Statement:

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Trademark:

All trademarks are the property of their respective owners.

Version:

User Manual V1.0 in English for 6497MB series motherboard

P/N: 91-181-U49-M2-0E

Symbol description:

Note: refers to important information that can help you to use motherboard better.

Attention: indicates that it may damage hardware or cause data loss, and tells you how to avoid such problems.

Warning: means that a potential risk of property damage or physical injury exists.

More information:

If you want more information about our products, please visit Foxconn's website: http://www.foxconnchannel.com

Item Checklist:

Thanks for your purchasing Foxconn's 6497MB series motherboard. Please check the package; if there are missing or damaged items, contact your distributor as soon as possible.

- 6497MB motherboard (x1)
- Foxconn Utility CD (x1)
- 6497MB User Manual (x1)
- RAID User Manual (x1) (optional)
- ICH6R RAID Floppy (x1) (optional)
- IDE Ribbon Cable (x1)
- FDD Ribbon Cable (x1)
- I/O Shield (x1)
- S-ATA Signal Cable (x1)
- S-ATA Power Cable (x1)

Declaration of conformity

CE

HON HAI PRECISION INDUSTRY COMPANY LTD
66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT,
TAIPEI HSIEN, TAIWAN, R.O.C.

declares that the product

Motherboard

6497MB

is in conformity with
(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

☑ EN 55022/A1: 2000	Limits and methods of measurements of radio disturbance characteristics of information technology equipment
☑ EN 61000-3-2/A14:2000	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions (equipment input current <= 16A per phase)
☑ EN 61000-3-3/A1:2001	Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <= 16A
☑ EN 55024/A1:2001	Information technology equipment-Immunity characteristics limits and methods of measurement

Signature : James Liang Place / Date : TAIPEI/2004

Printed Name : James Liang Position/ Title : Assistant President

Declaration of conformity

Trade Name:	Foxconn
Model Name:	**6497MB**
Responsible Party:	PCE Industry Inc.
Address:	458 E. Lambert Rd. Fullerton, CA 92835
Telephone:	714-738-8868
Facsimile:	714-738-8838
Equipment Classification:	FCC Class B Subassembly
Type of Product:	Motherboard
Manufacturer:	**HON HAI PRECISION INDUSTRY COMPANY LTD**
Address:	66 , CHUNG SHAN RD., TU-CHENG INDUSTRIAL DISTRICT, TAIPEI HSIEN, TAIWAN, R.O.C.

Supplementary Information:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tested to comply with FCC standards.

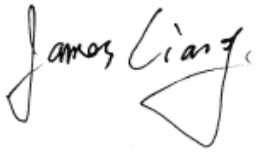
Signature :  Date : 2004

Table of Contents

Warning:

1. Attach the CPU and heatsink using silica gel to ensure full contact.
2. It is suggested to select high-quality, certified fans in order to avoid damage to the motherboard and CPU due high temperatures.
3. Never turn on the machine if the CPU fan is not properly installed.
4. Ensure that the DC power supply is turned off before inserting or removing expansion cards or other peripherals, especially when you insert or remove a memory module. Failure to switch off the DC power supply may result in serious damage to your system or memory module.

Warning:

We cannot guarantee that your system will operate normally while over-clocked. Normal operation depends on the over-clock capacity of your device.

Attention:

Since BIOS programs are upgraded from time to time, the BIOS description in this manual is just for reference. We do not guarantee that the content of this manual will remain consistent with the actual BIOS version at any given time in the future.

Attention:

The pictures of objects used in this manual are just for your reference. Please refer to the physical motherboard.

This manual is suitable for 6497MB motherboard. Each motherboard is carefully designed for the PC user who wants diverse features.

-L	with onboard 100M LAN
-K	with onbaord 1G LAN
-6	with 6 channel audio
-8	with 8 channel audio
-E	with 1394 function
-S	with SATA function
-R	with RAID function

You can find PPID label on the motherboard. It indicates the functions that the motherboard has.

For example:

On the blue mark of the PPID label, it means the motherboard supports 6-channel audio(-6), 1394 port(-E), onboard 100M LAN (-L), SATA function(-S).

Chapter 1

Thank you for buying Foxconn's 6497MB series motherboard. This series of motherboard is one of our new products, and offers superior performance, reliability and quality, at a reasonable price. This motherboard adopts the advanced SiS649 + SiS964/SiS964L chipset, providing users a computer platform with a high integration-compatibility-performance price ratio.

This chapter includes the following information:

- Main Features
- Motherboard Layout

Main Features

Size

- mATX form factor of 9.6 inch x 8.5 inch

Microprocessor

- Supports Intel® Prescott-T processor in an LGA775 package
- Supports FSB at 533/800 MHz
- Supports Hyper-Threading technology

Chipset

- SiS649(North Bridge) + SiS964/SiS964L (South Bridge)

System Memory

- Two 184-pin DIMM slots
- Supports up to 2 GB DDR memory
- Supports Single-Channel DDR 400/333/266
- Registered memory not supported
- Supports 128 Mb, 256 Mb, 512 Mb technologies

USB 2.0 Ports

- Supports hot plug
- Eight USB 2.0 ports (four rear panel ports, two onboard USB headers providing four extra ports)
- Supports wake-up from S1 and S3 mode
- Supports USB 2.0 Protocol up to 480 Mbps transmission rate

Onboard Serial ATA (optional)

- 150 MBps transfer rate
- Supports two S-ATA devices
- Supports RAID 0, RAID 1, JBOD

Onboard 1394 (-E) (optional) IEEE 1394

- Support hot plug
- With rate of transmission at 400 Mbps
- Self-configured addressing
- Can connect with 2 independent 1394 units synchronously at most

Onboard LAN (-L/-K) (optional)

- Supports 10/100/1000 (-K optional) Mbit/sec Ethernet
- LAN interface built-in on board

Onboard Audio (-6)(optional) channel

- AC'97 2.3 Specification Compliant
- Supports SPDIF output
- Onboard Line-in jack, Microphone-in jack, Line-out jack
- Supports 6-channel audio (setting via software)

Onboard Audio (-8)(optional) channel

- Supports 8-channel audio
- Supports SPDIF output
- Supports high quality differential CD input

PCI Express x16 Support

- Supports 4 GB/sec (8 GB/sec concurrent) bandwidth
- Low power consumption and power management features

Green Function

- Supports ACPI (Advanced Configuration and Power Interface)
- Supports S0 (normal), S1 (power on suspend), S3 (suspend to RAM), S4 (Suspend to disk - depends on OS), and S5 (soft - off).

