

Contents

Item Checkup	8
Chapter 1 Specification	10
1-1 Mainboard Layout	11
1-2 Mainboard Specification Table	12
1-3 Chipset System Block Diagram	13
1-4 Mainboard Specifications	14
1-4.1 CPU Socket	14
1-4.2 System Chipsets	14
1-4.3 Memory	14
1-4.4 AMI BIOS	15
1-4.5 Accelerated Graphics Port (AGP) Interface	15
1-4.6 Multi-I/O Functions	15
1-4.7 Expansion Slots	16
1-4.8 Advanced System Power Management	16
1-4.9 Gigabit Ethernet on board (87CW-L/FL only)	16
1-4.10 Hardware Monitor on board	16
1-4.11 AC'97 Audio Codec on board	16
1-4.12 6-channel Audio-out Support (Optional)	16
1-4.13 IEEE 1394 Interface (87CW-F/FL only)	17
1-4.14 Serial ATA RAID Controller PDC20376	17
1-4.15 Form Factor	17
Chapter 2 Hardware Setup	18
2-1 CPU Installation with Socket 478B	19
2-1.1 To Identify a Pentium 4 CPU	19
2-1.2 CPU Installation with Socket 478B	20

2-2 Pentium 4 CPU Fan Installation:	21
2-3 Memory Installation	22
2-3.1 To Install DDR SDRAM Module	23
2-3.2 To Remove a Memory Module	23
2-4 AGP 8X/4X Slot Installation	24
2-5 IDE Connectors Installation	25
2-6 Serial ATA Connectors Installation	26
2-7 Serial ATA / Parallel ATA RAID Connectors	27
2-8 Floppy Drive Connector Installation	28
2-9 ATX V2.03 Power Supply Installation	29
2-10 Jumper Settings	30
2-10.1 JFSB1 & JFSB2: CPU Frequency Select	31
2-10.2 JSATA1: Raid Controller Select	32
2-10.3 JBAT1: Clear CMOS	32
2-10.4 JKBI: Keyboard / Mouse Wake Up	33
2-11 Other Connectors Configuration	34
2-11.1 On Board Fan Connectors	34
2-11.2 USB Ports and USB Pin-headers	35
2-11.3 Chassis Panel Connectors	36
2-11.4 6-channel Sound Output Connector (Optional)	36
2-11.5 CD-ROM Audio Connectors	37
2-11.6 PS/2 Mouse And PS/2 Keyboard	37
2-11.7 Front Panel Audio Connector	38
2-11.8 LAN Connector (87CW-L/FL Only)	38
2-11.9 COM 2 Header for one Serial Port	39
2-11.10 Complex Pin-header	40
2-11.11 IEEE 1394 Connectors (87CW-F/FL only)	42
2-11.12 Thermal Resistor	43
Chapter 3 Software Setup	44
3-1 To Open up the Support CD	45
3-2 Intel Chipset Software Installation Utility	46

3-3 AC'97 Audio Driver Installation	47
3-3.1 Install AC'97 6-channel Audio Driver	47
3-3.2 Verify 6-channel Audio	48
3-4 To Install Hardware Monitor Utility	51
3-4.1 Installation	51
3-4.2 Verification	52
3-5 To Install LAN Drivers (for 87CW-L/FL only)	53
3-5.1 Intel 82547EI LAN driver on Windows ME / 2000 / XP	53
3-5.2 Intel 82547EI LAN driver on Windows 9X	54
3-6 To Install USB 2.0 Driver for Windows 2000/XP	56
Chapter 4 AMI BIOS Setup	58
4-1 About BIOS Setup	59
4-2 To Run BIOS Setup	59
4-3 About CMOS	59
4-4 The POST (Power On Self Test)	59
4-5 To Update BIOS	60
4-6 BIOS SETUP --- CMOS Setup Utility	62
4-6.1 CMOS Setup Utility	62
4-6.2 Standard BIOS Features	63
4-6.3 Advanced BIOS Features	65
4-6.3.1 CPU Configuration	66
4-6.3.2 IDE Configuration	67
4-6.3.3 Floppy Configuration	71
4-6.3.4 Super IO Configuration	72
4-6.3.5 Hardware Health Configuration	74
4-6.3.6 ACPI Configuration	75
4-6.3.7 USB Configuration	77
4-6.3.8 Frequency/Voltage Control	79
4-6.3.9 Power Management	80
4-6.4 Advanced Chipset Features	82
4-6.4.1 NorthBridge Configuration	83

4-6.4.2 SouthBridge Configuration	85
4-6.5 PCI/PNP Resource Management	86
4-6.6 Boot Configuration Setup	88
4-6.6.1 Boot Settings Configuration	89
4-6.6.2 Boot Device Priority	90
4-6.7 Boot Security Features	91
4-6.7.1 Supervisor Password	91
4-6.7.2 User Password	91
4-6.7.3 Change Supervisor Password	92
4-6.7.4 Change User Password	93
4-6.7.5 Clear User Password	93
4-6.7.6 Boot Sector Virus Protection	94
4-6.8 Save Changes and Exit	94
4-6.9 Discard Changes (and Exit)	95
4-6.10 Load Optimal Defaults	95
4-6.11 Discard Changes	95
Chapter 5 RAID Controller	96
5-0 Before Creating Disk Array:	97
5-1 Creating Your Disk Array	98
5-1.1 Creating An Array For Performance/Security	98
5-1.2 Creating Security Array With Existing Data Drive	100
5-2 Installing Drivers	102
5-2.1 For Windows 2000/XP	102
5-2.2 Windows 95/98	104
5-2.3 DOS/Windows 3.1x	107
5-2.4 Windows NT4.0	108
APPENDICES	110
Appendix-1 Identify Mainboard Model Number	111
Appendix-2 Technical Terms	112

Item Checkup

- Mainboard
- User Manual (Mainboard)
- Multi-lingual Quick Installation Guide
- Support CD
- Bundled Bonus Pack CD
- Bundled Bonus Pack Manual
- Promise SATA RAID Driver Diskette (Optional)
- Cables :
 - ATA 66/100/133 IDE Cable
 - FDD Cable
 - 2 x Serial ATA Cable
 - Serial ATA Power Cable
 - USB Cable (Optional)
 - 1394A Cable x 1 (Optional)

Memo

Chapter 1 Specification

Introduction

This series of mainboards features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge Intel 875P. The Intel P4 processor is a rapid execution engine supporting 800/533/400MHz system bus, while North Bridge Intel 875P is a high performance integrated chipset providing Dual Channel DDR 400/333/266 SDRAM memory interface, Hub interface, and AGP interface.

Integrated with 875P, South Bridge Intel ICH5 supports the LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, Serial ATA interface, USB 2.0 interface, AC'97 2.2 (6-channel) Audio interface and the interrupt control. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

1-1 Mainboard Layout

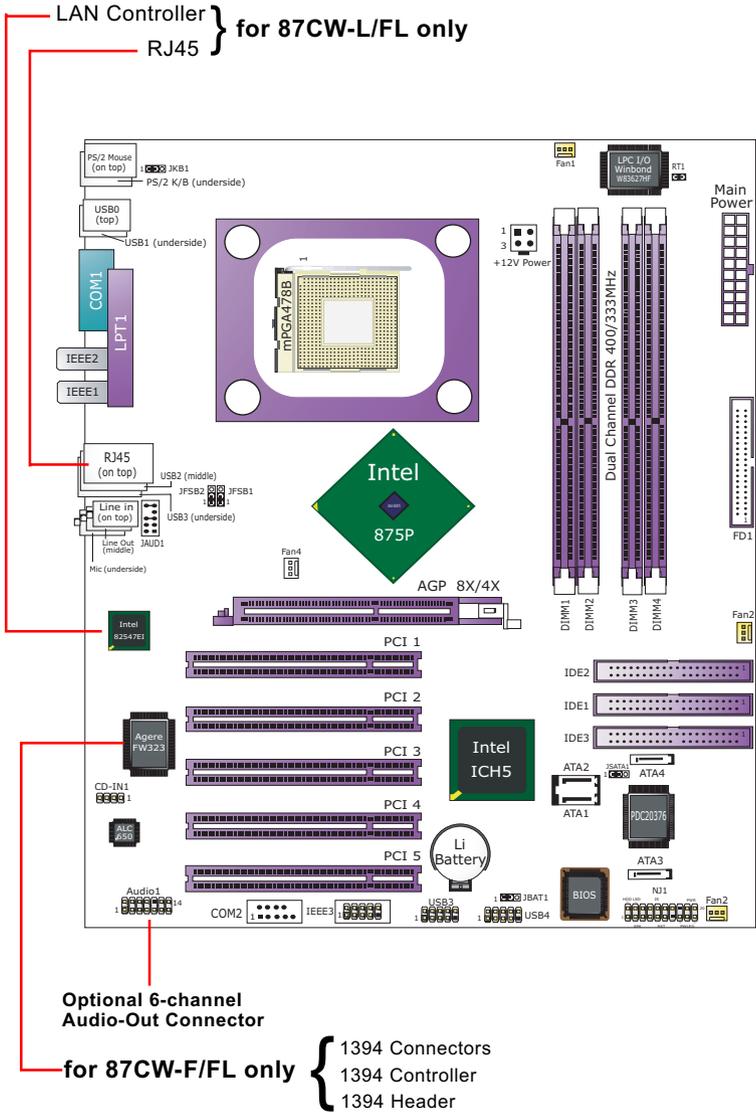
1-2 Chipset Diagram

1-3 Mainboard Specification Table

1-4 Mainboard Specifications**

**** If any difference is found between the mainboard description and the Mainboard you are using, please look up the Errata/Update Slip enclosed inside for the correction or updated information, or else contact the mainboard Dealer or visit our Web Site for the latest manual update.**

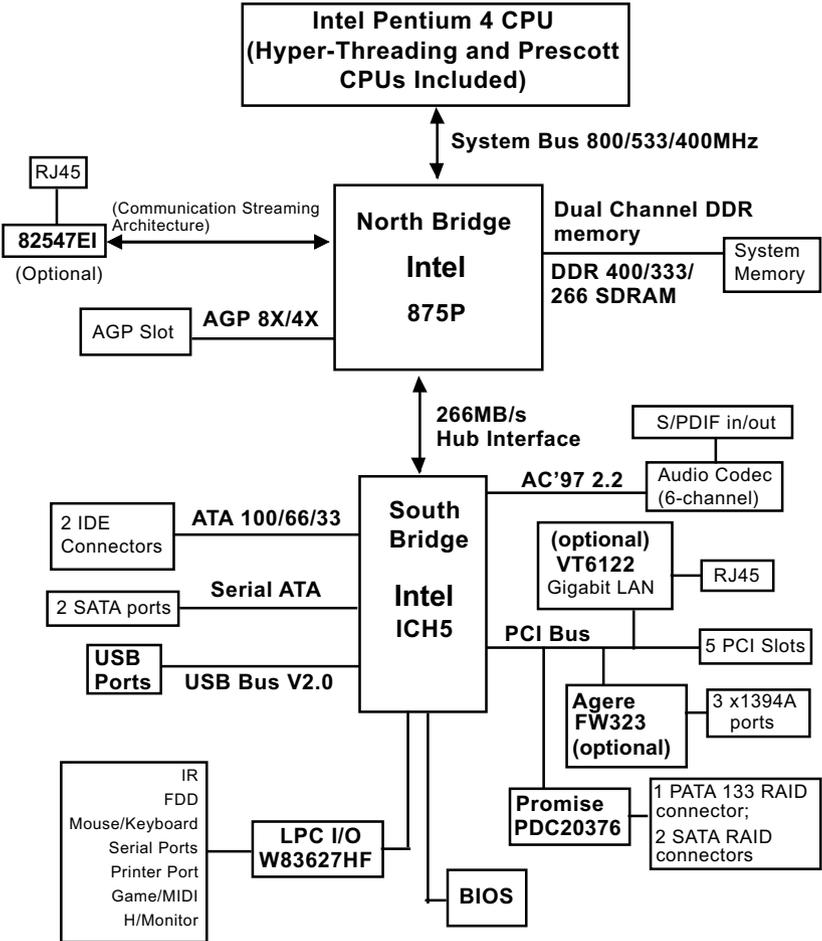
1-1 Mainboard Layout



1-2 Mainboard Specification Table

Series 87CW-FL Specifications and Features				
CPU	Socket 478B for P4 CPUs (HT and Prescott CPUs included)			
North Bridge	Intel 875P, supporting 800/533/400MHz FSB			
South Bridge	Intel ICH5, supporting 2 serial Hard Disks			
BIOS	AMI BIOS			
Memory	Supporting Dual-channel DDR 400/333/266 SDRAM, up to 4GB in 4 DIMM slots			
I/O Chip	W83627HF, with Hardware Monitor			
AGP interface	AGP8X/4X Mode only; 1 AGP Slot on board			
Audio	AC'97 Audio 2.2 compliant, 6 channel audio			
IDE Interface	2 UATA 66/100 IDE ports, 1 PATA / PATA RAID 133 IDE port supported by PDC20376			
SATA Interface	2 Serial ATA connectors, another 2 supported as SATA/SATA RAID Connectors by PDC20376			
RAID Interface	PDC20376 supporting 2 SATA RAID connectors and 1 PATA IDE RAID connector			
PCI Slots	5 PCI Master slots on board			
I/O Connectors	8 USB V2.0, 1 FDD port, 2 COM ports, 1 LPT, 1 IrDA, 1 PS/2 K/B, 1 PS/2 Mouse			
Networking	LAN Controller 82547EI and Connector RJ45 (for 87CW-L/FL only)			
Other common features	Keyboard/Mouse Wake Up			
Optional Features	87CW	87CW-L	87CW-F	87CW-FL
IEEE1394 Interface	No	No	Yes	Yes
LAN Controller on board	No	Yes	No	Yes

1-3 Chipset System Block Diagram



Pentium 4 + Intel 875P + Intel ICH5 Diagram

1-4 Mainboard Specifications

1-4.1 CPU Socket

CPU Socket 478B on board, supporting Intel® Pentium 4 processors (including Intel Hyper-Threading CPUs) in 478-pin package for :

- 800/533/400MHz System Bus; 512KB L2 Advanced Transfer Cache
- Hyper-pipelined technology; Advanced dynamic execution;
- Rapid Execution Engine; Streaming SIMD Extensions 2
- 128 Bit Enhanced Floating Point Unit; Execution Trace Cache

1-4.2 System Chipsets

North Bridge Intel 875P:

- A high performance integrated chipset providing P4 processor interface (including Hyper-threading Technology), Dual channel DDR 400/333/266 SDRAM memory, Hub interface, AGP interface as well as CSA (Communication Streaming Architecture) for communicating with the Gigabit Ethernet controller i82547E1.
- CSA interface supporting Gigabit Ethernet controller for 10/100/1000Mb data Transfer
- Showing Hyper-Threading Logo when booting with a Hyper-threading CPU

South Bridge Intel ICH5:

- Supporting the LPC I/O, upstream Hub interface, PCI interface, Ultra ATA 100 interface, Serial ATA interface, USB 2.0 interface, AC'97 2.2 (6-channel) Audio interface.

