        Available       │ to reserve for legacy    │
  │ IRQ9                        Available       │ ISA devices.             │
  │ IRQ10                       Available       │                          │
  │ IRQ11                       Available       │                          │
  │ IRQ14                       Available       │                          │
  │ IRQ15                       Available       │                          │
  │                                              │                          │
  │ DMA Channel 0               Available       │                          │
  │ DMA Channel 1               Available       │                          │
  │ DMA Channel 3               Available       │                          │
  │ DMA Channel 5               Available       │                          │
  │ DMA Channel 6               Available       │                          │
  │ DMA Channel 7               Available       │                          │
  │                                              │                          │
  │ Reserved Memory Size        Disabled     ▼ │                          │
  ├─────────────────────────────────────────────┴──────────────────────────┤
  │                    ←→    Select Screen                                   │
  │                    ↑↓    Select Item                                     │
  └─────────────────────────────────────────────────────────────────────────┘
```

Feature	Option	Description
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
PCI Delayed Transaction	Disabled Enabled	When Enabled shortens all delayed transaction discard timers from 32us to 4us
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	Disabled Enabled	Enabled: informs the PCI devices that an ISA graphics device is installed in the system so the card will function correctly
PCI IDE BusMaster	Disabled Enabled	Enabled: BIOS uses PCI busmastering foreading/ 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.

Feature	Option	Description
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

```
           Copyright (C)1985-2002, American Megatrends, Inc.
                                  Boot

  Boot Settings                                        Help Item

  ▶ Boot Settings Configuration    Press Enter

  ▶ Boot Device Priority           Press Enter
  ▶ Hard Disk Drives               Press Enter
  ▶ Removable Drives               Press Enter
  ▶ CD/DVD Drives                  Press Enter

  ▶ BIOS Boot Configuration OptionPress Enter




                         ←→    Select Screen
                         ↑↓     Select Item
```

3.3 Boot Menu

```
         Copyright (C)1985-2002, American Megatrends, Inc.
                                 Boot
  ┌──────────────────────────────────────────────┬──────────────┐
  │ Boot Settings                                 │ Help Item    │
  ├──────────────────────────────────────────────┤              │
  │ ▶ Boot Settings Configuration   Press Enter   │              │
  │                                               │              │
  │ ▶ Boot Device Priority          Press Enter   │              │
  │ ▶ Hard Disk Drives              Press Enter   │              │
  │ ▶ Removable Drives              Press Enter   │              │
  │ ▶ CD/DVD Drives                 Press Enter   │              │
  │                                               │              │
  │ ▶ BIOS Boot Configuration OptionPress Enter   │              │
  │                                               │              │
  │                                               │              │
  │                                               │              │
  │                                               │              │
  │                                               │              │
  ├──────────────────────────────────────────────┴──────────────┤
  │              ←→    Select Screen                              │
  │              ↑↓    Select Item                                │
  └──────────────────────────────────────────────────────────────┘
```

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
CD / DVD Drives	Specify the boot device priority sequence from available CD / DVD drives

3.4 Specification

Processor:
- Dual/single Intel Xeon (socket 604) processors
- Intel Xeon processors at 533MHz System Bus
- 2nd set VRD to support next generation Intel Xeon processors
- Support 2MB L3 cache Intel Xeon processors

Chipset:
- Intel i875P MCH
- Intel Hance Rapids ICH
- Winbond W83627THF Super I/O

System Memory:
- Support DDR400/333/266 memory modules
- Support unbuffered memory only
- Support ECC/non-ECC memory modules
- Support 128Mb/256Mb/512Mb technology memory
- Maximum memory capacity up to 4GB

Graphic:
- 1x AGP Pro/8X slot
- AGP Pro50
- AGP 3.0 specification

PCI slots:
- 2x PCI-X 64/66 slots
- 2x PCI 32/33slots
- PCI 2.1/2.2 Compliant

On-Board SATA and IDE:
- Dual SATA ports w/ Adaptec Host RAID
- Dual ATA100/66/33 IDE channel
- Supports ATAPI IDE CD-ROM, ZIP-100 & LS-120

Ethernet:
- Intel Kenai II CSA for GbE LAN
- 1x RJ-45
- One 3-pin Wake on LAN connector
- Enable/Disable by option in the BIOS

Audio:
- 6 Channel AC'97 CODEC
- Analog Device AD1980
- One audio connector at rear panel to support LINE IN/LINE OUT/MIC IN
- Support MIC IN/LINE OUT for front panel
- Rear-out, Center-out and S/PDIF-out
- One 4-pin CD-ROM Audio In header
- One 4-pin AUX header
- Enable/Disable by one option in the BIOS

IEEE-1394:
- TI TSB43AB22A IEEE-1394 controller
- One IEEE-1394 connector stack on rear USB port to support external port
- One pin header to support external IEEE-1394

USB:
- 4x USB 2.0 external port on the back panel

General I/O:
- 1x Floppy Controller for up to two drives
- 1x UART connector
- 1x 25pin ECP/EPP Parallel Port
- 1x PS/2 Keyboard
- 1x PS/2 Mouse
- 1x Internal Smbus connector
- 1x Internal WOM connector

BIOS:
- AMI BIOS
- Flash-write Protection for BIOS
- Support ACPI S1, S3
- Auto configuration for IDE hard disk type
- Multiple boot options

System Management:
- Winbond hardware monitor
- 2x 3-pin CPU Fan headers with speed control
- 3x 3-pin Chassis Fan headers with speed control
- 3x Temperature sensor
- 8x Voltage monitoring (Vcore, +1.5V, +2.5V, +3.3V, +5V, +12V, Battery, 5VSTB)
- 1x 3-pin Chassis intrusion header

Form Factor:
- ATX (12"x10.5")
- Stacked PS/2 Mouse/Keyboard ports
- Two stacked RJ-45 with LED on dual USB2.0 ports
- Stacked Parallel ports on one Serial, real out/center out/SPDIF out
- Stacked audio Line-in, Line-out and Microphone

Power Supply:
- EPS12V and ATX12V

Package Contents
- DH800 motherboard
- ATA-66/100 IDE cable
- Serial ATA cable + SATA power cable
- Floppy disk drive cable
- Rear panel I/O shield
- Two heat sink retention modules
- 3 jumper caps (Extra caps in case original caps get lost.)
- CD (contains drivers and utilities)
- User's manual

MEMO

MEMO

MEMO

MEMO