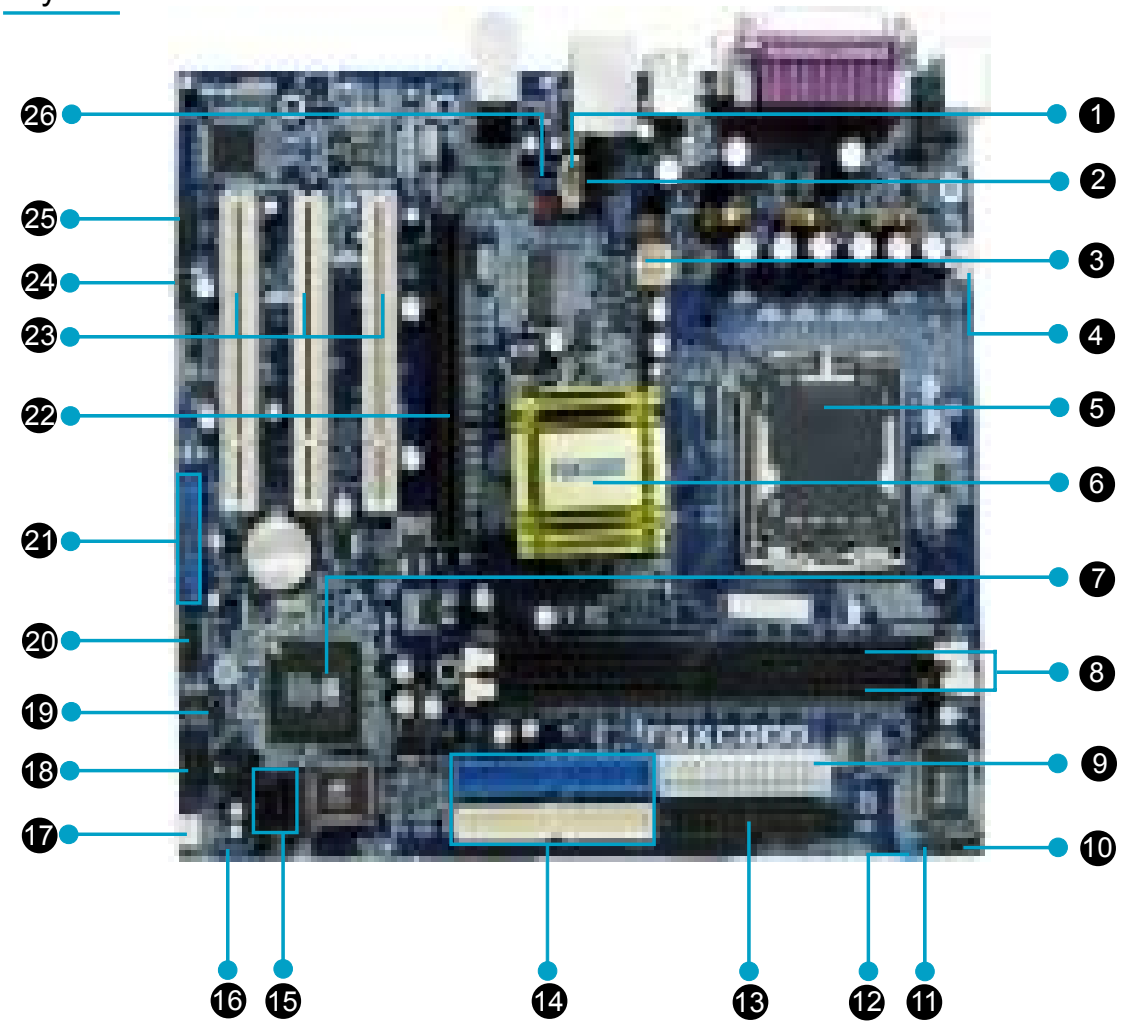
Expansion Slots

- Three PCI slots
- One PCI Express x16 Graphics slot

Advanced Features

- PCI 2.3 specification compliant
- Supports Windows 2000/XP soft-off
- Supports PC Health function (capable of monitoring system voltage, CPU temperature, system temperature, and fan speed)

Layout



1.AUX_IN Connector (optional)
2.CD_IN Connector
3.4-pin ATX_12V Power Connector
4.CPU Fan Connector
5.LGA775 CPU Socket
6.North Bridge: SiS649/SiS662 Chipset
7.South Bridge: SiS964 Chipset
8.184-pin DIMM Slots
9.24-pin ATX Power Connector
10.IrDA Connector
11.Chassis Intruder Connector
12.BIOS Protection Jumper
13.FDD Connector
14.ATA 133 /100/66 IDE Connectors
15.Serial ATA Connectors (optional)
16.Clear CMOS Jumper
17.System Fan Connector
18.Front Panel Connector
19.Speaker Connector
20.COM2 Connector
21.USB Connectors
22.PCI Express x16 Slot
23.PCI Expansion Slots
24.SPDIF Out Connector (optional)
25.1394 Connector (optional)
26.Front Audio Connector

Note: This layout is provided for reference, please refer to the physical motherboard.

Chapter 2

This chapter introduces the hardware installation process, including the installation of the CPU, memory, power supply, slots, rear panel and pin headers, and the mounting of jumpers. Caution should be exercised during the installation of these modules. Please refer to the motherboard layout prior to any installation and read the contents in this chapter carefully.

This chapter includes the following information:

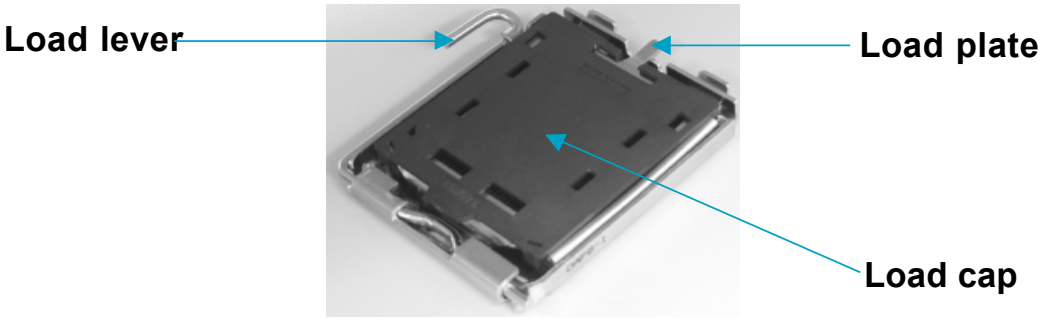
- CPU
- Memory
- Power supply
- Rear Panel Connectors
- Other Connectors
- Expansion Slots
- Jumpers

CPU

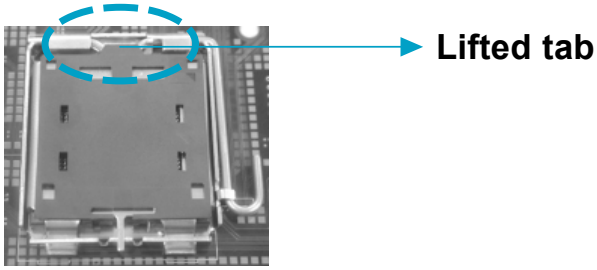
This motherboard supports single Pentium® 4 Processor including Prescott desktop CPUs in an LGA775 package. It also supports Hyper-Threading Technology and FSB Dynamic Bus Inversion (DBI).

Installation of CPU

Below is the CPU socket illustration. Follow these procedures to install a CPU.

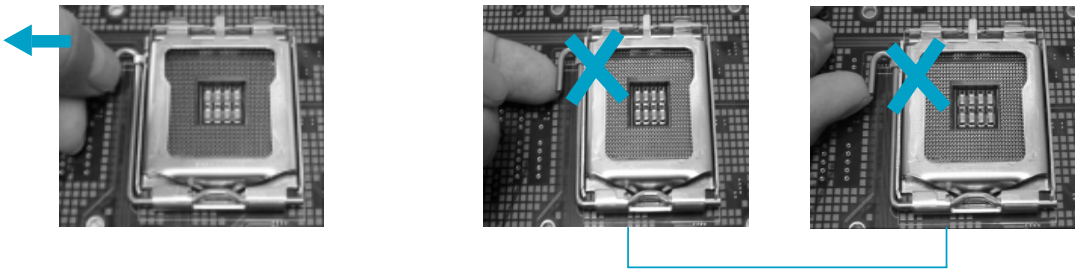


1. Use thumb & forefinger to hold the lifted tab of the cap.



2. Lift the cap up and pick to upload the cap completely from the socket.

3. Use thumb & forefinger to hold the hook of the load lever and pull the lever sideways to unlock it.

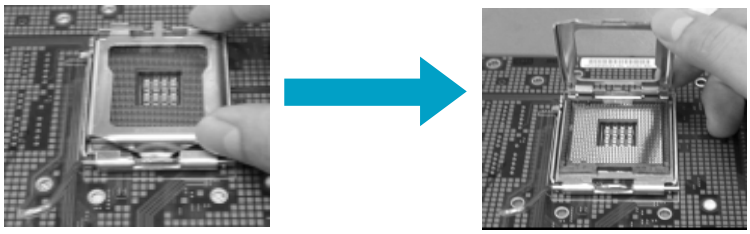


Correct Wrong

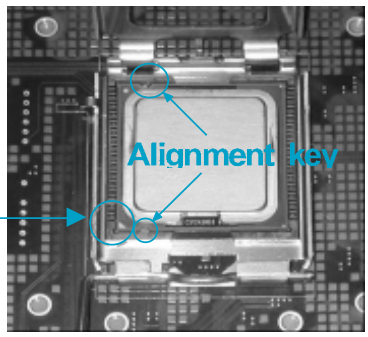
Warning:

DO NOT use finger to lift the locking lever, the improper operation will cause finger hurt and the SKT in a poor operation condition.