1-4.3 Memory

4 DDR DIMM 184-pin slots on board :

- Supporting unregistered, non-ECC or ECC Dual-channel DDR 400/333/266 SDRAM up to 4 GBs
- DIMMs to be populated in identical pairs for Dual-channel operation
- SPD (Serial Presence Detect) Scheme for DIMM Detection supported
- Performance Acceleration Technology available only when the system is set at **FSB 800 Mhz** and **DDR 400MHz** mode

1-4.4 AMI BIOS

Flash Memory for easy upgrade, supporting BIOS Writing Protection, Year 2000 compliant, and supporting various hardware configuration during booting system (See Chapter 4 BIOS Setup):

- Standard BIOS Features(Times, Date, System Information etc.)
- Advanced BIOS Features (CPU,IDE, Floppy, SuperIO, Hardware Health, ACPI, USB, and Frequency/Voltage Control)
- Advanced Chipset Features (NorthBridge, SouthBridge Configuration)
- PCI/PNP Resource Management (IRQ Settings, Latency Timers etc.)
- Boot Configuration Setup (Boot Settings, Boot Device Priority etc.)
- BIOS Security Features (Supervisor Password, User Password)

1-4.5 Accelerated Graphics Port (AGP) Interface

AGP Controller embedded on board, supporting:

- 1.5V(8X/4X) power mode only, 1 AGP Slot supported
- 8X 66MHz AD and SBA signaling; AGP pipelined split-transaction long burst transfers up to 2GB/sec.
- AGP 8X/4X supported, AGP V3.0 compliant

1-4.6 Multi-I/O Functions

- Serial ATA Controller integrated in ICH5, supporting:
 - 2x Serial ATA connectors supporting up to 150MByte/s transfer rate
- PCI EIDE Controller, supporting:
 - 2x UATA100/66/33 IDE connectors supporting up to 4 IDE devices
- Dedicated IR Functions:
 - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
- Multi-mode Parallel Data Transfer:
 - Standard mode, high speed mode ECP and enhanced mode EPP
- Floppy Disk Connector:
 - One FDD connector supporting 2 floppy drives with drive swap support
- Universal Serial Bus Transfer Mode:
 - USB V2.0 compliant; 480Mb/s USB Bus, supporting Windows 2000 or later operating systems (no support for Windows 9X/ME)
 - 4 built-in USB connectors and 2 USB Headers which require 2 additional USB cables to provide 4 more optional USB ports
- PS/2 Keyboard and PS/2 Mouse
- UARTs (Universal Asynchronous Receiver / Transmitter):
 - Two serial ports (COM1 & COM2) on board

1-4.7 Expansion Slots

- 5 PCI Bus Master slots
- 1 AGP slot
- 4 DDR SDRAM DIMM slots

1-4.8 Advanced System Power Management

- ACPI 1.0B compliant (Advanced Configuration and Power Interface), including ACPI suspend mode support (See ACPI Configuration of Advanced BIOS Features in BIOS Setup)
- APM V1.2 compliant (Legacy Power Management)
- Supporting Real Time Clock (RTC) for date alarm, month alarm, and century field configuration

1-4.9 Gigabit Ethernet on board (87CW-L/FL only)

Gigabit Ethernet Controller Intel 82547EI on board:

- Supporting 10/100/1000Mb data transfer
- Full-duplex Gigabit Ethernet throughput and higher platform performance with CSA interface.
- LAN Driver enclosed in Support CD for user's installation.

1-4.10 Hardware Monitor on board

- Hardware Monitor supported by W83627HF, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds.
- Utility Software Soltek Hardware Monitor for displaying system status is enclosed in Support CD for user's installation.

1-4.11 AC'97 Audio Codec on board

AC'97 Audio Codec 2.2 compliant on board

- Supporting 6-channel display of PCM audio output
- 6 channel audio consists of Front Left, Front Right, Back Left, Back Right, Center and Subwoofer for complete surround sound effect
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-4.12 6-channel Audio-out Support (Optional)

- This series is designed with an optional 6-channel Audio-out connector "Audio1". If this option is chosen, a 6-channel Audio-out card will be enclosed in the Mainboard package to provide 3 additional audio-out ports for the 6-channel sound.

1-4.13 IEEE 1394 Interface (87CW-F/FL only)

The IEEE 1394 Controller, FW323 chipset on board, providing enhanced PC connectivity for a wide range of devices, including consumer audio/video components, storage peripherals, and other portable devices.

- PCI-bus based open host controller, compliant with IEEE 1394A-2000 standard for high performance serial bus
- Supporting three fully compliant ports with Plug and Play-compatible expansion interface, for up to 400MB/sec transfer rate to fulfill various requirements of any multimedia devices.

1-4.14 Serial ATA RAID Controller PDC20376

- Promise PDC20376 integrated on board
- Supporting 2 Serial ATA RAID connectors for 2 serial ATA RAID hard disks with up to 150MB/s transfer rate
- Supporting an additional Parallel ATA RAID IDE connector for one more PATA RAID IDE hard disk with up to 133MB/s transfer rate
- SATA RAID Controller Driver enclosed in Support CD / Floppy Disk for user's installation.

1-4.15 Form Factor

- ATX Form Factor, ATX Power Supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector.
- Mainboard size: 305mm x 244mm

Chapter 2 Hardware Setup

To Get Things Ready for Hardware Setup !

1. We recommend to install your CPU before any other components. For detailed installation instructions of processor, you can also refer to the pamphlet enclosed in your CPU package.
2. Installing a cooling fan with a good heat sink is a must for proper heat dissipation for your CPU. Get ready an appropriate fan with heat sink for proper installation. Improper fan and installation will damage your CPU.
3. In case CPU Vcore, CPU clock or Frequency Ratio is adjustable on board, please follow the instructions described in the User's manual for proper setup. Incorrect setting will cause damage to your CPU.

The following topics are included in this chapter:

2-1 CPU Installation with Socket 478B

2-2 Pentium 4 CPU Fan Installation

2-3 Memory Installation

2-4 AGP 8X/4X Slot Installation

2-5 IDE Connectors Installation

2-6 Serial ATA Connectors Installation

2-7 Serial ATA / Parallel ATA RAID Connectors

2-8 Floppy Drive Connector Installation

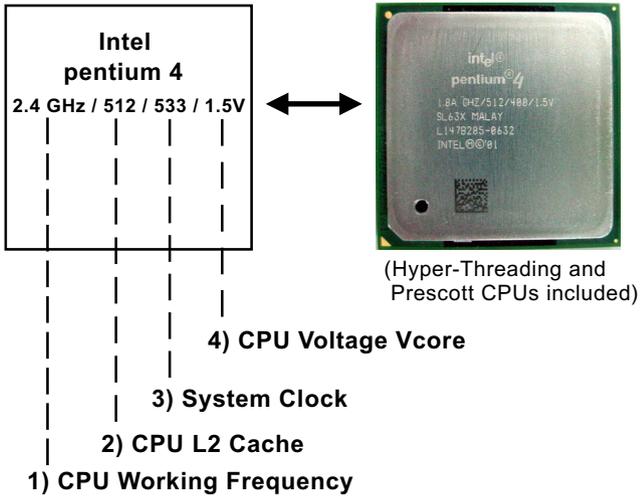
2-9 ATX V2.03 Power Supply Installation

2-10 Jumper Settings

2-11 Other Connectors Configuration

2-1 CPU Installation with Socket 478B

2-1.1 To Identify a Pentium 4 CPU



On the heatsink side of a Pentium 4 CPU, there printed a line of figures to identify its specifications. The line consists of 4 parts:

1. CPU Working Frequency: this part depicts the working frequency of the CPU. For example,
 - 2.4 GHz depicts that this CPU is locked to 2.4 GHz working frequency (18 x 133MHz CPU clock);
 - 2A GHz depicts that this CPU is an A version, locked to 2.0 GHz working frequency (20 x 100MHz CPU clock)
 - 3.06GHz depicts that this is a 3.06GHz hyper-threading CPU
2. CPU L2 Cache: this part depicts the L2 Cache size. For example,
 - 512 stands for 512 KB L2 Cache; 256 stands for 256 KB L2 Cache
3. System Clock: this part depicts the System Clock (Front Side Bus) provided by the CPU. For example,
 - 533 stands for a 533MHz system clock provided by a 133MHz CPU times 4;
 - 400 stands for a 400 system clock provided by a 100 MHz CPU x 4.
4. CPU Voltage Vcore: this part depicts the CPU Voltage. For example,
 - 1.5V stands for a CPU of 1.5V Vcore.

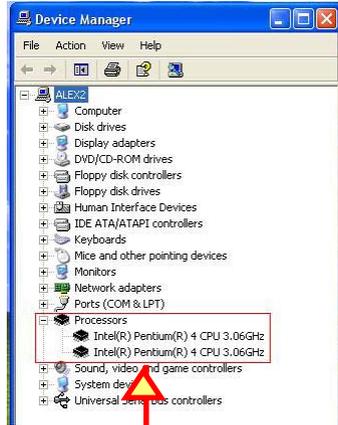
Note: System Clock vs CPU Clock

P4 CPU is a quadpumped CPU. The system bus is provided by the CPU clock x 4. Therefore, users can figure out the P4 CPU clock by the System Clock divided by 4.

2-1.2 CPU Installation with Socket 478B

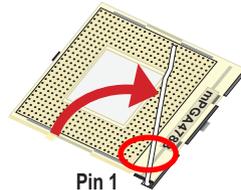
This mainboard is built with CPU Socket 478B (478-pin) supporting the Intel Pentium 4 CPU:

- Follow the steps described in this section to install the 478-pin Pentium 4 CPU into the on board Socket 478.
- After installation of Pentium 4 CPU, you must also install the specific Pentium 4 CPU fan designed in tandem with this CPU. This CPU Fan installation is described in next section.
- This mainboard supports Hyper-threading dual-in-one CPU, the function of which can be enabled by Windows XP. (See illustration on the right.)

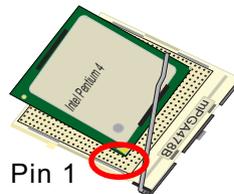


(If Hyper-threading CPU is installed successfully with O/S Win XP, the O/S will enable the dual-in-one CPU function.)

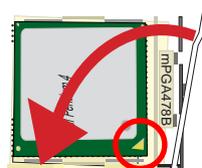
1. First pull sideways the lever of Socket 478, and then turn it up 90° so as to raise the upper layer of the socket from the lower platform.



2. Configure Pin 1 of CPU to Pin 1 of the Socket, just as the way shown in the diagram on the right. Adjust the position of CPU until you can feel all CPU pins get into the socket with ease.



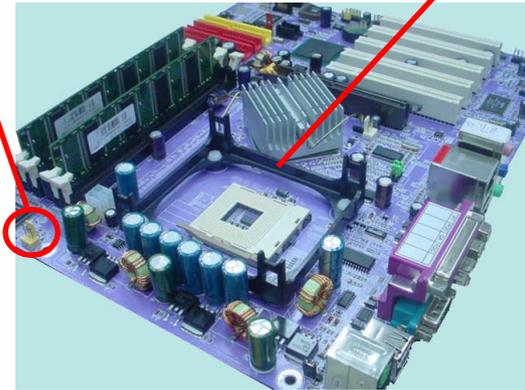
3. Make sure that all CPU pins have completely entered the socket and then lower down the lever to lock up CPU to socket.



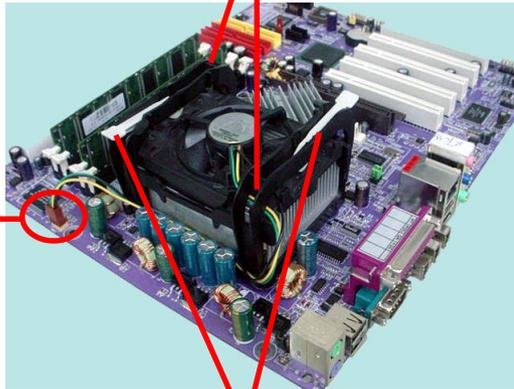
2-2 Pentium 4 CPU Fan Installation:

CPU Fan Connector

Pentium 4 Fanbase



1. Press down 4 latches.



2. Press down the 2 levers to lock fan to fanbase

3. Connect Fan Connector to CPU FAN connector

The above pictures are taken from sample mainboards as installation illustration. The layout in the pictures may be different from your mainboard.

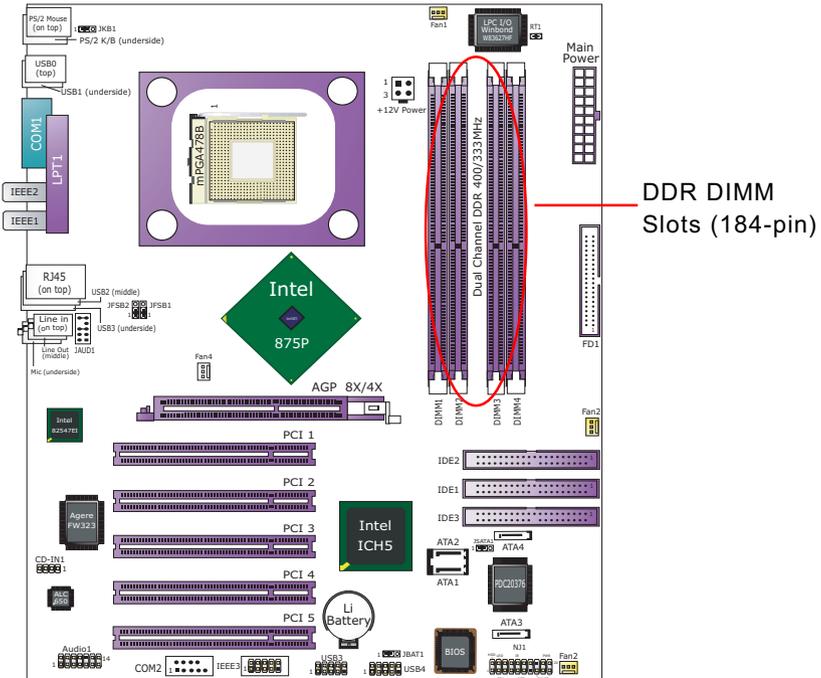
2-3 Memory Installation

How to tackle the memory Modules:

- Make sure to unplug your power supply before adding or removing memory module.
- Pay attention to the orientation of the DIMM slots.

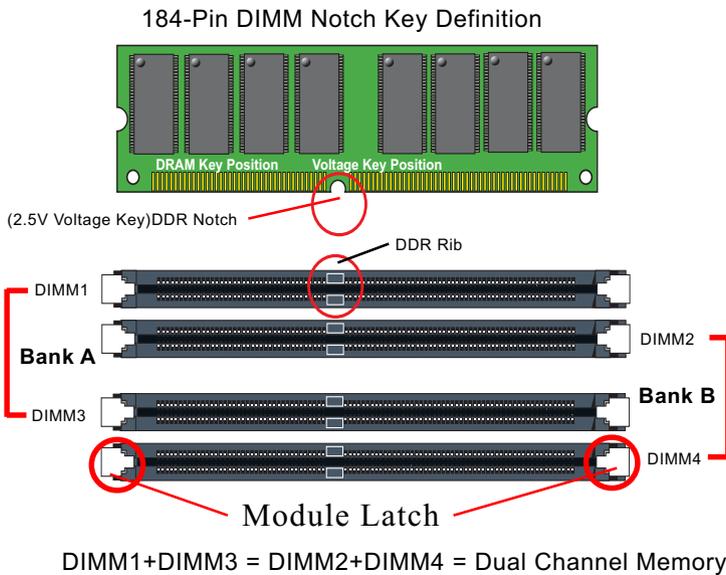
Dual Channel Memory Features

- Dual Channel memory configuration provides higher performance than Single Channel configurations
- Matched DIMMs need to have identical density, DRAM technology, DRAM bus width, and equal number of memory banks.
- This series supports up to 4GB unbuffered Dual-channel DDR 400/333/266 SDRAM, with 4 DDR DIMM slots on board. Do not insert other type of modules into these slots.
- The dual memory controller can double the DDR memory bandwidth up to 6.4GB/s with DDR400, 5.4GB/s with DDR333 and 4.2GB/s with DDR266.



2-3.1 To Install DDR SDRAM Module

- To enable Dual-channel memory function, users should insert totally identical (size and frequency) DDR module pair into the bank-pair. In this series, DIMM1 and DIMM3 is a pair, and DIMM2 and DIMM4 is another.
- DDR DIMM slot has 184 pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching.

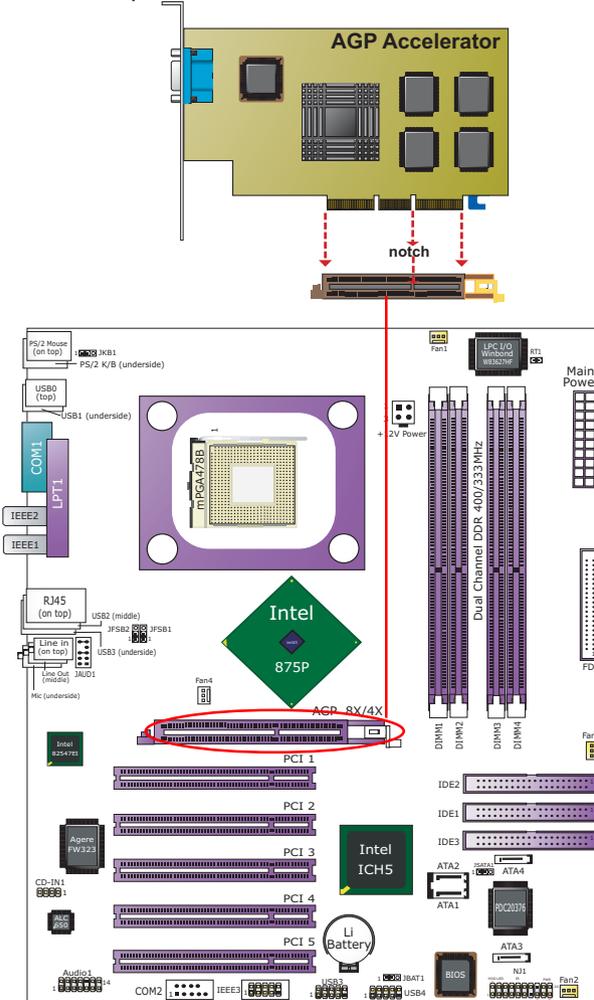


2-3.2 To Remove a Memory Module

Before removing a memory module from the DIMM slot, we must first power off system. After the system is powered off, you can now press down the two module latch at both sides of the module and release it from the slot.