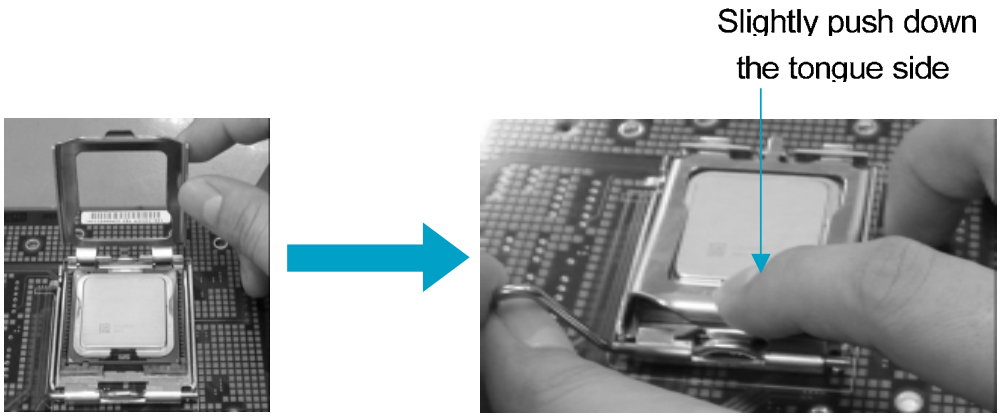
4. Lift up the lever. Use thumb to open the load plate. Be careful not to touch the contacts.



5. Hold the CPU and tilt it to some degree since the contacts are designed to be hooked, then match the triangle marker to Pin 1 position as shown below. Carefully insert the CPU into the socket until it fits in place.



6. Close the load plate, and slightly push down the tongue side.



7. Lower the lever and lock it to the load plate, then the CPU is locked completely.

Note :

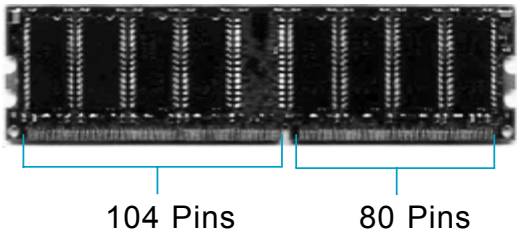
Excessive temperatures will severely damage the CPU and system. Therefore, you should install CPU cooling fan and make sure that the cooling fan works normally at all times in order to prevent overheating and damaging to the CPU. Please refer to your CPU fan user guide to install it properly.

Memory

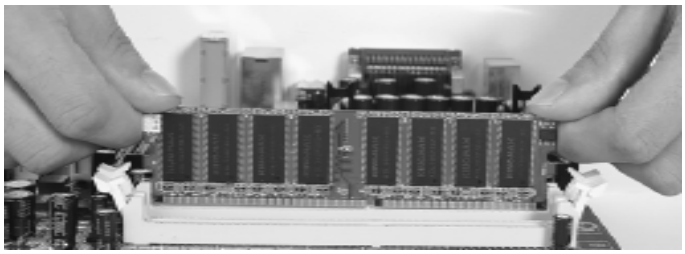
This motherboard includes two 184-pin slots with 2.5 V for DDR. These slots support 256 Mb, 512 Mb and 1 Gb DDR technologies for x8 and x16 devices. You must install at least one memory bank to ensure normal operation.

Installation of DDR Memory

1. There is only one gap near the center of the DIMM slot, and the memory module can be fixed in one direction only. Unlock a DIMM slot by pressing the module clips outward.
2. Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot.



3. The plastic clips at both sides of the DIMM slot will lock automatically.



Warning :

Be sure to unplug the AC power supply before adding or removing expansion cards or other system peripherals, especially the memory devices, otherwise your motherboard or the system memory might be seriously damaged.

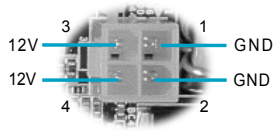
Power Supply

This motherboard uses an ATX power supply. In order to avoid damaging any devices, make sure that they have been installed properly prior to connecting the power supply.

4-pin ATX_12 V Power Connector: PWR2

The ATX power supply connects to PWR2 and provides power to the CPU.

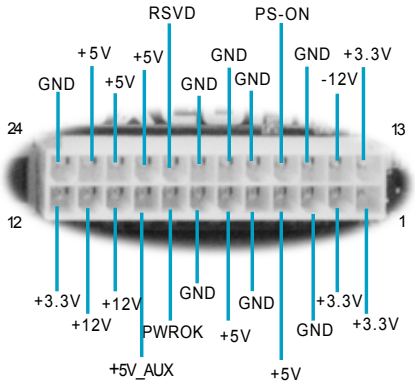
4-pin ATX_12 V power connector



24-pin ATX power connector: PWR1

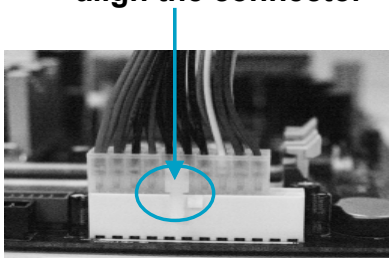
PWR1 is the ATX power supply connector. Make sure that the power supply cable and pins are properly aligned with the connector on the motherboard. Firmly plug the power supply cable into the connector and make sure it is secure.

24-pin ATX power connector



Note: We strongly recommend that you use 24-pin power supply. If you want to use 20-pin power supply, you need to align the ATX power connector according to the right picture.

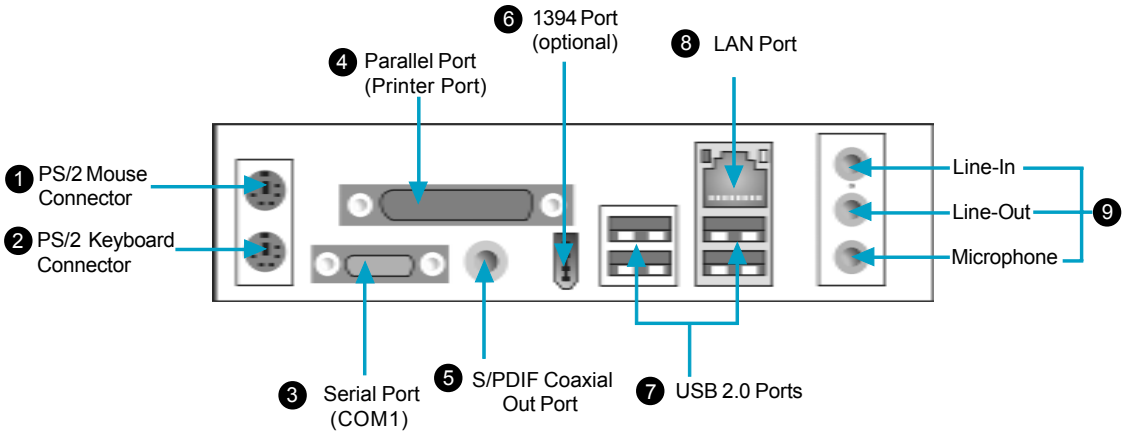
align the connector



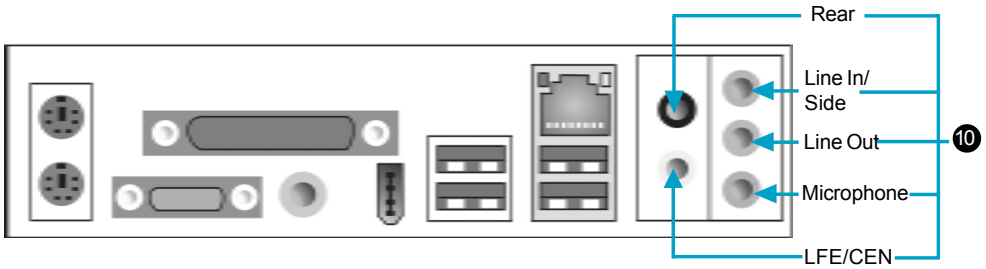
Rear Panel Connectors

This motherboard provides the ports as below:

For 6-channel



For 8-channel



❶ PS/2 Mouse Connector

This green 6-pin connector is for a PS/2 mouse.

❷ PS/2 Keyboard Connector

This purple 6-pin connector is for a PS/2 keyboard.

❸ Serial Port (COM1)

This 9-pin COM1 port is for pointing devices or other serial devices.

❹ Parallel Port (Printer Port)

This 25-pin port connects a parallel printer, a scanner, or other devices.

❺ S/PDIF Coaxial Out Port

This port connects to external audio output devices with coaxial cable connectors.

❻ 1394 Port (optional)

This digital interface supports electronic devices such as digital cameras, scanners, and printers.

❼ USB 2.0 Ports

These four Universal Serial Bus (USB) ports are available for connecting USB 2.0/1.1 devices.

❽ LAN Port (-L/-K) (optional)

This port allows connection to a Local Area Network (LAN) through a network hub.

❾ Line in, Line out, Microphone Jacks (for 6-channel)

When using a 2-channel sound source, the Line-Out jack is used to connect to speaker or headphone; the Line-In jack connects to an external CD player, tape player or other audio device. The Microphone jack is used to connect to the microphone.

When using a 6-channel sound source, connect the front speaker to the green audio output; connect the surround sound speaker to the blue audio output; connect the center speaker/subwoofer to the red Microphone output.

❿ Line in, Line out, Microphone, Rear, LEF/CEN, Side Jacks (for 8-channel)

When using an 8-channel sound source, connect the front speaker to the green audio output; connect the rear sound speaker to the black audio output; connect the center speaker/subwoofer to the yellow audio output; connect the side sound speaker to the blue audio output.

Other Connectors

This motherboard includes connectors for floppy, IDE devices, Serial ATA devices, USB devices, IR module, and others.

FDD connector: FLOPPY

This motherboard includes a standard FDD connector, supporting 360 K, 720 K, 1.2 M, 1.44 M, and 2.88 M FDDs.

HDD Connectors: PIDE & SIDE

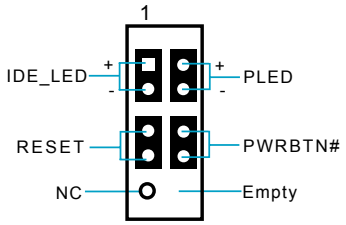
These connectors support the provided Ultra DMA 133/100/66 IDE hard disk ribbon cable. Connect the cable's blue connector to the primary (recommended) or secondary IDE connector, then connect the gray connector to the Ultra DMA 133/100/66 slave device (hard disk drive) and the black connector to the Ultra DMA 133/100/66 master device. If you install two hard disks, you must configure the second drive as a slave device by setting its jumper accordingly. Refer to the hard disk documentation for the jumper settings.

Attention:

Ribbon cables are directional, therefore, make sure to always connect with the cable on the same side as pin 1 of the PIDE/SIDE or FDD connector on the motherboard.

Front Panel Connector: FP1

This motherboard includes one connector for connecting the front panel switch and LED indicators.



FP1

IDE LED Connector (IDE_LED)

The connector connects to the case's IDE indicator LED indicating the activity status of hard disks.

Reset Switch (RESET)

Attach the connector to the Reset switch on the front panel of the case; the system will restart when the switch is pressed.

Power LED Connector (PLED)

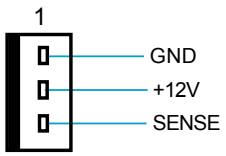
Attach the connector to the power LED on the front panel of the case. The Power LED indicates the system's status. When the system is in S0 status, the LED is on. When the system is in S1 status, the LED is blink; When the system is in S3, S4, S5 status, the LED is off.

Power Switch Connector (PWRBTN#)

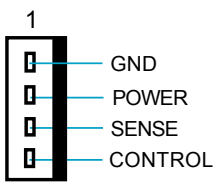
Attach the connector to the power button of the case. Pushing this switch allows the system to be turned on and off rather than using the power supply button.

Fan Connectors: CPU_FAN, FAN1

The fan speed of CPU_FAN and FAN1 can be detected and viewed in "PC Health Status" section of the CMOS Setup. These fans will be automatically turned off after the system enters S3, S4 and S5 mode. Plug the CPU cooling fan cable into the 3-pin CPU FAN power supply on the motherboard. Connect the case cooling fan connector to FAN1.



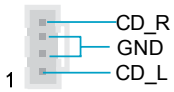
FAN1



CPU_FAN

Audio Connectors: CD_IN, AUX_IN (optional)

CD_IN, AUX_IN is Sony standard CD audio connectors, it can be connected to a CD-ROM drive through a CD audio cable.

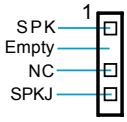


CD_IN

AUX_IN

Speaker Connector: SPEAKER

The speaker connector is used to connect speaker of the chassis.

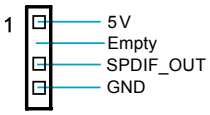


SPEAKER

SPDIF Out Connector: SPDIF OUT (optional)

The S/PDIF out connector is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder.

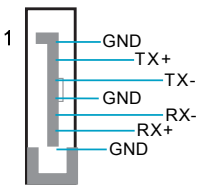
Note: The empty pin of SPDIF cable should be aligned to empty pin of SPDIF out connector.



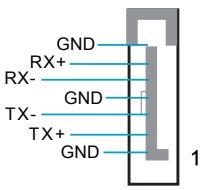
SPDIF_OUT

S-ATA Connectors: SATA_1, SATA_2 (optional)

The S-ATA headers are used to connect the S-ATA devices to the motherboard. These connectors support the thin Serial ATA cables for primary internal storage devices. The current Serial ATA interface allows up to 150MB/s data transfer rate.



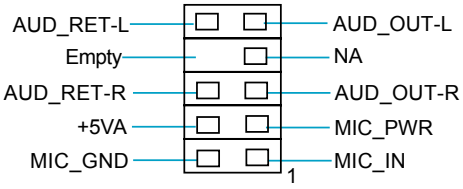
SATA_1



SATA_2

Front Audio Connector: F_AUDIO

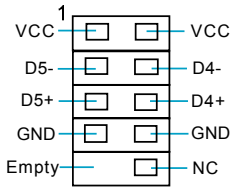
The audio interface provides two kinds of audio output choices: the Front Audio, the Rear Audio. Their priority is sequenced from high to low (Front Audio to Rear Audio). If headphones are plugged into the front panel of the chassis (using the Front Audio), then the Line-out (Rear Audio) on the rear panel will not work. If you do not want to use the Front Audio, pin 5 and 6, pin9 and 10 must be SHORT, and then the signal will be sent to the rear audio port.



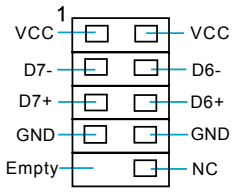
F_AUDIO

USB Connectors: F_USB1, F_USB2

Besides four USB ports on the rear panel, the series of motherboards also have two 10-pin connectors on board which may connect to front panel USB cable(optional) to provide additional four USB ports.



F_USB 1

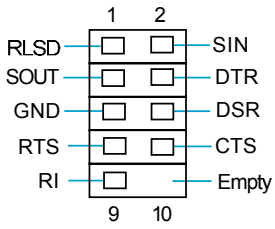


F_USB 2

Additional COM Connector: COM2

This motherboard provides an additional serial COM connector for your machine.

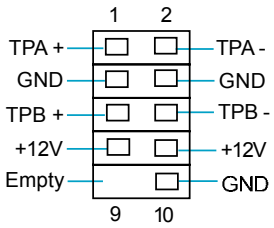
Connect one side of a switching cable to the connector, then attach the serial COM device to the other side of the cable.



COM2

1394 Connector: F_1394 (optional)

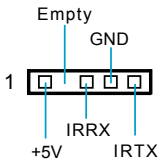
The 1394 expansion cable can be connected to either the front (provided that the front panel of your chassis is equipped with the appropriate interface) or rear panel of the chassis.



F_1394

IrDA Connector: IR

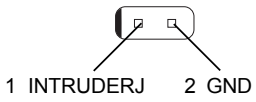
This connector supports wireless transmitting and receiving device. Before using this function, configure the settings of IR Mode from the “Integrated Peripherals” section of the CMOS Setup.