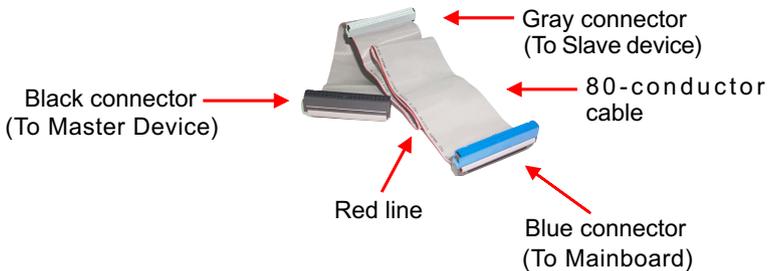
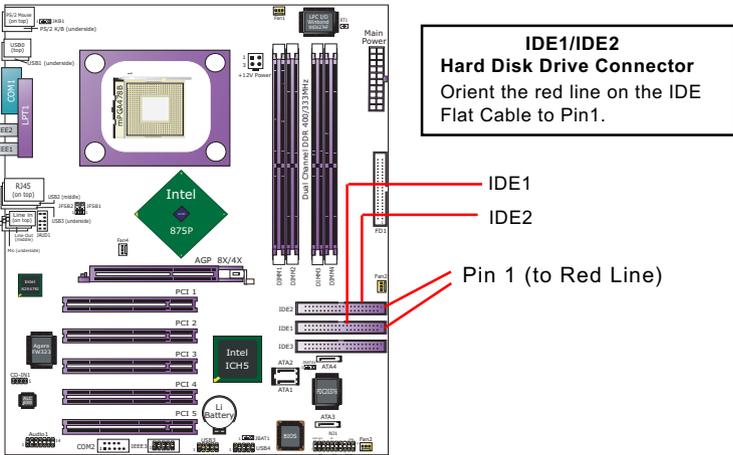
2-4 AGP 8X/4X Slot Installation

The AGP slot on board supports 1.5V AGP 8X/4X card only. A Rib is specifically added to the 8X/4X slot so as to match the AGP 8X/4X card. To insert a 3.3V AGP 2X card into the AGP 4X slot will damage the system chip and burn the 1.5V circuitry. An AGP 8X card will support a data transfer rate up to 2GB/sec, while an AGP 4X card will provide 1GB/sec transfer rate.



2-5 IDE Connectors Installation

To install IDE Connector, you may connect the blue connector of IDE cable to the primary (IDE1) or secondary (IDE2) connector on board, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumpers correctly. Please refer to your hard disk documentation for the jumper settings.

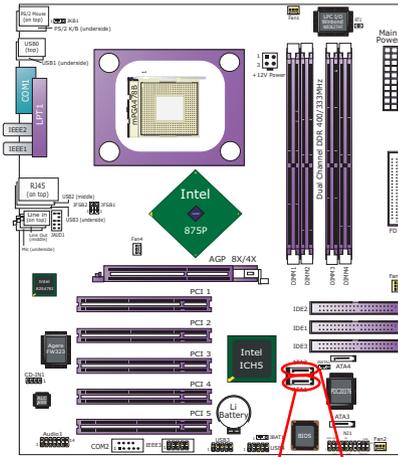


IDE Flat Cable

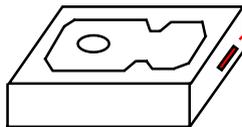
2-6 Serial ATA Connectors Installation

The Serial ATA is designed to improve the Parallel ATA with the capability of Hot Plug and offer a data bandwidth of 150Mbytes/second. It also reduce voltage and pin count and can be implemented with thin cables which improve the inner ventilation of PC cases.

2 Serial ATA connectors are built on board, supported by the Intel ICH5 for SATA Hard Disk Drives.



Serial ATA Connector ATA1 and ATA2



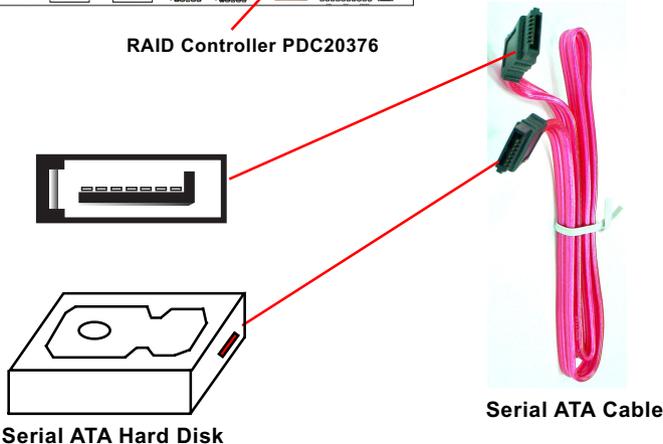
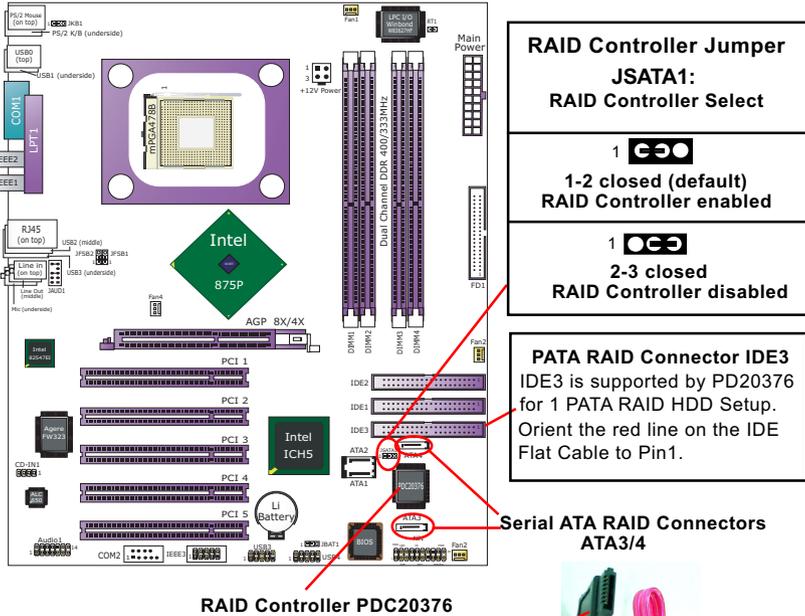
Serial ATA Hard Disk



Serial ATA Cable

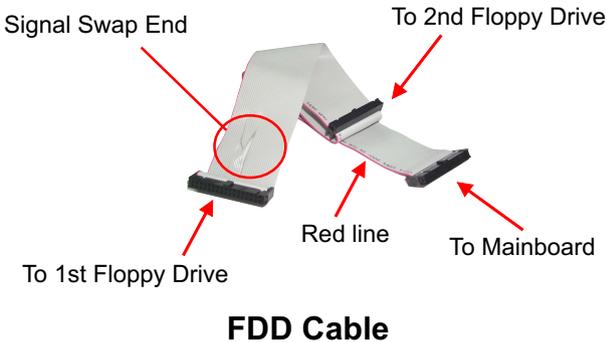
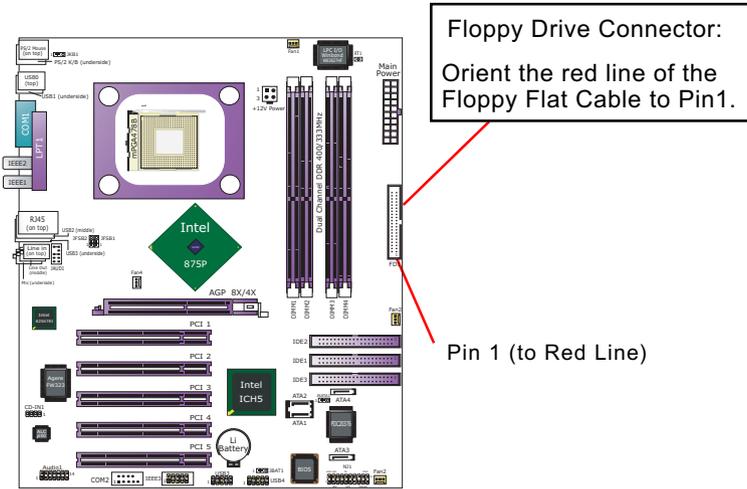
2-7 Serial ATA / Parallel ATA RAID Connectors

2 Serial ATA RAID and 1 Parallel ATA RAID connectors are built on board, supported by the RAID Controller PDC20376. Before we install RAID disk drives to the these Connectors, we must first enable the controller PDC20376 by Jumper JSATA1 1-2 closed and then install the RAID Controller Driver (see Chapter 5 Disk Array Installation).

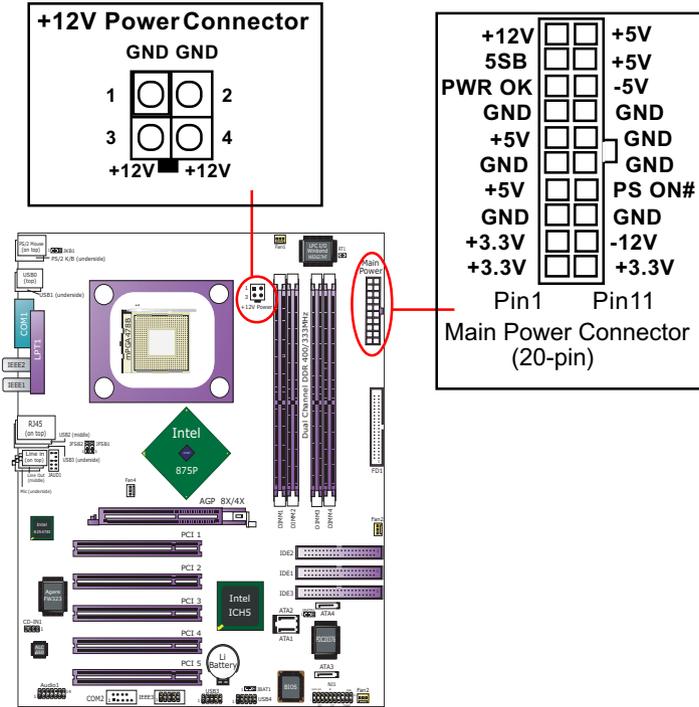


2-8 Floppy Drive Connector Installation

To install FDC, you should connect the end of FDC cable with single connector to the board, and connect the other end with two connectors to the floppy drives.



2-9 ATX V2.03 Power Supply Installation



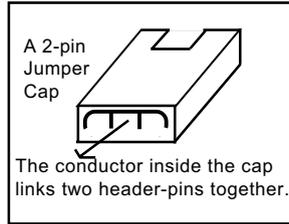
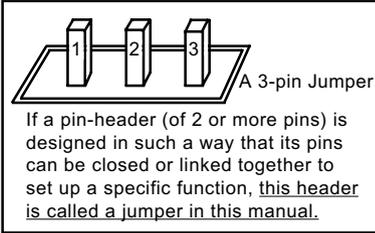
ATX V2.03 Power Supply is strongly recommended for mainboard running with 2GHz or higher CPU.

To set up Power Supply on this mainboard:

1. Connect the on-board Main Power Connector (20-pin) to the Main Power Connector (20-pin) of an ATX Power Supply which can be of the latest version 2.03 model, and then connect the square-shaped +12V Power Connector on board to the square-shaped +12V Power Connector of the Power Supply.

Warning: Both the Main Power Connector and the +12V Power Connector should be connected to Power Supply; otherwise, the system may either not start or be damaged.

How to tackle the Jumpers:



- A Jumper is usually but not necessarily given a “JpX” legend.
- In the Jumper setting diagram, the jumper pins covered with black marks stand for closed pins with jumper cap.



- Do not remove any jumper cap when power is on. Always make sure the power is off before changing any jumper settings. Otherwise, the mainboard will be damaged.

2-10.1 JFSB1 & JFSB2: CPU Frequency Select

JFSB1 and JFSB2 are designed on board for CPU frequency select.

1. Setting JFSB1 1-2 closed and JFSB2 to 1-2 closed will allow CPU on board to Auto Detect CPU frequency and apply it to the System Bus.
2. Setting JFSB1 2-3 closed and JFSB2 2-3 closed is for 100 MHz CPU.
3. Setting JFSB1 open and JFSB2 2-3 closed is for 133 MHz CPU.
4. Setting JFSB1 2-3 closed and JFSB2 open is to select a CPU clock at 200 MHz for your CPU. If 200MHz is an overclock for your CPU, it may or may not boot your system. If an overclok fails to boot system, you should restore the default setting and then clear CMOS to reboot your system. (See Clear CMOS in next paragraph.)

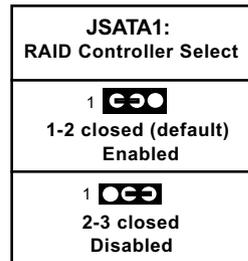
JFSB1&JFSB2: CPU Frequency Select			
(default) CPU Auto-Detection	100MHz	133MHz (FSB533)	200MHz
JFSB2 3 1	JFSB2 3 1	JFSB2 3 1	JFSB2 3 1
JFSB1 3 1	JFSB1 3 1	JFSB1 3 1	JFSB1 3 1

Further Notes on CPU Overclocking:

1. If you have successfully booted system, with or without CPU overclock, you still can try another CPU overclock in BIOS Setup. Please enter BIOS Setup, choose “Frequency/Voltage Control” of Advanced BIOS Features, and configure the “CPU Clock” item to raise your CPU clock.
2. CPU overclocking should take all components on board into account. If you fail in BIOS overclocking, you will not be able to restart system. In such case, Power off system and clear CMOS by JBAT1 and then restart your system. And remember to reconfigure whatever should be reconfigured.
3. If your system is already fixed in a cabinet or case, you may not like to take the trouble to clear CMOS. Then power on your system with the power button on the PC case and simultaneously press down the “Insert” key on the keyboard until you see the initial bootup screen appear. And remember you should also enter CMOS BIOS Setup instantly and choose “Load Optimized Defaults” to restore default BIOS .

2-10.2 JSATA1: Raid Controller Select

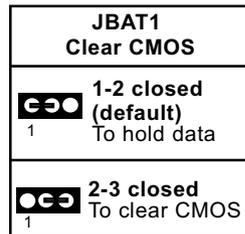
JSATA1 is a 3-pin jumper for enabling or disabling the on-board RAID Controller PDC20376. Setting JSATA1 1-2 CLOSED will allow user to enable on-board RAID Controller so as to allow user to set up the Disk Array.



2-10.3 JBAT1: Clear CMOS

When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

1. Power off system.
2. Set JBAT1 to Pin 2-3 closed.
3. After 2 or 3 seconds, restore the JBAT1 setting to Pin1-2 closed.
4. CMOS data are restored to default now. Remember never clear CMOS when system power is on.



2-10.4 JKB1: Keyboard / Mouse Wake Up

JKB1 is designed on board as a jumper to enable/disable the PS/2 keyboard/mouse Wake Up from suspend mode.