IR

Chassis Intruder Connector: INTRUDER

The connector connects to the chassis security switch on the case. The system can detect the chassis intrusion through the status of this connector. To utilize this function, set “Case Open Warning” to “Enabled” in the “PC Health Status” section of the CMOS Setup. Save and exit to make sure this function takes effect.



INTR

Expansion Slots

This motherboard includes three 32-bit Master PCI bus slots and one PCI Express x 16 slot.

PCI Slots

The expansion cards can be installed in the three PCI slots. When you install or take out such cards, you must make sure that the power plug has been pulled out. Please read carefully the instructions provided for such cards, and install and set the necessary hardware and software for such cards, such as the jumper or BIOS setup.

PCI Express Slot

PCI Express will offer the following design advantages over the PCI and AGP interface:

-Compatible with existing PCI drivers and software and Operating Systems.
-High Bandwidth per Pin. Low overhead. Low latency.
-PCI Express supports a raw bit-rate of 2.5 Gb/s on the data pins. This results in a real bandwidth per pair of 250 MB/s.
-A point to point connection, allows each device to have a dedicated connection without sharing bandwidth.
-Ability to comprehend different data structure.
-Low power consumption and power management features

PCI Express will take two forms, x16 and x1 PCI Express slots. Whereas the x16 slot is reserved for graphic/video cards, the x1 slot is designed to accommodate less bandwidth-intensive cards, such as a modem or LAN card.

The difference in bandwidth between the x16 and x1 slots is notable to be sure, with the x16 slot pushing 4GB/sec (8GB/sec concurrent) of bandwidth, and the x1 PCI Express slot offering 250MB/sec.

Warning:

If a performance graphics card was installed into 16x PCI Express slot, 2 x 12 pin power supply was strongly recommended since that card maybe draws 75W power.

Jumpers

The users can change the jumper settings on this motherboard if needed. This section explains how to use the various functions of this motherboard by changing the jumper settings. Users should read the following content carefully prior to modifying any jumper settings.

Description of Jumpers

1. For the jumpers on this motherboard, pin 1 can be identified by the silk-screen printed "△" next to it. However, in this manual, pin 1 is simply labeled as "1".
2. The following table provides some explanation of the jumper pin settings. User should refer to this when adjusting jumper settings.

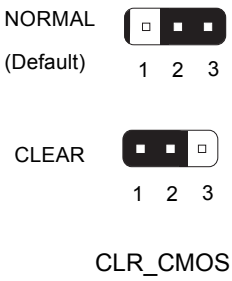
Jumper	Diagram	Definition	Description
		1-2	Set pin1 and pin2 closed
		2-3	Set pin2 and pin3 closed
		Closed	Set the pin closed
		Open	Set the pin opened

Clear CMOS Jumper: CLR_CMOS

The motherboard uses the CMOS RAM to store all the set parameters. The CMOS can be cleared by removing the CMOS jumper.

How to clear CMOS?

1. Turn off the AC power supply and connect pins 1 and 2 together using the jumper cap.
2. Return the jumper setting to normal (pins 2 and 3 together with the jumper cap).
3. Turn the AC power supply back on.



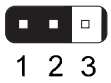
Warning:

1. Disconnect the power cable before adjusting the jumper settings.
2. Do not clear the CMOS while the system is turned on.

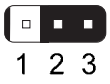
BIOS Protection Jumper: FWH_EN1

The motherboard BIOS is inside the FWH. If the jumper FWH_EN1 is set as CLOSED, the system BIOS is protected from being attacked by a serious virus, such as the CIH virus. You will be unable to flash the BIOS to the motherboard when the system BIOS is protected.

CLOSED
DISABLE



OPEN
ENABLE



FWH_EN1

Chapter 3

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

You have to run the Setup Program when the following cases occur:

1. An error message appears on the screen during the system POST process.
2. You want to change the default CMOS settings.

This chapter includes the following information:

- Enter BIOS Setup
- Main Menu
- Standard CMOS Features
- BIOS Features
- Advanced BIOS Features
- Advanced Chipset Features
- Integrated Peripherals
- Power Management Setup
- PnP/PCI Configurations
- PC Health Status
- Frequency/Voltage Control
- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor/User Password
- Save & Exit Setup
- Exit Without Saving

Enter BIOS Setup

The BIOS is the communication bridge between hardware and software, correctly setting up the BIOS parameters is critical to maintain optimal system performance. Power on the computer, when the following message briefly appears at the bottom of the screen during the POST (Power On Self Test), press <Del> key to enter the AWARDBIOS CMOS Setup Utility.

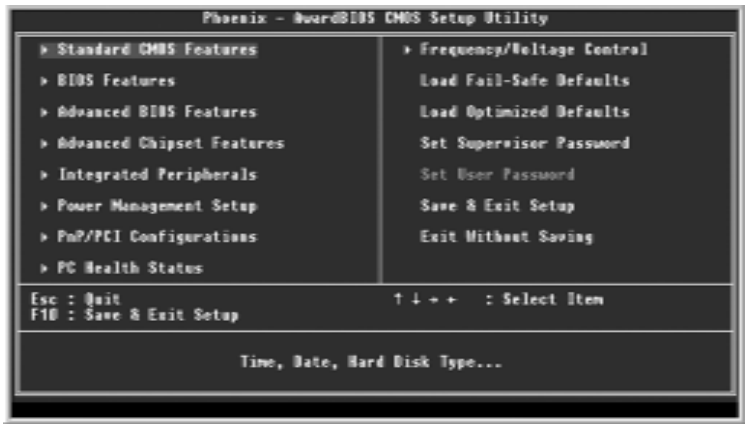
Press TAB to show POST screen, DEL to enter SETUP.

Note:

We do not suggest that you change the default parameters in the BIOS Setup, and we shall not be responsible for any damage that result from any changes that you make.

Main Menu

The main menu allows you to select from the list of setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept or go to the sub-menu.



Main Menu

The items in the main menu are explained below:

Standard CMOS Features

The basic system configuration can be set up through this menu.

BIOS Features
The special features can be set up through this menu.

Advanced BIOS Features
The advanced system features can be set up through this menu.

Advanced Chipset Features
The values for the chipset can be changed through this menu, and the system performance can be optimized.

Integrated Peripherals
Onboard peripherals can be set up through this menu.

Power Management Setup
All the items of Green function features can be set up through this menu.

PnP/PCI Configurations
The system's PnP/PCI settings and parameters can be modified through this menu.

PC Health Status
This will display the current status of your PC.

Frequency/Voltage Control
Frequency and voltage settings can be adjusted through this menu.

Load Fail-Safe Defaults
The default BIOS settings can be loaded through this menu.

Load Optimized Defaults
The optimal performance settings can be loaded through this menu, however, the stable default values may be affected.

Set Supervisor/User Password
The supervisor/user password can be set up through this menu.

Save & Exit Setup
Save CMOS value settings to CMOS and exit setup.

Exit Without Saving
Abandon all CMOS value changes and exit setup.

Standard CMOS Features

This sub-menu is used to set up the standard CMOS features, such as the date, time, HDD model and so on. Use the arrow keys select the item to set up, and then use the <PgUp> or <PgDn> keys to choose the setting values.

Standard CMOS Features Menu

Date

This option allows you to set the desired date (usually as the current date) with the <day><month><date><year> format.

Day—weekday from Sun. to Sat., defined by BIOS (read-only).

Month—month from Jan. to Dec..

Date—date from 1st to 31st, can be changed using the keyboard.

Year—year, set up by users.

Time

This option allows you to set up the desired time (usually as the current time) with <hour><minute><second> format.

IDE Channel 0/1 Master/Slave

These categories identify the HDD types of 1 IDE channel installed in the computer system. There are three choices provided for the Enhanced IDE BIOS: None, Auto, and Manual. “None” means no HDD is installed or set; “Auto” means the system can auto-detect the hard disk when booting up; by choosing “Manual” and changing Access Mode to “CHS”, the related information should be entered manually. Enter the information directly from the keyboard and press < Enter>:

Cylinder	number of cylinders	Head	number of heads
Precomp	write pre-compensation	Landing Zone	landing zone
Sector	number of sectors		

Award (Phoenix) BIOS can support 3 HDD modes: CHS, LBA and Large or Auto mode.