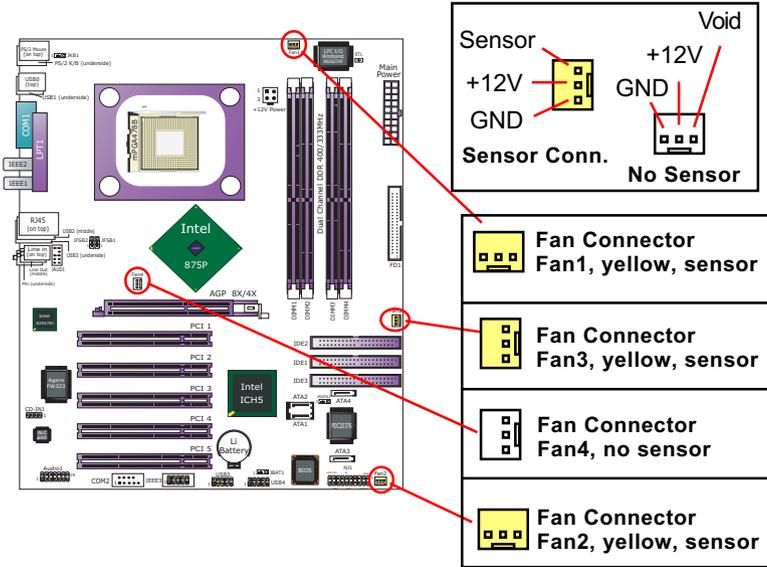
USB keyboard/mouse Wake Up function is also supported on this mainboard.

JKB1: Keyboard / Mouse Wake Up	
 1	1-2 closed (default) Disabled
 1	2-3 closed Enabled

2-11 Other Connectors Configuration

This section lists out all connectors configurations for users' reference.

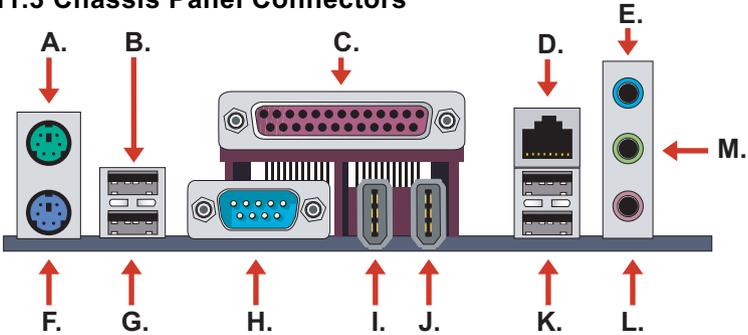
2-11.1 On Board Fan Connectors



Both Sensor and No-sensor Fan Connectors support CPU/AGP/System/Case cooling fan with +12V mode. A Hardware Monitor chipset is on board, with which users can install a Hardware Monitor Utility and read the fan speed transmitted from the sensor fan. Otherwise, users can read the fan speed from the "Hardware Monitor Status" via BIOS.

A running Fan will send out 2 electric pulses per rotation of its fan blade. A Sensor Fan Connector will count the electric pulses and send the information to the System Hardware Monitor which in turn will work out the fan rotation speed and display it on screen.

2-11.3 Chassis Panel Connectors



- | | |
|----------------------------------|--|
| A : PS/2 Mouse | H : COM1 Connector |
| B : USB 0 (top) | I : IEEE2 Connector(87CW-F/FL only) |
| C : LPT1 Port | J : IEEE1 Connector(87CW-F/FL only) |
| D : RJ45 (87CW-L/FL only) | K : USB 2 (middle) |
| E : Line in/
Rear Speaker Out | L : Microphone Input /
Center Subwoofer Out |
| F : PS/2 Keyboard | M : Line Out /
Front Speaker Out |
| G : USB 1 (underside) | |

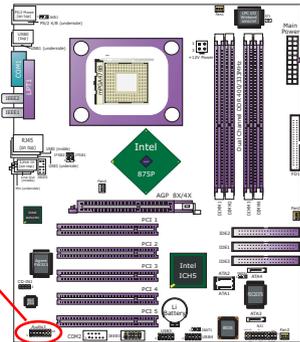
2-11.4 6-channel Sound Output Connector (Optional)

This series is designed with an optional 6-channel Audio-out connector “Audio1”. If this option is chosen, it will provide 3 additional audio-out ports for the 6-channel sound.

6-channel Audio-out Pin Assignment

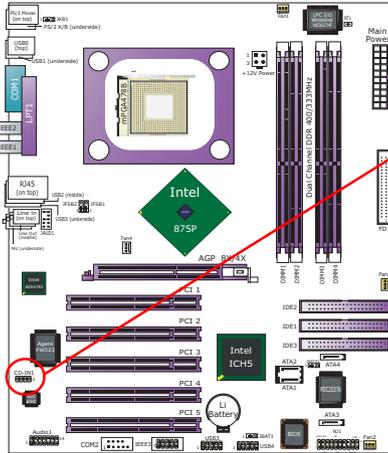


- | | |
|----------------------|--------------|
| Pin 1 LFE-out | Pin 2 Gnd |
| Pin 3 Center-out | Pin 4 Gnd |
| Pin 5 Surround-out-R | Pin 6 Gnd |
| Pin 7 Surround-out-L | Pin 8 Gnd |
| Pin 9 Jack-detect | Pin10 (Void) |
| Pin11 SPDIFI | Pin12 Gnd |
| Pin13 SPDIFO | Pin14 Gnd |



2-11.5 CD-ROM Audio Connectors

CD-IN1 is an audio connector connecting CD-ROM audio to mainboard.

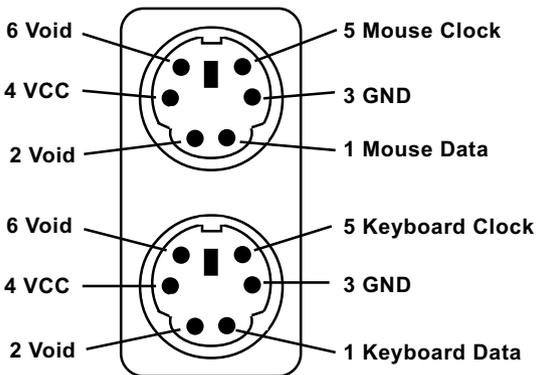


CD-ROM Audio Pin Assignment

CD-IN1	Pin 1	Pin 2	Pin 3	Pin 4
	Left Channel	GND	GND	Right Channel

2-11.6 PS/2 Mouse And PS/2 Keyboard

(PS/2 Mouse: On top of keyboard connector, green)

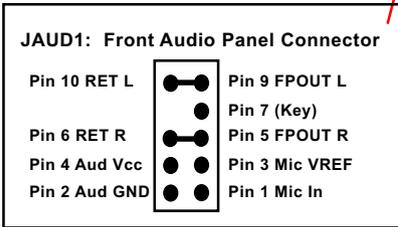
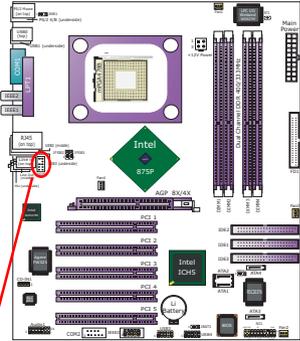


(PS/2 Keyboard Connector: Underside, purple)

2-11.7 Front Panel Audio Connector

This Mainboard is designed with a Front Panel Audio connector “JAUD1” which provides connection to your chassis.

1. When JAUD1 is set to 5-6 closed and 9-10 closed, this default setting disables this connector and leaves the Back Panel Audio enabled.
2. To use this Front Panel Audio Connector, please open all pins of JAUD1 and connect it to your chassis.

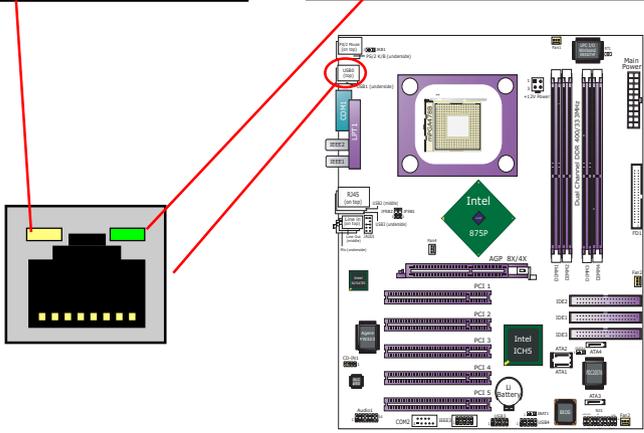


2-11.8 LAN Connector (87CW-L/FL Only)

One RJ45 connector is on board for network connection.

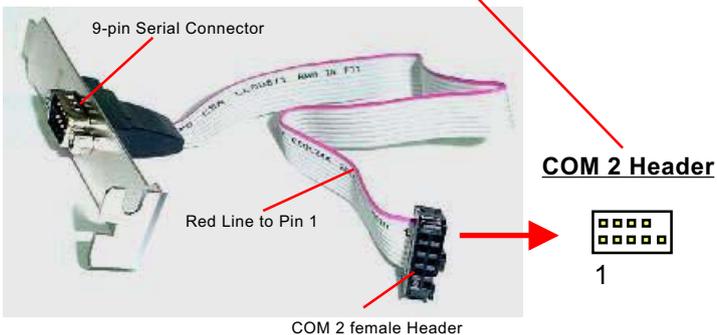
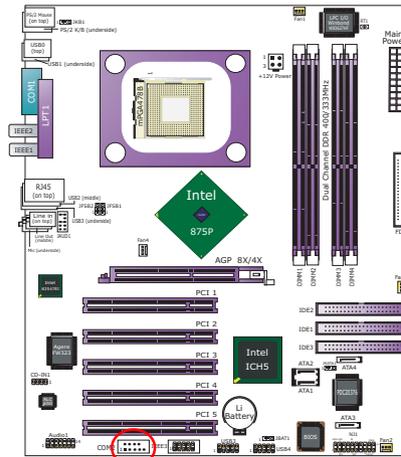
Yellow LED “On” to indicate Network hub is in connection with the system.

Green LED blinks to indicate that data transmission is undergoing in 10/100/1000 Base T mode.



2-11.9 COM 2 Header for one Serial Port

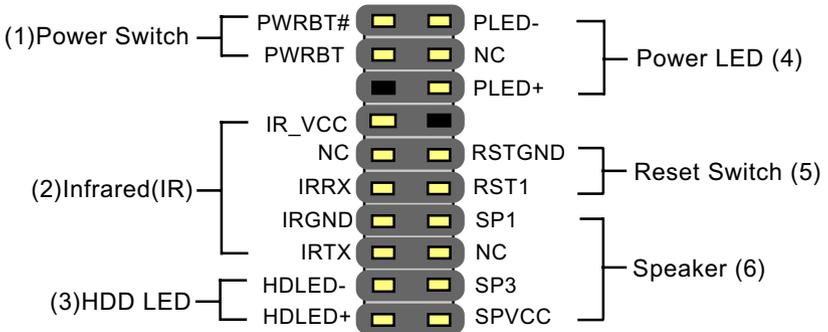
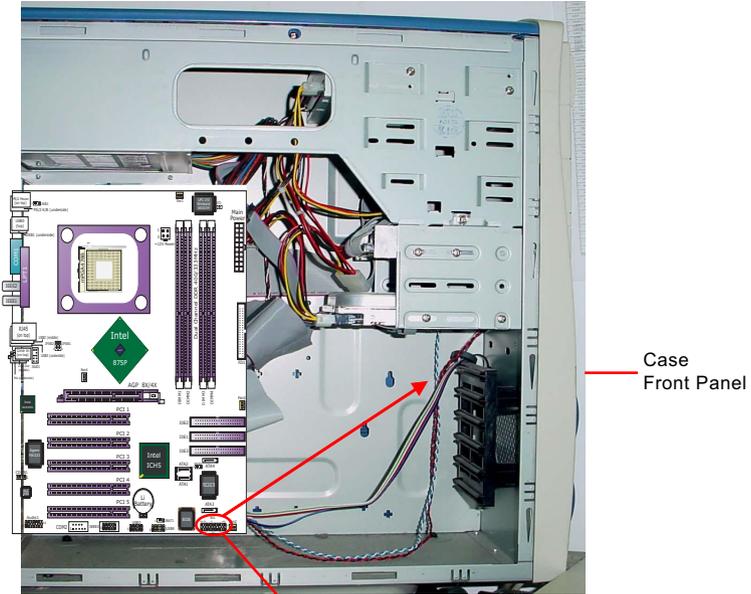
COM 2 Header is built on board, which requires a serial COM 2 cable to provide a 9-pin serial connector for a serial device. When you insert COM 2 cable to COM 2 header, take notice that the red line of the cable must connect to Pin 1 of COM 2 header.



COM 2 Cable (RS232) (optional)

2-11.10 Complex Pin-header

This complex Pin-header consists of the following connectors for various supports. When you have fixed the mainboard to the case, join the connectors of this Complex Pin-header to the case Front Panel.



(1) Power Switch Connector:

Connection: Connected to a momentary button or switch.

Function: Manually switching the system between “On” and “Soft Off”. Pressing the momentary button for more than 4 seconds will also turn the system off.

(2) IR Connector (Infrared Connector):

Connection: Connected to Connector IR on board.

Function: Supporting wireless transmitting and receiving module on board.

(3) HDD LED Connector:

Connection: Connected to HDD LED.

Function: To supply power to HDD LED.

(4) Power LED Connector:

Connection: Connected to System Power LED.

Function: To supply power to “System Power LED”.

(5) Reset Switch Connector:

Connection: Connected to case-mounted “Reset Switch”.

Function: To supply power to “Reset Switch” and support system reboot function.

(6) Speaker Connector:

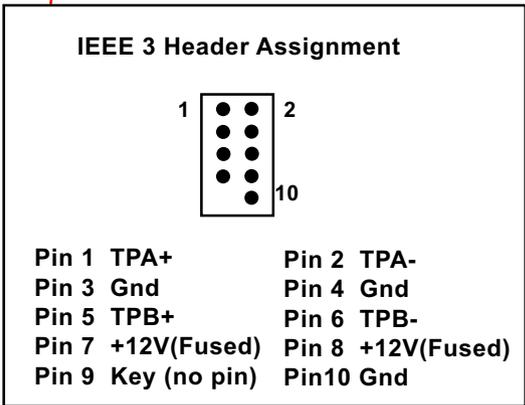
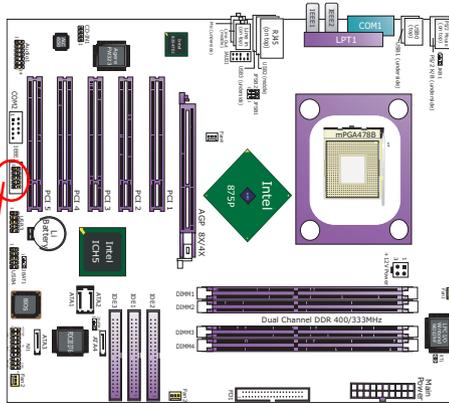
Connection: Connected to the case-mounted Speaker.

Function: To supply power to the case-mounted Speaker.

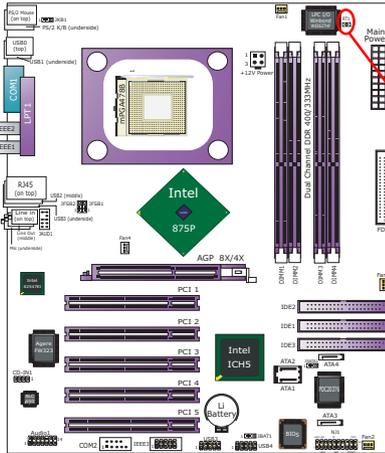
2-11.11 IEEE 1394 Connectors (87CW-F/FL only)

IEEE 1394 controller, FW323 chipset on board, supports up to 400MB/s transfer rate with Plug and Play expansion interface.

IEEE3 Header is built on board, which requires an IEEE 1394 cable (optional) to provide a 9-pin serial connector for a device. Because of the same pin allocation between the IEEE 1394 Header and the USB Header, **please do not insert a USB cable to the IEEE 1394 Header.** The devices may be damaged or burned for the sake of mistakenly inserting the wrong cable.



2-11.12 Thermal Resistor



Thermal Resistor RT1



RT1

RT1 is mounted with Thermal Resistor by default for detecting system temperature.

Resistor RT1: A thermal resistor is mounted by default to connector RT1 so as to detect the temperature of the system. What RT1 does is to transmit the thermal signal to Hardware Monitor.

Chapter 3 Software Setup

Drivers, Utilities and Software Installation

- Support CD:

This series of mainboards will be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

This chapter is devoted to describing the installations of all these essential drivers and utilities on Windows 9X, Windows ME, Windows 2000 and Windows XP. And installation on Windows XP as the general illustration hereby.

The priority of drivers to be installed should also be noted. Users are recommended to take the following installation orders :

3-1 To Open up the Support CD

3-2 To Install Intel Chipset Software Installation Utility

3-3 To Install AC'97 Audio Drivers

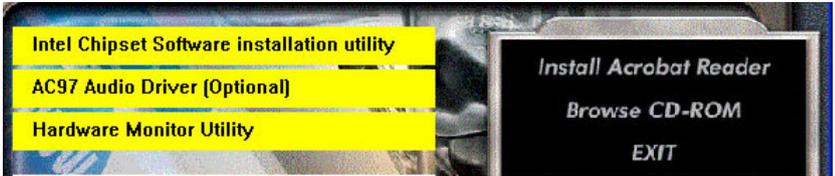
3-4 To Install Hardware Monitor Utility

3-5 To Install LAN Drivers (for 87CW-L/FL only)

3-6 To Install Intel USB V2.0 Drivers

3-1 To Open up the Support CD

1. Please put the Support CD enclosed in your mainboard package into the CD-ROM drive. In a few seconds, the Main Menu will automatically appear, displaying the contents to be installed for this series:



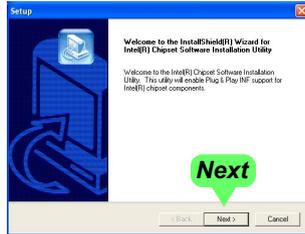
2. In case your system does not open the Support CD automatically, please click to the following path to enter the Main Installation Menu:

D:\Autorun.exe (assuming that your CD-ROM Drive is Drive D)
3. Drivers will be updated into our website from time to time. If user is installing a newer driver than the one used as illustration hereby, please note that the pictures shown in the illustration might be different from those of the newer driver.

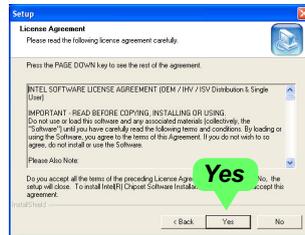
3-2 Intel Chipset Software Installation Utility

1. Following the procedures of opening the Support CD, click to “Install Intel Chipset software installation Utility” to proceed.

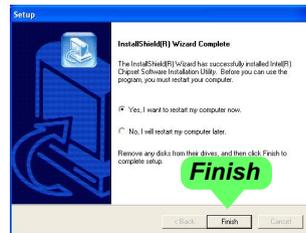
2. The Intel Service Pack InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press “**Next**” button to continue.



3. “Intel Software License Agreement” screen will appear, please click the “**Yes**” button to agree with the Licence Agreement and continue.



4. After all the setup process is finished, please restart your computer by clicking on “Finish” so as to take the Utility into effect.



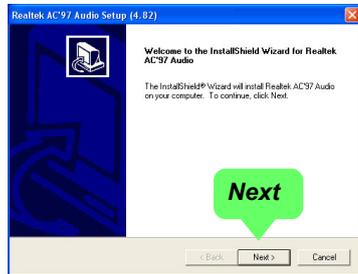
3-3 AC'97 Audio Driver Installation

Avance AC97 Audio Codec on board, AC'97 2.2 compatible stereo audio code for PC multimedia systems. Avance AC'97 Audio Codec Driver is provided in Support CD for user's installation.

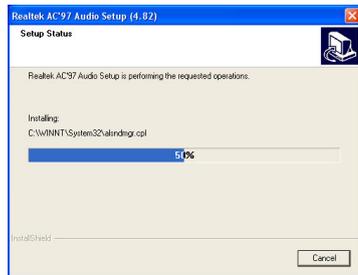
3-3.1 Install AC'97 6-channel Audio Driver

1. Following the procedures of opening the Support CD, click to “ AC'97 Audio Driver” to proceed.

2. Instantly, the “installShield Wizard” screen appears to guide you through the “Avance AC'97 Audio Setup”.



3. instantly, the Setup program proceeds to install the softwares which include AC'97 driver and AVRack. (If you want to stop setup, click the “Cancel” button.)



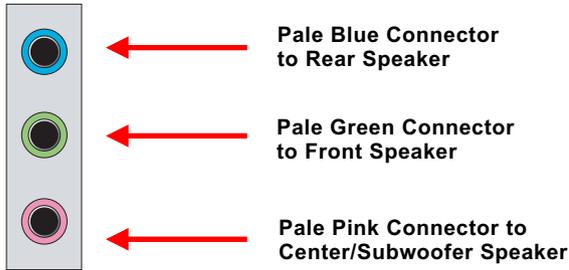
4. After the setup process is finished, please check the radial button “Yes, I want to restart my computer now.” And click “Finish” to restart your system.



3-3.2 Verify 6-channel Audio

After installation of AC'97 6-channel Codec, you must configure the 5.1 Speaker connection to enable the 6-channel audio.

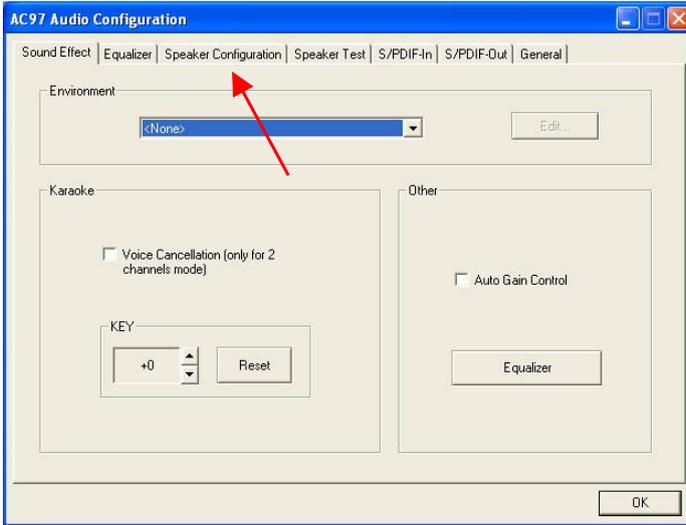
1. Connect your on-board Audio Connector to your 6-channel speakers as depicted in the figure below:



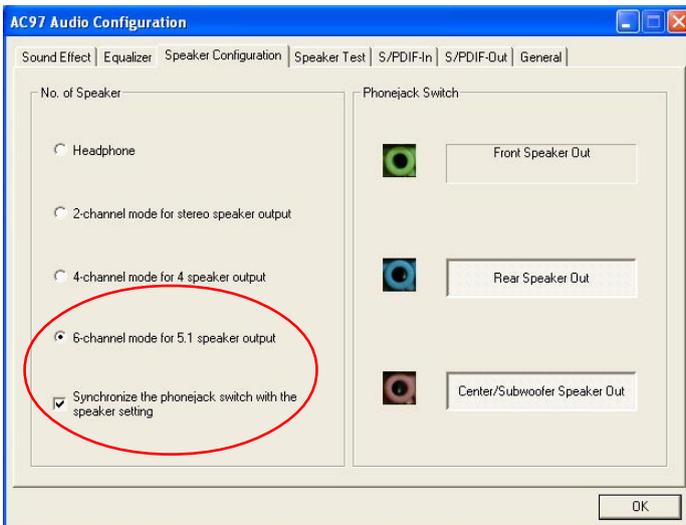
2. After Connection is done, start your Windows system and double click the Avance Sound Effect manager icon to enter 6-channel configuration:



3. The “AC’97 Audio Configuration” screen will pop out. Click the “Speaker Configuration” bar with your mouse.



4. Instantly, the “Speaker Configuration” screen will pop out. Pick the items “6-channel mode for 5.1 speakers output” and “ Synchronize the phonejack switch with the speakers settings” and then click “OK” to finish configuration.



5. At finishing the Speakers Configuration, you can also click the “Speaker Test” bar on the screen to test the 6-channel performance. The figure below is the “Speaker Test” screen with testing instructions enclosed on it. Follow the instructions to perform the Speakers Test.



3-4 To Install Hardware Monitor Utility

3-4.1 Installation

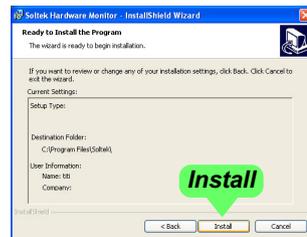
Hardware Monitor is built on this mainboard. Its installation is programmed to a fully automated mode on Windows 9X/Me/NT4/2000/XP. Users can follow the model installation below for its installation on various Windows System.

1. Following the procedures of opening the Support CD, click to “Hardware Monitor Utility” to proceed.

2. The Soltek Hardware Monitor InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press “**Next**” button to continue.



3. The **InstallShield Wizard** screen will show the current setting, please click the “**Install**” button to continue.



4. After all the setup process is finished, click “**Finish**” to exit the wizard.



3-4.2 Verification

1. After installing Soltek Hardware Monitor, double click “SoltekHM” icon on the desktop to open the main window of the Soltek Hardware Doctor.



2. Then the pop-up screen will show all information about CPU Temperature, Fan Speed and various Voltages.

A screenshot of the Soltek Hardware Monitor software interface. The interface is designed to look like a handheld device with a silver and blue color scheme. It features several data panels: 'TEMPERATURE' with CPU, ABS II, and RT 2 readings; 'FAN TACHOMETER' with Fan 1, Fan 2, and Fan 3 readings; and 'VOLTAGE' with CPU, DIMM, 3.3V, and 5V readings. On the right side, there is a 'SOLTEK' logo and a 'Status Warning LED' indicator. A 'Soltek' button is also present. Callout boxes with red arrows point to various elements: 'Showing the Fan Speed(s) that is supported by the mainboard.' points to the Fan Tachometer; 'Showing the temperature(s), the function of which is supported by the mainboard.' points to the Temperature panel; 'Click on “Soltek” button to display the function menu.' points to the Soltek button; 'Showing the Voltage(s) that is supported by the mainboard.' points to the Voltage panel; and 'Status Warning LED' points to the LED indicator.

Showing the Fan Speed(s) that is supported by the mainboard.

Showing the temperature(s), the function of which is supported by the mainboard.

Click on “Soltek” button to display the function menu.

Showing the Voltage(s) that is supported by the mainboard.

Status Warning LED

*Note: Not all items or functions showing in the above picture will show up. Only those items or functions that are supported by the mainboard will reveal themselves in the above screen.

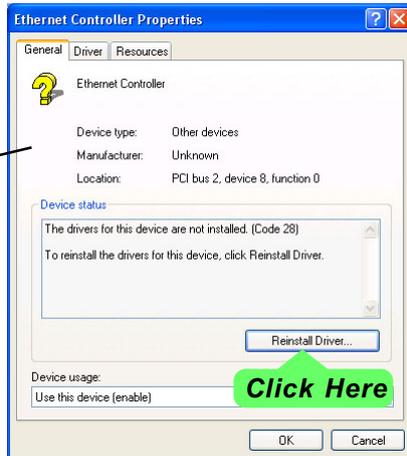
3-5 To Install LAN Drivers (for 87CW-L/FL only)

3-5.1 Intel 82547EI LAN driver on Windows ME / 2000 / XP

The LAN driver contained in the Support CD is not included in the Autorun Menu. To install Intel 82547EI LAN driver on Windows 2000 / XP, please follow the steps shown below:

1. On the “Start” screen of your system, please click to the following path:
 \My Computer\Properties\Hardware\Device manager (on 2000/XP)
 \My Computer\Properties\Device manager (on ME)
2. In the “Device manager” screen, you can see the item “ PCI Ethernet Controller” with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for this on-board Intel 82547EI Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).
3. Instantly, the “PCI Ethernet Controller Properties” screen shows up. Please click the “General” bar to continue.
4. In the “General” screen, click “Reinstall Driver” button to continue.

This picture is taken from Windows XP

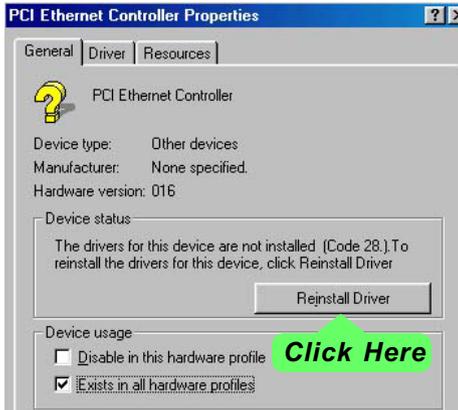


5. The “Hardware Update Wizard” will guide you through all setup and install the driver of the Ethernet controller completely.
6. When the “Finish” screen shows up, click “Finish” to end the LAN driver installation. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click “Yes” to restart system and finish the LAN driver installation.

3-5.2 Intel 82547EI LAN driver on Windows 9X

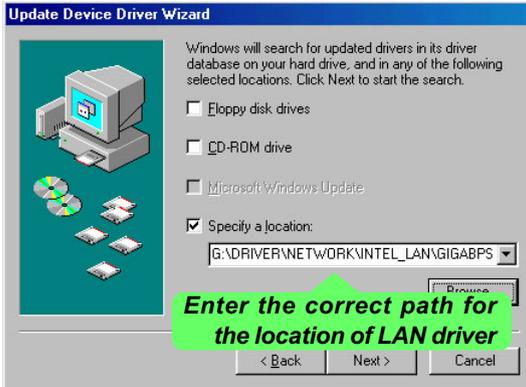
The LAN driver contained in the Support CD is not included in the Autorun Menu. To install Intel 82547EI LAN driver on Windows 9X, please follow the steps shown below:

1. On the “Start” screen of your system, please click to the following path:
 \My Computer\properties\Device manager
2. In the “Device manager” screen, you can see the item “PCI Ethernet Controller” with a yellow question mark on its left side, which indicates that the LAN controller is already detected by system but the driver for this on-board Intel 82547EI Ethernet Controller is not installed yet. Please point to this item with your mouse and double click on it (or click the “Properties” button).
3. Instantly, the “PCI Ethernet Controller Properties” screen shows up. Please click the “General” bar to continue.
4. In the “General” screen, click “Reinstall Driver” button to continue. Please note that the status of “Device Usage” should stay at “Exists in all hardware profiles”.



5. In the “Update device Driver Wizard” screen, click “Next” to continue until you see a dialog box asking you to “Specify a location” for the driver. You should **now** insert the Support CD into your CD-ROM.

6. As illustrated in the picture below, check the item “Specify a location” and click the “Browse” button to find out the correct path for the driver. Supposing your CD-ROM drive is Drive E, please type: E:\Driver\Network\Intel_LAN\GIGABPS\Win9x_me\Win_98me into the blank bar. Then click the “Next” button to continue.



7. The Update Device Driver Wizard will then go on installing the driver, until the “Insert Disk” dialog box shows up. Please withdraw your Support CD and insert the Windows 98 CD-ROM into the CD-ROM drive for updating system and click “OK” to continue.
8. The Update Device Driver Wizard will then proceed to update the system with the LAN driver. When the “Finish” screen shows up, click “Finish” to continue.

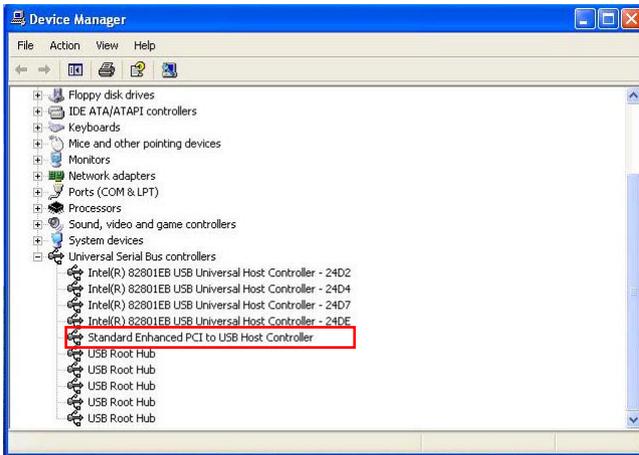


9. Final Dialog box will appear to remind you that you must restart your computer to finish updating the new hardware. Please click “Yes” to restart system and finish the LAN driver installation.

3-6 To Install USB 2.0 Driver for Windows 2000/XP

USB V2.0 with its 480Mb/s transfer rate supports operating system Windows 2000 and Windows XP via the Windows 2000 and Windows XP Service Pack. For achieving Intel USB 2.0 support, users should install the latest Service Pack for Windows 2000 or Windows XP. (intel USB 2.0 does not support Windows 9X/ME.)

1. After installation of Intel Chipset software installation Utility in Windows 2000 or Windows XP, start to install the latest Service Pack version into the operating system. The installation of the latest Service Pack will support USB2.0 in Windows 2000 or Windows XP now.(The latest Service Pack can be found in Microsoft Web Site.)
2. To verify USB2.0 installation, please enter “Device Manager” of “My Computer”. On the “Device Manager” screen, you should be able to see the item “Standard Enhanced PCI to USB Host Controller”, verifying USB2.0 Driver is installed successfully.