CHS	For HDD<528MB
LBA	For HDD>528MB & supporting LBA (Logical Block Addressing)
Large	For HDD>528MB but not supporting LBA
Auto	Recommended mode

Drive A/B

This option allows you to select the kind of FDD to be installed, including [None], [360K, 5.25 in], [1.2M, 5.25 in], [720K, 3.5 in], [1.44M, 3.5 in] and [2.88 M, 3.5 in].

Video

The following table is provided for your reference in setting the display mode for your system.

EGA/VGA	Enhanced Graphics Adapter / Video Graphic Array. For EGA, VGA, SEGA, SVGA, or PGA monitor adapters.
CGA 40	Color Graphic Adapter, powering up in 40 column mode.
CGA 80	Color Graphic Adapter, powering up in 80 column mode.
MONO	Monochrome adapter, including high resolution monochrome adapters.

Halt On

This category determines whether or not the computer will stop if an error is detected during powering up.

All Errors	Whenever the BIOS detects a nonfatal error, the system will stop and you will be prompted.
No Errors	The system boot will not stop for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; but it will stop for all other errors.
All, But Diskette	The system boot will not stop for a diskette error; but it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error, but it will stop for all other errors.

Memory

This is a Display-Only Category, determined by POST (Power On Self Test) of the BIOS.

Base Memory	The BIOS POST will determine the amount of base (or conventional) memory installed in the system.
Extended Memory	The BIOS determines how much extended memory is present during the POST.
Total Memory	Total memory of the system.

BIOS Features

BIOS Features Menu

❖ **[SuperBoot] SuperBoot (Default: Disabled)**

SuperBoot allows system-relevant information to be stored in CMOS upon the first normal startup of your PC, and the relevant parameters will be restored to help the system start up more quickly on each subsequent startup. The available setting values are: Disabled and Enabled.

❖ **[SuperBIOS-Protect] SuperBIOS-Protect (Default: Disabled)**

SuperBIOS-Protect function protects your PC from viruses, e.g. CIH. The available setting values are: Disabled and Enabled.

❖ **[SuperRecovery] SuperRecovery Hotkey (Default: LSHIFT+F1)**

SuperRecovery provides the users with an excellent data protection and HDD recovery function. There are 12 optional hotkeys and the default hotkey is LSHIFT+F1.

❖ **[SuperSpeed] SuperSpeed**

CPU Clock (Default: depend on CPU)

This option is used to set the CPU clock.

CPU:DRAM Frequency Ratio (Default: SPD)

This item is used to set the DRAM frequency ratio.

Warning:

Be sure your selection is right. CPU overclock will be dangerous! We will not be responsible for any damage caused.

Advanced BIOS Features

Advanced BIOS Features Menu

❖CPU Feature

Press <Enter> to set the items of CPU feature. Please refer to page 30.

❖Hard Disk Boot Priority

This option is used to select the priority for HDD startup. After pressing <Enter>, you can select the HDD using the <PageUp>/<PageDn> or Up/Down arrow keys, and change the HDD priority using <+> or <->; you can exit this menu by pressing <Esc>.

❖Virus Warning (Default: Disabled)

Allows you to choose the VIRUS warning feature for IDE hard disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and an alarm will beep. The setting values are: Disabled and Enabled.

Note: Such function provides protection to the start-up sector only; it does not protect the entire hard disk.

❖CPU L1 & L2 Cache (Default: Enabled)

This option is used to enable or disable the CPU L1&L2 cache. Leave it at default unless the system runs abnormally when it is set as “Enabled”; Setting it as “Disabled” will adversely affect the system performance.

❖CPU L3 Cache (Default: Enabled)(optional)

This option is used to enable or disable CPU L3 cache. The available settings include Enabled and Disabled.

❖ **Hyper-Threading Technology (Default: Enabled)**

This option is used to turn on or off the Hyper-Threading function of the CPU. The available setting values are: Disabled and Enabled.

Note: This function will not be displayed until a CPU that supports Hyper-Threading has been installed.

❖ **First/Second/Third Boot Device (Default: Floppy/Hard Disk/CDROM)**

This option allows you to set the boot device sequence. The available setting values are: Floppy, LS120, Hard Disk, CDROM, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, LAN and Disabled.

❖ **Boot Other Device (Default: Enabled)**

With this function set to Enabled, the system will boot from some other devices if the first/second/third boot devices failed. The available setting values are: Disabled and Enabled.

❖ **Security Option (Default: Setup)**

When it is set to “Setup”, a password is required to enter the CMOS Setup screen; When it is set to “System”, a password is required not only to enter CMOS Setup, but also to start up your PC.

CPU Feature Menu

❖ **Thermal Management (Default: Thermal Monitor 1)**

This option is used to manage CPU thermal.

❖ **Limit CPUID MaxVal (Default: Disabled)**

The option is used to set limit CPUID MaxVal. The available setting values are: Disabled and Enabled.

Advanced Chipset Features

Advanced Chipset Features Menu

❖ **DRAM Clock/Timing Control**

Press <Enter> to set the sub-items of the DRAM clock/ timing. For details, please refer to page 32.

❖ **System BIOS Cacheable (Default: Enabled)**

Select “Enabled” to allow caching of the system BIOS which may improve performance. If any other program writes to this memory area, a system error may result. The available setting values are: Enabled and Disabled.

❖ **Video RAM Cacheable (Default: Enabled)**

It is recommended that users set this option as the value “Disabled” so as to free the memory space and reduce the possibility of conflict occurrence.

❖ **Memory Hole At 15M-16M (Default: Disabled)**

This option is used to determine whether the 15M-16M address field of memory is reserved for the ISA expansion card. The available setting values are: Enabled and Disabled.

DRAM Clock/Timing Control Menu

❖ **DDR CAS Latency (Default: SPD)**

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

❖ **DRAM Timing Control (Default: Auto)**

Selects whether DRAM timing is controlled by the SPD (Serial Presence Detect) EEPROM on the DRAM module. Setting to “Auto” enables DRAM timings to be determined by BIOS based on the configurations on the SPD. Selecting “Manual” allows users to configure the DRAM timings manually. The setting values are: Auto, Manual.

Note: The following options can be activated and configured only when this option is set as “Manual”.

❖ **RAS to CAS Delay (tRCD) (Default: Depend on memory)**

It is used to set the delay time between RAS (Row Address Strobe) and CAS (Column Address Strobe) signals. The setting values are: 2T, 3T, 4T, 5T.

❖ **Precharge Time (tRP) (Default: Depend on memory)**

It is used to set the precharge time of RAS. The setting values are: 2T, 3T, 4T, 5T.

❖ **RAS to Active Time (tRCD) (Default: Depend on memory)**

It is used to set the RAS to active time. The setting values are: 4T-15T.

❖ **Write Recovery Time (tWR) (Default: Depend on memory)**

It is used to set the write recovery time. The setting values are: 1T, 2T, 3T, 4T, 5T, 6T.

❖ **DDR 128-Bit Access (Default: Disabled)**

It is used to set whether 128-bit access is allowed or not.

Integrated Peripherals

Integrated Peripherals Menu

❖ **SIS OnChip IDE Device**

Press the <Enter> key to enter the setup sub-menu. For details, please refer to page 34.

❖ **SIS OnChip IDE Device**

Press the <Enter> key to enter the setup sub-menu. For details, please refer to page 35.

❖ **Onboard SuperIO Device**

Press the <Enter> key to enter the setup sub-menu. For details, please refer to page 36.

❖ **IDE HDD Block Mode (Default: Enabled)**

This option is used to set whether IDE HDD block mode is allowed. Selecting “Enabled” will set IDE HDD as block mode. When disabled, IDE HDD does not support block mode.

❖ **MAC Access Interface (Default: EDB Bus) (optional)**

This option is visible only when your motherboard features 10/100M LAN.

SIS Onchip IDE Menu

❖**Internal PCI/IDE (Default: Both)**

This option is used to set the ports of onboard IDE. The available setting values are: Disabled, Primary, Secondary and Both.

❖**Primary/Secondary Master/Salve PIO (Default: Auto)**

These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best or select a PIO mode from 0-4.