Memo

Chapter 4 AMI BIOS Setup

THE BIOS

BIOS stands for Basic Input and Output System. It was once called ROM BIOS when it was stored in a Read-Only Memory (ROM) chip. Now manufacturers would like to store BIOS in EEPROM which means Electrically Erasable Programmable Memory. BIOS used in this series of mainboard is stored in EEPROM, and is the first program to run when you turn on your computer.

BIOS performs the following functions:

1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
2. Loading and running your operating system.
3. Helping your operating system and application programs manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

This Chapter includes the following topics :

4-1 About BIOS Setup

4-2 To Run BIOS Setup

4-3 About CMOS

4-4 The POST (Power On Self Test)

4-5 To Update BIOS

4-6 BIOS Setup

Attention: The BIOS Setup is subject to constant update without further notice to users. It is necessary for users to update the onboard BIOS by the latest BIOS version provided in our web site: www.soltek.com.tw

4-1 About BIOS Setup

BIOS setup is an interactive BIOS program that you need to run when:

1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache)

4-2 To Run BIOS Setup

First access BIOS setup menu by pressing < DEL > key after "POST" is complete (before OS is loaded). BIOS will then display the following message:

DEL : SETUP

4-3 About CMOS

CMOS is the memory maintained by a battery. CMOS is used to store the BIOS settings you have selected in BIOS Setup. CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery runs out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and check and configure the BIOS Setup for the new start.

4-4 The POST (Power On Self Test)

POST is an acronym for Power On Self Test. This program will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

4-5 To Update BIOS

- System BIOS is incorporated into a Flash memory component. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.
- The Upgrade Utility can be loaded on a floppy diskette for upgrading saving, and verifying the system BIOS. The Update Utility can also be run from a hard disk drive or a network drive.
- It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (afudos.exe) to a bootable floppy disk so that you can reinstall the BIOS when in need.
- Normally, to update BIOS is unnecessary if the system is working fine. Users should only update BIOS when incompatible problems are encountered or new features have to be added to system.
- “AFUDOS.EXE” is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in ***DOS environment, the utility can not be executed in Windows 95/98, ME, NT, 2000 or Windows XP environment.***

- **Please follow the steps below for updating the system BIOS:**

Step 1. Please visit the board maker’s website, download the zip files of the latest BIOS and AMI flash utility “**amiflash.exe**” for your mainboard. After unzipping, the BIOS file format will be *.ROM, of which “ * ” stands for the specific BIOS file name.

Step 2. Create a bootable diskette. Then copy the BIOS file and AMI flash utility “**amiflash.exe**” into the diskette.

Step 3. Insert the diskette into drive A, boot your system from the diskette.

Step 4. Under “A” prompt, type “ **amiflash *.ROM** “ and then press <Enter> to run BIOS update program. (*.ROM depends on your mainboard model and version code. Instead of typing “*”, you should type the specific file name for your specific mainboard). For example, you may type “amiflash MP005.rom”.

Step 5. When the message “Flash ROM Update Completed - Pass.” appears, please restart your system.

Step 6. You will see a message “CMOS Memory Size Wrong” during booting the system. Press or <F1> to run CMOS setup utility, then reload “Load Failsafe Defaults” or “**Load Optimal Defaults**” and save this change.

Attention: The BIOS Setup is subject to constant update without further notice to users. It is necessary for users to update the onboard BIOS by the latest BIOS version provided in our web site: www.soltek.com.tw

4-6 BIOS SETUP --- CMOS Setup Utility

4-6.1 CMOS Setup Utility

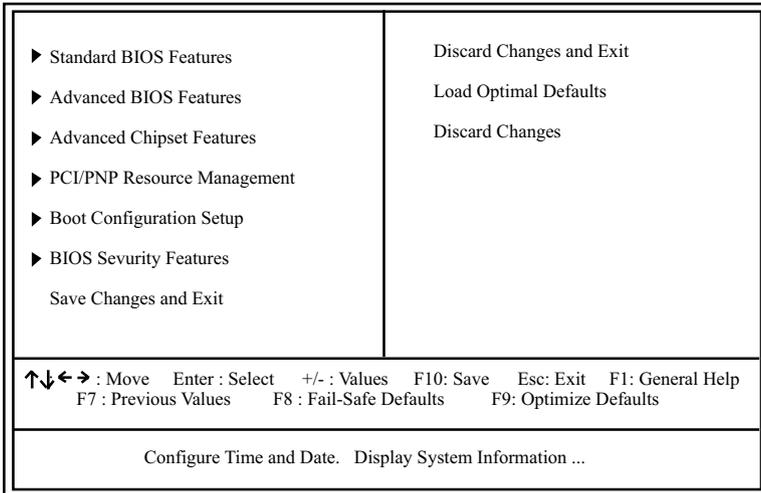
This mainboard comes with the AMI BIOS from American Megatrends Inc. Enter the CMOS Setup Utility Main Menu by:

1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

PRESS TO RUN SETUP

2. Press the key and the main program screen will appear as follows.

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.



3. Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
4. You may return to the Main Menu anytime by pressing <Esc>.
5. In the Main Menu, "Save Changes and Exit" saves your changes and reboots the system, and "Discard Changes and Exit" ignores your changes and exits the program.

4-6.2 Standard BIOS Features

“Standard BIOS Features” allows users to configure Time and Date. This menu also displays system information.

Run the Standard BIOS Features as follows:

1. Choose “Standard BIOS Features” from the Main Menu and press <Enter>. The following screen will appear:

CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Standard BIOS Features

System Overview	Help Item
AMIBIOS Version : 08.00.09 Build Date : 08/29/03 ID : AAAA000	Use [Enter], [Tab] or [Shift-Tab] to select a field. Use [+] or [-] to configure system Time.
Processor Type : Intel(R) Pentium(R) 4 CPU 1500MHz Speed : 1500MHz Count : 1	
System Memory Size : 256MB	
System Time : 09 : 25 : 29 System Date : Tue 09/09/2003	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

2. Use [Enter], [Tab] or [Shift-Tab] to select a field.
Use [+] or [-] to configure System Time.

<F1>: “General Help” provides explanations of the hot-key functions available.

<F7>: “Previous values” allows user to discard previous values or not.

<F8>: “Fail-safe defaults” allows user to load Fail-safe Defaults or not. Save and Exit Setup.

<F9>: “Optimized Defaults” allows user to load Optimal Defaults or not.

3. Press <ESC> to return to the Main Menu when you finish setting up Time and date. The following descriptions are provided as a quick guide to your setup.

AMIBIOS/Processor/ System memory These three items only show the respective current statuses. They cannot be changed in the BIOS Setup.

System Time The BIOS shows the time of the day in the format: hh:mm:ss. Choose the field with the Arrow keys and change the time with the Page Up/Page Down +/- keys.

System Date The BIOS shows the date of the day in the format: mm:dd:yy :day of the Week. Choose the field with the Arrow keys and change the value with the Page Up/Page Down +/- keys.

4-6.3.1 CPU Configuration

Choose “CPU Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

CPU Configuration

Configure advanced CPU settings	Help Item
Manufacturer : Intel Brand String : Intel(R) Pentium (R) 4 CPU 1500MHz Frequency : 1500MHz PSB Speed : 8 Ratio Status : Locked Ratio Actual Value : 15 Ratio CMOS Setting : 8 VID CMOS Setting : 62 L3 Cache Enabled Max CPUID Value Limit: Disabled Hyper-threading Technology Disabled	Sets the ratio between CPU core clock and the FSB Frequency. Note: If an invalid ratio is set in CMOS, then actual and setpoint values may differ.

Manufacturer BIOS shows the current manufacturer of on-board CPU.

Brand String BIOS shows the current brand of on-board CPU.

Frequency BIOS shows the current on-board CPU frequency.

Ratio Status BIOS shows the current ratio (multiplier) status of on-board CPU. For P4 CPUs, the ratio is usually locked.

Ratio Actual Value BIOS shows the actual CPU ratio.

Ratio CMOS Setting BIOS shows the CPU Ratio in CMOS. If an invalid ratio is set in CMOS, then actual and setpoint values may differ.

VID CMOS Setting Select VID at which CPU is to run.

L3 Cache To enable/disable L3 cache.

Max CPUID Value Limit To enable CPU Value limit if booting legacy OS that cannot support CPU with extended CPUID functions.

Hyper-threading Technology BIOS shows the current status of Hyper-threading Technology. If a Hyper-threading CPU is running on board, this item will show “Enabled” status. If a Hyper-threading CPU is not on-board, this item shows “Disabled”.

4-6.3.2 IDE Configuration

Choose “IDE Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for IDE Devices configuration:

IDE Configuration

IDE Configuration	Help Item
IDE Configuration	P/S-ATA (Auto)
S-ATA Running Enhanced Mode	Yes
P-ATA Channel Selection	Both
S-ATA Ports Definition	P0-3rd./P1-4th
▶ Primary IDE Master	Hard Disk
▶ Primary IDE Slave	ATAPI CDROM
▶ Secondary IDE Master	Not Detected
▶ Secondary IDE Slave	Not Detected
▶ Third IDE Master	Not Detected
▶ Fourth IDE Master	Not Detected
Hard Disk Write Protect	Disabled
IDE Detect Time Out (Sec)	35
ATA(P1) 80Pin Cable Detection	Host & Device

4-6.3.2-1 IDE Configuration

<p>IDE Configuration Allows you to configure IDE device mode. Choices: P/S-ATA(Auto): Parallel/Serial ATA combined mode; S-ATA Only: For S-ATA running on board only; P/S-ATA(Win98/Me): P/S-ATA on Win98/Me only Disabled: IDE Configuration disabled</p>
<p>IDE Configuration — Choosing “P/S-ATA(Auto)” to configure the following:</p> <p>S-ATA Running Enhanced Mode If P/S-ATA (Auto) is chosen, use this item to choose S-ATA Running Enhanced Mode. (Combined Mode Option) <input type="checkbox"/> Yes: Choose from the following option: P-ATA (parallel ATA) Channel Selection: Choices: Primary; Secondary; Both S-ATA Ports Definition: Choices: P0-3rd./P1-4th.; P0-4th./P1-3rd.</p> <p><input type="checkbox"/> No: Choose from the following options: P-ATA (parallel ATA) Channel Selection: Choices: Primary; Secondary; Both</p>
<p>IDE Configuration — Choosing “S-ATA Only” to configure the following:</p> <p>S-ATA Ports Definition Allows you to assign the S-ATA port locations. Choices: P0-3rd./P1-4th.; P0-4th./P1-3rd.;</p>
<p>IDE Configuration — Choosing “P/S-ATA(Win98/Me)” to configure the following:</p> <p>Combined Mode Option Choices: P-ATA 1st Channel; S-ATA 1st Channel;</p> <p>S-ATA Ports Definition Choices: P0-Master/P1-Slave; P0-Slave/P1-Master;</p>

4-6.3.2-2 Primary/Secondary IDE Master/Slave and Third/Fourth IDE Master

▶ Primary IDE Master	Hard Disk
▶ Primary IDE Slave	ATAPI CDROM
▶ Secondary IDE Master	Not Detected
▶ Secondary IDE Slave	Not Detected
▶ Third IDE Master	Not Detected
▶ Fourth IDE Master	Not Detected

Primary/Secondary IDE Master/Slave Press <Enter> To show the detected information of the Primary / Secondary IDE Master/Slave device(s).

Third/Fourth IDE Master Press <Enter> to show the detected information of third/fourth IDE Master device(s).

If any IDE device is detected in any one of the above items press <Enter> to reveal the IDE information:

Primary/(Secondary/Third/Fourth) IDE Master/(Slave)

Primary/(Secondary/Third/Fourth) IDE Master/(Slave)	Help Item
Device : Hard Disk Vendor : WDC WD400BB-00DEA0 Size : 40.0GB LBA Mode : Supported Block Mode : 16Sectors PIO Mode : 4 Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-5 S.M.A.R.T. : Supported	Select the type of device connected to the system.
Type : Auto LBA/Large mode : Auto Block (Multi-Sector Transfer) : Auto PIO Mode : Auto DMA Mode : Auto S.M.A.R.T. : Auto 32Bit Data Transfer : Disabled	

- Type** To select the types of the IDE devices:
Not Installed; Auto: Setting type automatically
CD-ROM: ATAPI (Packet Interface) CD-ROM drive
ARMD: ATAPI Removable Media Device
- LBA/Large mode** To auto-select (default) or disable LBA/Large mode.
- Block (Multi-Sector Transfer)** To auto-select (default) or disable Block Mode. If disabled, the data transfer from and to the device occurs one sector at a time; if enabled, the data transfer from and to the device occurs multiple sectors at a time.
- PIO Mode** To auto-select (default) or disable PIO Mode.
Choices: Disabled; 1, 2, 3, 4
- DMA Mode** To auto-select (default) or disable DMA Mode.
Choices: Auto; SWDMA(0-2); MWDMA(0-2);
UDMA(0-4)
- S.M.A.R.T** Allows you to enable / disable the Self Monitoring Analysis and Reporting Technology for the hard disk.
Choices: Auto(default); Enabled; Disabled
- 32Bit Data Transfer** To auto-select (default) or disable 32Bit Data Transfer.

4-6.3.2-3 Hard Disk Write Protect

Hard Disk Write Protect Allows you to Enabled / Disable(default) Hard Disk Write Protection

4-6.3.2-4 IDE Detect Time Out

IDE Detect Time Out (Sec) Allows you to set time out for IDE Detection.
Choices: 0 - 35 seconds in 5 seconds stepping

4-6.3.2-5 ATA(P) 80Pin Cable Detection

ATA(PI) 80Pin Cable Detection Allows you to select ATA(PI) devices for 80Pin Cable Detection. To set Host & Device allows onboard IDE controller and IDE disk drive to detect the type of IDE cable used.
Choices: Host & Device, Host, Device

4-6.3.4 Super IO Configuration

Choose “SuperIO Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

SuperIO Configuration

Configure Win627 Super IO Chipset	Help Item
OnBoard Floppy Controller	Enabled
Serial Port1 Address	3F8/IRQ4
Serial port2 Address	2F8/IRQ3
Serial port2 Mode	Normal
OnBoard CIR Port	Disabled
Parallel Port Address	378
Parallel Port Mode	Normal
Parallel Port IRQ	IRQ7

OnBoard Floppy Controller Allows you to enable / disable the Onboard Floppy Controller.

Choices: Enabled; Disabled

Serial Port1 Address Allows you to set the Onboard Serial Port1 Address.
Choices: Disabled; 3F8/IRQ4; 3E8/IRQ4; 2E8/IRQ3;

Serial Port2 Address Allows you to set the Onboard Serial Port2 Address.
Choices: Disabled; 2F8/IRQ3; 3E8/IRQ4; 2E8/IRQ3;

Serial Port 2 Mode If Serial Port2 Address is not disabled, it allows you to set the Serial Port 2 Mode. Choices:

- Normal;
- IrDA: Providing 2 items for configuration:
 - IR I/O Pin Select: SINB/SOUTB; IRRX/IRTX
 - IR Duplex Mode: Half Duplex; Full Duplex
- ASK IR: Providing 2 items for configuration:
 - IR I/O Pin Select: SINB/SOUTB; IRRX/IRTX
 - IR Duplex Mode: Half Duplex; Full Duplex

OnBoard CIR Port Allows you to set the onboard CIR Port.
Choices: Disabled; 2E0; 3E0

Parallel Port Address Allows you to configure Parallel Port Address.
Choices: Disabled; 378; 278; 3BC;

OnBoard CIR Port Allows you to set the onboard CIR Port.
Choices: Disabled; 2E0; 3E0

CIR Port IRQ Allows you to set the onboard CIR Port IRQ for 2E0
or 3E0.
Choices: IRQ3; IRQ4; IRQ9; IRQ10; IRQ11

Parallel Port Address Allows you to configure Parallel Port Address.
Choices: Disabled; 378; 278; 3BC;

- Disabled: To disable this function;
- 378: 2 items to configure for address 378:
 - Parallel Port Mode:
 - Normal;
 - Bi-Directional;
 - EPP:
 - EPP Version: 1.9; 1.7
 - ECP:
 - ECP Mode DMA Channel: DMA0; DMA1; DMA3
 - Parallel Port IRQ: IRQ5; IRQ7

4-6.3.5 Hardware Health Configuration

1. Choose “Hardware Health Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Hardware Health Configuration		Help Item
System Temperature	: 34°C/93°F	Enables Hardware Health Monitoring Device.
CPU Temperature	: 32°C/89°F	
Fan1 Speed	: 3125 RPM	
Fan2 Speed	: 3169 RPM	
Fan3 Speed	: N/A	
CPU Core	: 1.516 V	
+1.50V	: 1.516 V	
+3.30V	: 3.258 V	
+5.00V	: 5.094 V	
+12.0V	: 12.074 V	
-12.0V	: -12.048 V	
5VSB	: 5.467 V	
Battery	: 3.444 V	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimize Defaults

System Temperature Shows current system temperature.

CPU Temperature Shows current CPU internal temperature.

Fan1/2/3 Speed Displaying the current speed of Chassis/CPU/Power Fan.

CPU Core Showing CPU core actual voltage value.

1.5V/3.3V/+12V/+5.00V/5VSB/Battery Showing current voltage against the 1.5V/3.3V/+12V/+5V/5VSB/Battery power supply.

4-6.3.6 ACPI Configuration

Choose “ACPI Configuration” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for ACPI configuration:

ACPI Configuration

ACPI Settings	Help Item
<ul style="list-style-type: none"> ▶ General ACPI Configuration Press Enter ▶ Advanced ACPI Configuration Press Enter 	<p>Enables Hardware ACPI support for Operating System.</p> <p>Enable: If OS supports ACPI.</p> <p>Disable: If OS Does not support ACPI.</p>

▶ **General ACPI Configuration:**

To press < Enter > on General ACPI Configuration will reveal the following item(s).

Suspend mode This item allows you to select the Suspend mode. You can select S3(STR) for suspending to DRAM if your system supports this mode. Or you can select S1 (POS) for Power on Suspend under ACPI mode. Choices: S1(POS); S3(STR); Auto

(Optional) Repost Video at S3 Resume If STR mode or Auto mode is selected, this item allows you to enable / disable this function. Choices: Yes; No

(Optional) USB Device Wakeup From S3/S4 This item allows you to enable / disable the USB device Wakeup function from S3/S4 mode.

► **Advanced ACPI Configuration:**

To press < Enter > on Advanced ACPI Configuration will reveal the following item(s).

ACPI 2.0 Support Allows you to enable / disable ACPI (Advanced Configuration and Power Interface) 2.0 Support function.
Choices: Yes; No

ACPI APIC Support Allows you to enable / disable ACPI APIC (Advanced Programmable Interrupt Controller) Support function.

APIC ACPI SCI IRQ If APIC ACPI Support is enabled (Yes), it allows you to enable / disable APIC ACPI SCI IRQ function.

BIOS-->AML ACPI table Allows you to enable / disable BIOS-->AML ACPI table function.

Headless mode Allows you to enable / disable Headless operation mode through ACPI.

If users have installed USB Devices on the system, these items will appear as below for further configuration.

► **USB Mass Storage Device Config** Press “Enter” to view its submenu shown below.

USB Mass Storage Reset Delay To select number of seconds POST waits for the USB mass storage device after start unit command.
Choices: 10 Sec; 20 Sec; 30 Sec; 40 Sec

Device #X (USB Device Name)

Emulation Type USB devices which are less than 530MB will be emulated as Floppy and remaining as hard drive. “Forced FDD” can be used to force a HDD formatted drive to boot as FDD. (Ex. ZIP drive).
Choices: Auto; Floppy; Forced FDD; Hard Disk; CDROM

4-6.3.8 Frequency/Voltage Control

1. Choose "Frequency/Voltage Control" in "Advanced BIOS Features" and press <Enter>. The following sub-screen will appear for configuration:

Frequency/Voltage Control

Frequency/Voltage Configuration	Help Item
CPU Linear Frequency Enabled CPU Clock 100MHz Fix AGP/PCI Frequency Enable	Press "+"/"- " to select.
AGP Voltage Control 1.5V	
DIMM Voltage Control 2.5V	
CPU Voltage Control Auto	
Spread Spectrum Disabled	

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

CPU Linear Frequency This item allows you to enable / disable this setting function.

CPU Clock If CPU Linear Frequency is set at Enabled, this item allows you to set CPU Clock.
Choices: 100MHz ~350MHz in 1MHz stepping.
(100MHz~250MHz is for 100MHz CPU;
133MHz~283MHz is for 133MHz CPU;
200MHz~350MHz is for 200MHz CPU.)

Fix AGP/PCI Frequency Allows you to fix AGP/PCI Frequency.
Choices: Enabled; Disabled

AGP Voltage Control Allows you to configure the AGP Voltage.
Choices: 1.5V; 1.6V; 1.7V; 1.8V

DIMM Voltage Control Allows you to configure the DIMM Voltage.
Choices: 2.6V; 2.7V; 2.8V; 2.9V

CPU Voltage Control Allows you to configure the CPU Voltage. Usually, to raise CPU voltage will raise the chance of CPU overclocking and yet risk damage of CPU.
Choices: Auto; 0.8500V ~1.6000V in 0.0125V stepping

Spread Spectrum To enable/disable Spread Spectrum function.
Choices: 0.35%; 0.50%; 0.75%; 1.00%; Disabled

4-6.3.9 Power Management

1. Choose “Power Management” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Power Management		Help Item
APM Configuration		
Power Management/APM	Enabled	Enable or disable APM.
Video Power Down Mode	Suspend	
Hard Disk Power Down Mode	Suspend	
Standby Time Out	Disabled	
Suspend Time Out	Disabled	
Power Button mode	On/Off	
Restore on AC Power Loss	Power Off	
Resume On Ring	Disabled	
Resume On LAN/PME#	Disabled	
Resume On RTC Alarm	Disabled	

↑↓↔ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

Power Management/ Allows you to enable (default)/ disable the Power management / Advanced Power Management function.

Video Power Down Mode Allows you to select the Video Power Down Mode. Choices: Disabled; Standby; Suspend

Hard Disk Power Down Mode Allows you to select the Hard Disk Power Down Mode. Choices: Disabled; Standby; Suspend

Standby Time Out (Minute) To set the duration of Standby Time Out. Choices: Disabled; 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

Suspend Time Out (Minute) To set the duration of Suspend Time Out. Choices: Disabled; 1; 2; 4; 8; 10; 20; 30; 40; 50; 60

- Power Button Function** Allows you to set power Button function.
Choices: On/Off (default); Suspend
- Restore on AC/Power Loss** Allows you to set the restore state from AC/Power Loss.
Choices: Last State; Power Off (default); Power On
- Resume on Ring** Allows you to enable / disable (default)the Resume on Ring Signal function.
An input signal on the serial Ring Indicator (RI) Line (in other words, an incoming call on the modem) awakens the system from a soft off state.
- Resume on LAN/PME#** Allows you to enable / disable (default)the Resume on LAN/PME# function.
- Resume On RTC Alarm** Allows you to enable / disable (default)the Resume On RTC Alarm function.

RTC Alarm Date / Hour / Minute / Second	If resume On RTC Alarm is enabled, this field allows you to set the Alarm date Hour, Minute and second. Date Choices: Every Day; 01 ~ 31 Hour Choices: 00 ~ 23 Minute Choices: 00 ~ 59 Second Choices: 00 ~ 59
--	--

4-6.4.1 NorthBridge Configuration

Choose “NorthBridge Configuration” in “Advanced Chipset Features” and press <Enter>. The following sub-screen will appear for configuration:

NorthBridge Configuration

		Help Item
DRAM Frequency	Auto	
Configure DRAM Timing by SPD	Enabled	
DRAM Integrity Mode	Disabled	
Memory Hole	Disabled	
Init. Graphic Adapter Priority	AGP	
Graphics Aperture Size	64MB	
C.S.A Gigabit Ethernet	Auto	

DRAM Frequency Allows you to set the current SDRAM frequency.
Choices: Auto; 266MHz; 333MHz; 400MHz

Configure SDRAM Timing by SPD SPD (Serial presence detect) is a device in memory module for storing the module information such as DRAM timing and chip parameters. If this option is enabled, BIOS will access SPD automatically to configure module timing. If disabled, DRAM timing can be configured manually.
Default: Enabled

- | | |
|--------------------------------|--|
| DRAM CAS# Latency | With SDRAM Timing by SPD disabled, you can select the SDRAM CAS# (Column Address Strode)latency manually.
Choices: 2 Clocks; 2.5 Clocks; 3 Clocks |
| DRAM RAS# Precharge | With SDRAM Timing by SPD disabled, you can select the SDRAM RAS# (Row Address Strode) Precharge cycle manually.
Choices: 2 Clocks; 3 Clocks; 4 Clocks |
| DRAM RAS# to CAS# Delay | With SDRAM Timing by SPD disabled, you can select the SDRAM RAS# to CAS# delay cycle manually.
Choices: 2 Clocks; 3 Clocks; 4 Clocks |
| DRAM Precharge Delay | Allows you to set the SDRAM Precharge Delay cycle.
Choices: 5 Clocks; 6 Clocks; 7 Clocks; 8 Clocks |
| DRAM Burst Length | With SDRAM Timing by SPD disabled, you can select the SDRAM Burst length manually.
Choices: 8; 4 |
- DRAM Integrity Mode** Allows you to enable / disable (default) DRAM Integrity Mode.
Choices: Disabled; ECC
- Memory Hole** Allows you to enable / disable (default) the support of Memory Hole which is reserved for ISA card.
Choices: Disabled; 15MB-16MB
- Primary Graphics Adapter** Allows you to select the Primary Graphics Adapter.
Choices: AGP(default); PCI;
- AGP Aperture Size** Series of options are available: 4, 8, 16, 32, 64, 128, 256MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S. The default setting is 64MB.
- C.S.A Gigabit Ethernet** Allows you to enable/disable C.S.A Gigabit Ethernet.
Choices: Auto(default); Disabled;

4-6.5 PCI/PNP Resource Management

PCI/PNP Resource Management allows you to modify the system’s power saving functions.

1. Choose “PCI/PNP Resource Management” from the Main Menu and a screen with a list of options will appear:

**CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
PCI/PNP Resource Management**

Advanced PCI/PNP Settings	Help Item
Warning: Setting wrong values in below sections may cause system to malfunction.	
Plug & Play O/S	No
PCI Latency Timer	32
Allocate IRQ to PCI VGA	Yes
Palette Snooping	Disabled
PCI IDE BusMaster	Disabled
OffBoard PCI/ISA IDE Card	Auto
IRQ3	Available
IRQ4	Available
IRQ5	Available
IRQ7	Available
IRQ9	Available
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

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using + / - keys. An explanation of the <F> keys follow (The option marked with a triangle by the left consists of sub-options):

<F1>: “General Help” provides explanations of the hot-key functions available.

<F7>: “Previous values” allows user to discard previous values or not.

<F8>: “Fail-safe defaults” allows user to load Fail-safe Defaults or not. Save and Exit Setup.

<F9>: “Optimized Defaults” allows user to load Optimal Defaults or not.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following descriptions are provided as a quick guide.
-

- Plug & Play O/S** Allows you to configure the PNP devices by BIOS or O/S.
Choices: No(by BIOS) (default); Yes(by O/S)
- PCI Latency Timer (PCI Clocks)** Allows you to set the PCI Latency Time.
Choices: 32(default); 64; 96; 192; 128; 160; 192; 224; 248;
- Allocate IRQ to PCI VGA** Allows you to assign IRQ to PCI VGA card if card requests IRQ.
Choices: Yes(default); No
- Palette Snooping** This option allows the BIOS to preview VGA status, and to modify the information delivered from the feature Connector of the VGA card to MPEG card. This option can solve the display inversion to black after you have used a MPEG card.
- PCI IDE BusMaster** Allows you to enable / disable(default) the PCI IDE Bus Master function.
- OffBoard PCI/ISA IDE Card** Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card.
Choices: Auto; PCI Slot1; PCI Slot2; PCI Slot3; PCI Slot4; PCI Slot5;
- IRQ 3/4/5/7/9/10/11/14/15** Allows you to specify available IRQs to be used by PCI/PNP devices.
Choices: Available(default); Reserved
- DMA 0/1/3/5/6/7** Allows you to specify available DMAs to be used by PCI/PNP devices.
Choices: Available(default); Reserved
- Reserved Memory Size** Allows you to specify memory size to reserve for legacy ISA devices.
Choices: Disabled(default); 16K; 32K; 64K

4-6.6 Boot Configuration Setup

Boot Configuration Setup allows you to modify the system's boot settings.

1. Choose "Boot Configuration Setup" from the Main Menu and a screen with a list of options will appear:

**CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Boot Configuration Setup**

Boot Settings	Help Item
<ul style="list-style-type: none"> ▶ Boot Setting Configuration Press Enter ▶ Boot Device Priority Press Enter ▶ Hard Disk Drives Press Enter ▶ Removable Drives Press Enter ▶ ATAPI CDROM Drives Press Enter <p style="margin-left: 20px;">If users have installed hard disks, removable drives (including Floppies and USB storage devices), CDROM drives on the system, BIOS will show these items to let users configure the devices to decide the primary boot device.</p>	<p>Configure Settings during System Boot.</p>

↑↓←→ : Move Enter : Select +/- : Values F10: Save Esc: Exit F1: General Help
 F7 : Previous Values F8 : Fail-Safe Defaults F9: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using + / - keys. An explanation of the <F> keys follow (The option marked with a triangle by the left consists of sub-options):

<F1>: "General Help" provides explanations of the hot-key functions available.

<F7>: "Previous values" allows user to discard previous values or not.

<F8>: "Fail-safe defaults" allows user to load Fail-safe Defaults or not. Save and Exit Setup.

<F9>: "Optimized Defaults" allows user to load Optimal Defaults or not.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following descriptions are provided as a quick guide.

4-6.6.1 Boot Settings Configuration

Choose “Boot Settings Configuration” in “Boot Configuration Setup” and press <Enter>. The following items will appear for onfiguration:

Boot Configuration Setup

Boot Settings	Help Item
Quick Boot Quiet Boot AddOn ROM Display Mode Bootup Num-Lock PS/2 Mouse Support Wait For 'F1' If Error Hit 'DEL' Message Display Interrupt 19 Capture	Enabled Disabled Force BIOS On Auto Enabled Enabled Disabled Configure Settings during System Boot.

Quick Boot Allows you to enable (default)/ disable quick boot of your system. If enabled, BIOS will skip certain tests while booting. This will decrease the time needed to boot the system.

Quiet Boot The bootup screen displays normal POST messages with Disabled selected; the bootup screen displays OEM Logo instead of POST messages with Enabled selected.
 Choices: Enabled; Disabled

AddOn ROM Display Mode If “Force BIOS” (default) is chosen, the vendor’s logo screen will be followed by the “AddOn ROM” initial screen (the screen showing the add-on card BIOS message). If “Keep Current” is chosen, no “Add-On ROM” screen is followed.

Bootup Num-lock Allows you to toggle between On (default) or Off to control the state of the NumLock keys when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.

PS/2 Mouse Support Enabled (default), PS/2 mouse is supported. Disabled, PS/2 Mouse is not supported. If “Auto” is set, the system will auto detect the PS/2 Mouse.

Wait For ‘F1’ If Error Allows you to hit F1 key when errors occur.
 Choices: Enabled(default); Disabled

Hit ‘DEL’ Message Display The system will show “Press DEL key to run Setup when enabled.
 Choices: Enabled(default); Disabled

Interrupt 19 Capture Allows option ROMs to trap interrupt 19.
 Choices: Enabled; Disabled(default)

4-6.6.2 Boot Device Priority

Choose “Boot Device Priority” in “Boot Configuration Setup” and press <Enter>. The bootable devices installed on board will appear and are allowed to assign the Boot Priority.

Boot Device Priority

Boot Device Priority		Help Item
1st Boot Device	1st FLOPPY DRIVE	Configure Settings during System Boot.
2nd Boot Device	PM-WDC WD400BB-00	
3rd Boot Device	SS-COPY-ROM 5238E	

1st/2nd/3rd Boot Device Allows you to set (by pressing <Enter>) floppy or IDE devices already installed to be the 1st/2nd/3rd boot device.
 Choices: Disabled; Device(s) installed

4-6.7 Boot Security Features

Boot Security Features allows you to modify the system’s boot security settings.