❖**Primary/Secondary Master/Salve UDMA (Default: Auto)**

UltraDMA technology provides faster access to IDE devices. If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. The available setting values are: Disabled and Auto.

❖**IDE Burst Mode (Default: Enabled)**

This option is used to set whether the IDE burst mode is allowed. The available setting values are: Disabled and Enabled.

SIS Onchip PCI Device Menu

❖**SIS USB Controller (Default: Enabled)**

This option is used to enable or disable SIS USB controller.

❖**USB Keyboard/Mouse Support (Default: Enabled)**

Select “Enabled” if you need to use a USB-interfaced keyboard or mouse in the operating system. The setting options include Enabled and Disabled.

❖**SIS AC97 AUDIO (Default: Enabled)**

This option is used to set whether onboard AC97 Audio is enabled. The available setting values are: Disabled and Auto.

❖**SIS 10/100M ETHERNET (Default: Enabled) (optional)**

This option is used to set whether 10/100M Ethernet LAN is enabled. The available setting values are: Disabled and Auto.

❖**SIS MAC Address Input (optional)**

When Machine MAC Address is set as “Enabled”, you can select the option and key in MAC address.

❖**Onboard LAN Controller (Default: Enabled) (optional)**

This option is used to set whether the onboard 1000M LAN controller is enabled. The available setting values are: Disabled and Enabled.

❖**Onboard LAN Boot ROM (Default: Disabled)**

This option is used to decide whether to invoke the boot ROM of the onboard LAN chip. The available setting values are: Disabled and Enabled.

Onboard SuperIO Device Menu

❖ **Onboard Serial Port 1/2 (Default: 3F8/IRQ4 /2F8/IRQ3)**

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port 1/2.

Note: Do not try to set the same values for serial ports 1 and 2.

❖ **UART Mode Select (Default: Normal)**

Use this option to select the UART mode. Setting values include Normal, IrDA, ASKIR. The setting value is determined by the infrared module installed on the board.

❖ **UR2 Duplex Mode (Default: Half)**

This option is available when UART 2 mode is set to either ASKIR or IrDA. This item enables you to determine the infrared function of the onboard infrared chip.

❖ **Onboard Parallel Port (Default: 378/IRQ7)**

This item allows you to determine onboard parallel port controller I/O address and interrupt request (IRQ). Setting values include Disabled, 378/IRQ7, 278/IRQ5, and 3BC/IRQ7.

❖ **Parallel Port Mode (Default: SPP)**

Select an address and corresponding interrupt for the onboard parallel port. Setting values include SPP, EPP, ECP, ECP+EPP.

❖ **ECP Mode Use DMA (Default: 3)**

Select a DMA Channel for the parallel port when using the ECP mode. This field is only configurable if Parallel Port Mode is set to ECP. The available setting values are: 3 and 1.

Power Management Setup

Power Management Setup Menu

❖ **ACPI Function (Default: Enabled)**

ACPI stands for “Advanced Configuration and Power Interface”. ACPI is a standard that defines power and configuration management interfaces between an operating system and the BIOS. In other words, it is a standard that describes how computer components work together to manage system hardware. In order to use this function the ACPI specification must be supported by the OS (for example, Windows 2000 or WindowsXP). The available setting values are: Enabled and Disabled.

❖ **ACPI Suspend Type (Default: S1 (POS))**

This option is used to set the energy saving mode of the ACPI function. When you select “S1 (POS)” mode, the power will not shut off and the power supply status will remain as it is. In S1 mode the computer can be resumed at any time. When you select “S3 (STR)” mode, the power will be cut off after a delay period. The status of the computer before it enters STR will be saved in memory, and the computer can quickly return to previous status when the STR function wakes. When you select “S1 & S3” mode, the system will automatically select the delay time.

❖ **Power Management (Default: User Define)**

This option is used to set the power management scheme. Available setting values are: User Define, Min Saving, and Max Saving.

❖ **Suspend Mode (Default: Disabled)**

This option is used to set the idle time before the system enters into sleep status. The setting values are Disabled and 1 Min-1 Hour.

❖**Video Off Method (Default: DPMS Supported)**

This option is used to define the video off method. “Blank Screen” mode means that after the computer enters power saving mode, only the monitor will close, however, the vertical and horizontal scanning movement of the screen continues. When you select the “V/H SYNC + Blank” mode the vertical and horizontal scanning movement of screen stops when the computer enters power saving mode. “DPMS Supported” mode is a new screen power management system, and it needs to be supported by the monitor you are using.

❖**Switch Function (Default: Break/Wake)**

This option is used to enable or disable switch function to wake up. The setting values are Disabled and Break/Wake.

❖**Hot Key Function As (Default: Power Off)**

The option is used to define the hot key function. The available setting values are Disabled, Power off and Suspend.

❖**HDD Off After (Default: Disabled)**

This option is used to define the continuous HDD idle time before the HDD enters power saving mode. The setting values are Disabled and 1 Min -15 Min.

❖**Power Button Override (Default: Instant Off)**

This option is used to set the power down method. This function is only valid for systems using an ATX power supply.

When “Instant Off” is selected, press the power switch to immediately turn off power. When “Delay 4 Sec” is selected, press and hold the power button for four seconds to turn off power.

❖**Power State Resume Control (Default: Always Off)**

This option is used to control power resume state. The available setting values are Always Off, Always On and Keep Pre-State.

❖**PM Wake Up Events**

Press <Enter> to set the items of PM Wake Up Events. Please refer to page 39.

PM Wake Up Events Menu

❖**RING Power Up Control (Default: Enabled)**

If this option is enabled, it allows the system to resume from a software power down or power saving mode whenever there is an incoming call to an installed fax/modem. This function needs to be supported by the relevant hardware and software. The setting values are: Disabled and Enabled.

❖**MACPME Power Up Control (Default: Enabled) (optional)**

This option is used to enable or disable the system to be waken up by SIS onboard LAN.

❖**PCIPME Power Up Control (Default: Enabled)**

This option is used to enable or disable the system to be waken up by PCI card.

❖**PS2KB Power Up Control (Default: Hot Key)**

This option is used to set which action will wake up PS/2 keyboard from S3/S4/S5 status. The hotkey is Ctrl+Alt+Backspace. The setting values are Any Key, Hot Key and Password.

❖**PS2MS Power Up Control (Default: Click)**

This option used to set which action will wake up PS/2 mouse from S3/S4/S5 status. The setting values are: Disabled, Click, Move & Click.

❖**Power UP by Alarm (Default: Disabled)**

This option is used to set the timing of the start-up function. In order to use this function, the start-up password function must be cancelled. Also, the PC power source must not be turned off.

❖**Month Alarm**

This option is used to set the timing for the start-up month. The setting values contain 1 - 12 and NA.

❖**Day of Month Alarm**
This option is used to set the timing for the start-up day of the month. The setting values contain 0 - 31.

❖**Time (hh:mm:ss) Alarm**
This option is used to set the timing for the start-up time. The setting values contain hh:0 – 23; mm:0 – 59; ss:0 – 59.

❖**Primary/Secondary IDE (Default: Disabled)**
When these items are enabled, the system will restart the power saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels. The setting values are Disabled and Enabled.

PnP/PCI Configurations

PnP/PCI Configurations Menu

❖**Init Display First (Default: PCI Slot)**

This item is used to set which display device will be used first when your PC starts up. The available setting values are: PCI Slot and PCIEx.

❖**Reset Configuration Data (Default: Disabled)**

This option is used to set whether the system is permitted to automatically distribute IRQ DMA and I/O addresses when each time the machine is turned on. The setting values are Disabled and Enabled.

❖**Resources Controlled By (Default: Auto (ESCD))**

This option is used to define the system resource control scheme. If all cards you use support PNP, then select Auto (ESCD) and the BIOS will automatically distributes interruption resources. If the ISA cards you installed not supporting PNP, you will need to select “Manual” and manually adjust interruption resources in the event of hardware conflicts. However, since this motherboard has no ISA slot, this option does not apply.

❖**PCI/VGA Palette Snoop (Default: Disabled)**

If you use a non-standard VGA card, use this option to solve graphic acceleration card or MPEG audio card problems (e.g., colors not accurately displayed). The setting values are Disabled and Enabled.

PC Health Status

PC Health Status menu

❖**CPU Warning Temperature (Default: Disabled)**

This option is used to set the warning temperature for the CPU. When the temperature of CPU is higher than setting value, the motherboard will send off warning information. The setting values are Disabled and 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, 70°C/158°F.

❖**Case Open Warning (Default: Disabled)**

This option is used to enable or disable case open warning function. The setting values are Disabled and Enabled.

❖**Smart Fan Controller (Default: Enabled)**

This option is used to enable or disable smart fan function. The setting values are Disabled and Enabled.

Frequency/Voltage Control

Frequency/Voltage Control Menu

❖ **CPU Clock Ratio (Default: based on CPU specifications)**

This option is used to set the ratio of an unlocked CPU. The possible settings range from a minimum of 0 to a maximum of 50.

Note: This option is invisible for locking frequency CPU.

❖ **Auto Detect DIMM/PCI Clk (Default: Enabled)**

This option is used to set whether the clock of an unused DIMM/PCI slot will be disabled to reduce electromagnetic interference. The available settings are Enabled and Disabled.

❖ **Spread Spectrum (Default: Disabled)**

When enabled, it can significantly reduce the EMI (Electromagnetic Interference) generated by the system.

Warning:

Be sure your selection is right. CPU overclock will be dangerous! We will not be responsible for any damage caused.

Load Fail-Safe Defaults

Press <Enter> to select this option. A dialogue box will pop up that allows you to load the default BIOS settings. Select <Y> and then press <Enter> to load the defaults. Select <N> and press <Enter> to exit without loading. The defaults set by BIOS set the basic system functions in order to ensure system stability. But if your computer cannot POST properly, you should load the fail-safe defaults to restore the original settings. Then carry out failure testing. If you only want to load the defaults for a single option, you can select the desired option and press the <F6> key.

Load Optimized Defaults

Select this option and press <Enter>, and a dialogue box will pop up to let you load the optimized BIOS default settings. Select <Y> and then press <Enter> to load the optimized defaults. Select <N> and press <Enter> to exit without loading. The defaults set by BIOS are the optimized performance parameters for the system, to improve the performance of your system components. However, if the optimized performance parameters are not supported by your hardware devices, it will likely cause system reliability and stability issues. If you only want to load the optimized default for a specific option, select the desired option and press the <F7> key.

Set Supervisor/User Password

The access rights and permissions associated with the Supervisor password are higher than those of a regular User password. The Supervisor password can be used to start the system or modify the CMOS settings. By default, the option “Set User Password” is displayed in gray and can be activated only when users assign the Supervisor password. The User password can also start the system. While the User password can be used to view the current CMOS settings, these settings cannot be modified using the User password.

When you select the Set Supervisor/User Password option, the following message will appear in the center of the screen, which will help you to set the password:

Enter Password:

Enter your password, not exceeding 8 characters, then press <Enter>. The password you enter will replace any previous password. When prompted, key in the new password and press <Enter>.

If you do not want to set a password, just press <Enter> when prompted to enter a password, and in the screen the following message will appear. If no password is keyed in, any user can enter the system and view/modify the CMOS settings.

PASSWORD DISABLED!!!
Press any key to continue …

Under the menu “Advanced BIOS Features” Setup, if you select “System” from the Security Option, you will be prompted to enter a password once the system is started or whenever you want to enter the CMOS setting program. If the incorrect password is entered, you will not be permitted to continue.
Under the menu “Advanced BIOS Features” Setup, if you select “Setup” from the Security Option, you will be prompted to enter a password only when you enter the CMOS setting program.

Save & Exit Setup

When you select this option and press <Enter>, the following message will appear in the center of the screen:

SAVE to CMOS and EXIT (Y/N)? Y

Press <Y> to save your changes in CMOS and exit the program; press <N> or <ESC> to return to the main menu.

Exit Without Saving

If you select this option and press <Enter>, the following message will appear in the center of the screen:

Quit Without Saving (Y/N)? N

Press <Y> to exit CMOS without saving your modifications; press <N> or <ESC> to return to the main menu.

Chapter 4

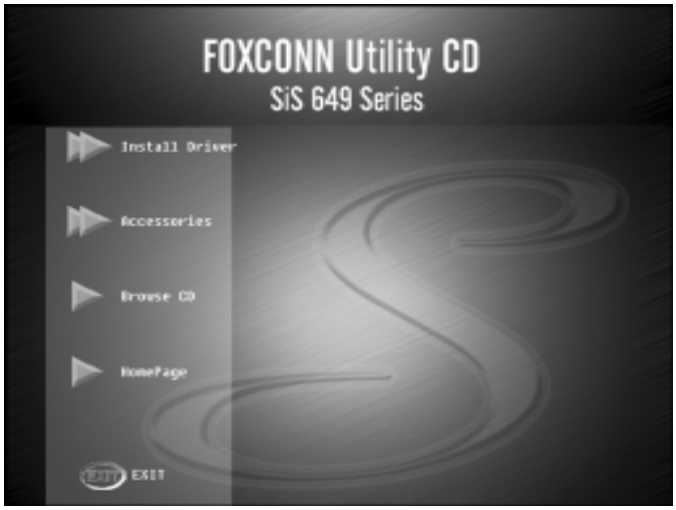
The utility CD that came with the motherboard contains useful software and several utility drivers that enhance the motherboard features.

This chapter includes the following information:

- Utility CD content
- Start to Install drivers

Utility CD content

This motherboard comes with one Utility CD. To begin using the CD, simply insert the CD into your CD-ROM drive. The CD will automatically display the main menu screen.



1. Install Driver

Using this choice, you can install all the drivers for your motherboard. You should install the drivers in order, and you need to restart your computer after the drivers are all installed.

A. IDE Driver
B. SiS RAID (optional)
C. DirectX 9.0b
D. USB2.0 Driver
E. Audio Driver
F. LAN Driver

2. Accessories

Use this option to install additional software programs.

A. SuperUtility

a. SuperStep

SuperStep is a powerful and easy-to-operate tool for overclocking. You can quickly increase your CPU's working frequency through its user-friendly interface. It will enhance your CPU's performance and meet all kinds of DIY requirements.

b.SuperLogo

SuperLogo can display user-designed graphics and pictures, such as a company logo or personal photos, thus making your PC more personalized and friendly.

c.SuperUpdate
SuperUpdate function can help to update the BIOS through Internet directly.

B. Adobe Reader
C. Norton Internet Security

3. Browse CD
Click here to browse CD content.

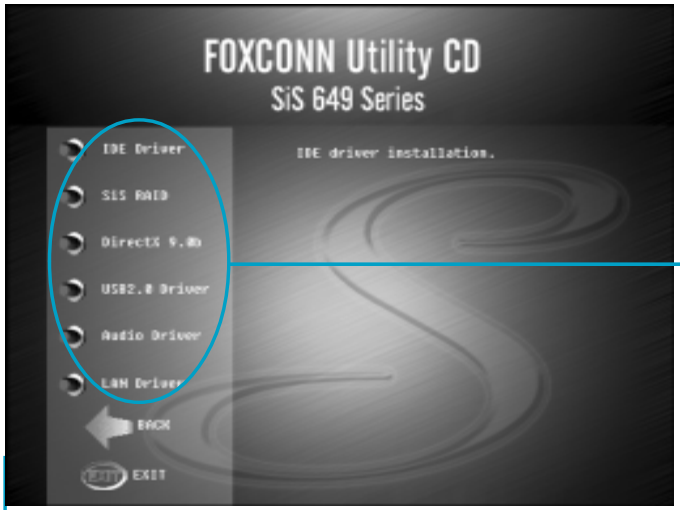
4. HomePage
Click here to visit Foxconn motherboard homepage.

Note:

1. Install the latest patch first if your OS is Windows XP or Windows 2000.
2. Follow the CD screen order to install your motherboard drivers.

Start to Install Drivers

Click <Install Driver> to enter the driver installation menu screen (shown as below). Click the relevant buttons to install IDE Driver, SiS RAID (optional), DirectX 9.0b, USB2.0 Driver, Audio Driver and LAN Driver from this CD.



Follow the screen order to install the motherboard drivers