1. Choose “Boot Security Features” from the Main Menu and a screen with a list of options will appear:

**CMOS Setup Utility - Copyright (C) 1985-2002, American Megatrends, Inc.
Boot Security Features**

Security Settings	Help Item
Supervisor Password : Not Installed User Password : Not Installed	Install or Change the password.
Change Supervisor Password Press Enter	
User Access Level Full Access	
Change User Password Press Enter	
Clear User Password Press Enter	
Password Check Setup	
Boot Sector Virus Protection Disabled	

↑↓←→: Move Enter: Select +/-: Values F10: Save Esc: Exit F1: General Help
F7: Previous Values F8: Fail-Safe Defaults F9: Optimized Defaults

2. Use one of the arrow keys to move between options and modify the selected options by using + / - keys. An explanation of the <F> keys follow (The option marked with a triangle by the left consists of sub-options):

<F1>: “General Help” provides explanations of the hot-key functions available.

<F7>: “Previous values” allows user to discard previous values or not.

<F8>: “Fail-safe defaults” allows user to load Fail-safe Defaults or not. Save and Exit Setup.

<F9>: “Optimized Defaults” allows user to load Optimal Defaults or not.

3. Press <ESC> to return to the Main Menu when you finish setting up all items. The following descriptions are provided as a quick guide.

4-6.7.1 Supervisor Password

To show the status of Supervisor Password. “Installed” is displayed when supervisor password is set up. Otherwise, “Not Installed” is displayed.

4-6.7.2 User Password

To show the status of User Password. “Installed” is displayed when supervisor password is set up. Otherwise, “Not Installed” is displayed.

4-6.7.3 Change Supervisor Password

This option allows you to set a new Supervisor password for the system:

1. Choose “Change Supervisor Password” in the “BIOS Security Features” and press <Enter>. Then the following message appears:

[Enter new supervisor password]

2. The first time you run this option, enter your password up to 6 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears, prompting you to confirm the password:

[Confirm New Password]

4. Enter the same password “exactly” the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[Password installed]
[OK]

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press “Save Changes and Exit” and choose “OK” to exit and save setup.
7. If you enter a new password into the box, you will be using this new password after you have finished and saved this new setup. Instead, if you press <Enter> before you enter any new password into the instruction box, another message box appears, telling you that you have disabled the Supervisor Password. That means, no password is set for either entering BIOS Setup or system:

[Password uninstalled]
[OK]

User Access Level Allows you to set four different Access Levels when Supervisor Password has been set.
Choices: Full Access; Limited; View Only; No Access

Note: “User Access Level” and “Password Check” will appear when “Supervisor Password” has been set.

4-6.7.4 Change User Password

This option allows you to set a new User password for the system:

1. Choose "Change User Password" in the "BIOS Security Features" and press <Enter>. Then the following message appears:

[Enter New Password]

2. The first time you run this option, enter your password up to 6 characters and press <Enter>. (The screen does not display the entered characters.)
3. After you enter the password, the following message appears, prompting you to confirm the password:

[Confirm New Password]

4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
5. The following message appears to confirm the new password setup.

[Password installed]
[OK]

6. Then press any key to continue your CMOS Setup. To save the password setup, you should press "Save Changes and Exit" and choose "OK" to exit and save setup.

4-6.7.5 Clear User Password

1. To remove the current user password, choose "Clear User Password" and press <Enter>. An instruction box appears on the screen, assuring to clear User Password:

Clear User Password?
[OK] [Cancel]

2. Then choose [OK] and press <Enter>. The User Password is successfully removed.

Password Check Allows you to set BIOS to check up password with a password prompt at BIOS Setup or whenever re-starting system. This option will appear when you have set Supervisor Password or User Password. Choices: Setup (default); Always

4-6.7.6 Boot Sector Virus Protection

Boot Sector Virus Protection When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an antivirus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

NOTE: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you disable the virus warning.

4-6.8 Save Changes and Exit

Save Changes and Exit allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:

[Saving configuration changes and exit setup?]	
[OK]	[Cancel]

Press <Enter> key to save the configuration changes and exit CMOS Setup to restart your system.

4-6.9 Discard Changes (and Exit)

Discard Changes option allows you to exit (or not exit) the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and press <Enter> and the following message appears:

[Discard Changes (and exit setup?)]	
[OK]	[Cancel]

Follow the message and press <Enter> key to exit CMOS Setup and restart system.

4-6.10 Load Optimal Defaults

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

[Load Optimal Defaults ?]	
[OK]	[Cancel]

Press <Enter> now to load Optimal values for all the Setup options.

4-6.11 Discard Changes

Discard Changes option allows you to cancel the modifications that you have specified in the Setup Utility. Highlight this option on the Main Menu and press <Enter> and the following message appears:

[Discard Changes?]	
[OK]	[Cancel]

Follow the message and press <Enter> key to cancel the modifications that you have specified.

Chapter 5 RAID Controller

The following topics are included in this chapter:

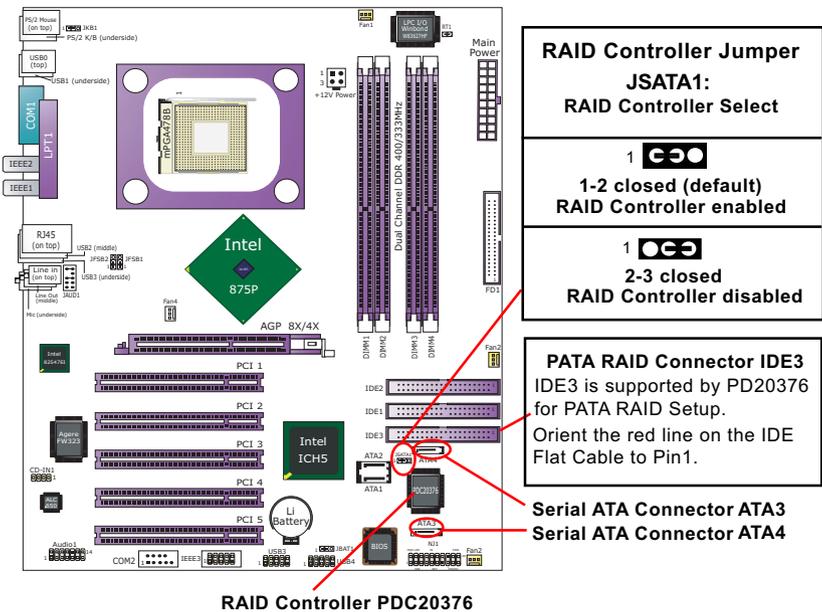
5-0 Before Creating Disk Array

5-1 Creating your Disk Array

5-2 Installing RAID Controller PDC20376 Driver

5-0 Before Creating Disk Array:

1. JSATA1 is a 3-pin jumper for enabling or disabling the on-board Serial ATA RAID Controller PDC20376. Setting JSATA1 1-2 CLOSED will allow user to enable on-board RAID Controller so as to allow user to set up the Disk Array.
2. Please locate the Promise RAID Controller on your mainboard to make sure that you are using the right board.
3. After you have enabled the Serial ATA RAID Controller with JSATA1, you can now install the Serial ATA RAID Controller Driver into your system.



5-1 Creating Your Disk Array

To create your disk array, you have to open the FastBuild Utility, which should have already been built in the Promise Controller. At booting your system, you will see the following initiating screen:

```
FastTrak 376(tm) BIOS Version xxxxxx
(c) 2--2-2005 Promise Technology, Inc. All rights reserved.

No Array is defined.....

Press <Ctrl-F> to enter Fastbuild(tm) Utility or
Press <ESC> to continue booting.....
```

Press <Ctrl-F> to enter Fastbuild Utility NOW!

You can create two types of array with the help of FastBuild Utility.

1. An array for Performance in Striping type with 1 or 2 drives (or called RAID 0).
2. An array for Data Security in Mirroring type with 2 drives treated as one disk array (or called RAID 1).

WARNING : To create a Security array using an existing hard drive, backup any necessary data. Failure to follow this could result in data loss.

5-1.1 Creating An Array For Performance/Security

FastTrak 376 allows users to create striped arrays with 1 or 2 drives.

1. Boot your system with Controller PDC20376 enabled by JSATA1 and your hard drive(s) connected to IDE3/ATA3/ATA4. Suppose this is the first time to create a Disk Array. The Promise BIOS on board with FastBuild Utility built in will scan the IDE devices and display the result as below:

```
FastTrak 376 (tm) BIOS Version 1.xx
(c) 2002-2005 Promise Technology, Inc. All Rights Reserved.

No array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility or
Press <ESC> key to continue booting .....
```

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.

Auto Setup	[1]
View Drive Assignment	[2]
Define Array	[3]
Delete Array	[4]
Rebuild Array	[5]

3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to create your first array.

[Auto Setup Options Menu]	
Optimize Array for:	Performance
[Array Setup Configuration]	
Mode	Stripe
Spare Drive	0
Drives used in Array	1
Array Disk Capacity	38166
[Keys Available]	
[↑] Up [↓] Down [←,→, Space] Change Option [ESC] Exit [Ctrl-Y] Save	

- If only one hard disk is inserted, the only choice is "Performance" under "**Optimize Array for**" section. If two hard disks are inserted, "Performance" and "Security" are the choices. If three hard disks are inserted, "Performance" is the only choice.
- If only one hard disk is inserted, "Stripe" will appear under "Mode" section. If two or three hard disks are inserted, "Mirror" will appear for "Security" in "Mode" section.
- Press <Ctrl-Y> keys to save and create the array.
- Reboot your system.
- Once the array has been created on new drive(s), you would need to FDisk and format the array as if it were a new single hard drive.
- Also proceed to "Installing Drivers" section of this Chapter for system and FastTrak 376 Driver setup.

5-1.2 Creating Security Array With Existing Data Drive

FastTrak 376 on board permits only two drives to be used for a single Mirroring (Security) array with FastBuild Utility.

Checkpoints before creating a Security Array:

- (1) You may use a drive that is containing data or a bootable O/S. Then you will need another new drive of identical or larger storage capacity.
 - (2) Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.
 - (3) If you wish to include your current bootable drive holding Window NT 4.x or Windows 2000 O/S as part of a bootable Mirroring (RAID 1) array on your FastTrak 376 controller , you SHOULD first install the Windows NT4 or 2000 driver software to this drive while it is still attached to your system hard drive controller (e.g. IDE1/IDE2). For all other Operating Systems except Win NT4.0 and 2000, you can proceed with your hard driver(s) connected to IDE3/ATA3/ATA4.
1. Boot your system with FastTrak 376 Controller enabled by JSATA1 and your hard drive(s) connected to IDE3/ATA3/ATA4. Suppose this is the first time to create a Disk Array. The Promise BIOS on board with FastBuild Utility built in will scan the IDE devices and display the result as below:

```
FastTrak 376 (tm) BIOS Version 1.xx
(c) 2002-2005 Promise Technology, Inc. All Rights Reserved.

      No array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility or
Press <ESC> key to continue booting .....
```

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.

3. Press “1” to display the Auto Setup Menu below. This is the fastest and easiest method to create your first array.

[Auto Setup Options Menu]	
Optimize Array for:	Performance
[Array Setup Configuration]	
Mode	Stripe
Spare Drive	0
Drives used in Array	1
Array Disk Capacity	38166
[Keys Available]	
[↑] Up [↓] Down [←,→, Space] Change Option [ESC] Exit [Ctrl-Y] Save	

4. Using the Spacebar, choose “Security” under the **Optimize Array for** section.
5. Press <Ctrl-Y> keys to Save your selection.
6. Reboot your system.
7. Once the array has been created on new drive(s), you would need to FDisk and format the array as if it were a new single hard drive.
8. Also proceed to “Installing Drivers” section of this Chapter for system and FastTrak 376 Driver setup.

5-2 Installing Drivers

This section details the PDC 20376 FastTrak 376 driver installation for various operating systems. The driver should have been included either into the Support CD or into a Support Floppy Diskette.

Checkpoints for the driver installation:

1. To install FastTrak 376 Driver for an operating system, you must use *the driver in Floppy Diskette instead of the one in CD. If you are not provided with a Driver Diskette, you should create one by copying the driver files through the support CD with the path:*
"E:\Driver\Promise\FastTrak 376. (Suppose that CD-ROM Drive is E).
2. The following sections describe the detailed procedures of installing FastTrak 100-Lite Driver for windows 2000, Windows 95/98, Windows NT4.0, and Windows 3.1 / DOS.

5-2.1 For Windows 2000/XP

5-2.1-1 Installing Driver During New Installation of Windows 2000 / XP

1. Connect your hard driver(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1.
 - 1a. Bootable floppy: Boot from bootable floppy and type "WINNT".
After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration..." appears.
 - 1b. CD-ROM Install: Boot from the Win 2000 / XP CD. Press <F6> after the message " Press F6 if you need to install third party SCSI or RAID driver" appears.
2. When the "Win 2000/ XP Setup" window is generated, Press "S" to specify an Additional Device(s).
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert into drive A the Promise Technology ® RAID driver diskette (you can make one yourself from your Support CD if you cannot find one in the Mainboard Package) and press "Enter" key.
5. Choose "Win2000/ XP Promise FastTrak 376 Controller" from the list that appears on screen, then press the "Enter" key.
6. The Win 2000/XP Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000/XP Promise FastTrak 376 controller".

Note: If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.

7. From the Win 2000/XP Setup screen, press the Enter key. Setup will now load all device files and then continue the Win 2000/XP installation.

5-2.1-2 Installing Driver To Existing Win 2000/XP System

WARNING: You must first complete installing the driver before moving the boot drive containing the existing Win 2000/XP operating system on to the FastTrak 376 controller (e.g. IDE3/ATA3/ATA4). On mainboard, IDE1/2 are for system IDE controller, while IDE3 & ATA3/4 are under RAID controller.

At booting with Win 2000/XP system and your hard drive(s) connected to IDE1/2, Win 2000/XP setup will show a "New Hardware Found" dialog box. Under Win 2000/XP, the "PCI RAID Controller" will be displayed.

1. In the dialog box, choose "Driver from disk provided by hardware manufacturer" button.
2. In the A: drive, insert the FastTrak 376 driver diskette.
3. Type "A:\WIN2000\XP" in the text box. Press "Enter".
4. Choose "Win2000/XP Promise FastTrak 376 Controller" from the list that appears on screen, then press the "Enter" key.
5. The Win 2000/XP setup screen will appear again saying "Setup will load support for the following mass storage device - Win2K/XP Promise FastTrak 376 controller. The FastTrak 376 driver will now be copied on to the system and entered into the Win 2000/XP driver database.
6. When the "System Setting Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Win 2000/XP will then restart for the driver installation to take effect.
7. Power off your system, then attach your hard drive to the FastTrak 376 controller, e.g. IDE3/ATA3/ATA4.

5-2.1-3 Confirming Windows 2000 Installation

1. From Windows 2000, open the Control Panel from “ My Computer” followed by the System icon.
2. Choose the “Hardware” tab, then click the “Device Manager” tab.
3. Click the “+” in front of “SCSI & RAID Controllers hardware type.” The driver “Win2000 Promise FastTrak/FastTrak 376 Controller” should appear, informing user that the controller driver is already installed.

5-2.2 Windows 95/98

5-2.2-1 Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the FastTrak 376 drivers while installing Windows 95/98 (with the FastTrak 376 controller card already in place). If you're installing the FastTrak 376 drivers on a system with Windows 95/98 already installed, see “Installing Drivers with Existing Windows 95/98”.

5-2.2-2 Windows 98

1. Connect your hard drive(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1. Configure the hard drive (s), partition and format your hard driver(s).
2. Install Windows 98 normally.
3. After installation, go to “Start” menu and choose “Settings.”
4. Form the “Settings” menu, choose “Control Panel.”
5. In the “Controller Panel” window, double-click on the “System” icon.
6. In the “System” window, choose the “Device Manager” tab.
7. In the hierarchical display under “Other Devices” is a listing for “PCI RAID Controller.” Choose it and then press the “Properties” button.
8. Choose the “Driver” tab in the “Properties” window, choose “Update Driver,” and then press “Next.”
9. Choose “Search for a better driver than the one your device is using now (recommended),” then press “Next”.
10. Choose “Specify Location,” and then type “A:\WIN95-98” in the text box.

11. Insert the "FastTrak 376 Driver" diskette into the A: drive.
12. Press the "Next" button. A message informing you that Windows 98 has found "Win95-98 Promise FastTrak 376 (tm) Controller" should appear.
13. Press "Next," then "Finish," then "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

5-2.2-3 Windows 95

1. Connect your hard drive(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1. Configure the hard drive(s) for RAID Array, partition and format your hard driver(s).
2. Install Windows 95 normally.
3. After installation, go to "Start" menu and choose "Settings."
4. Form the "Settings" menu, choose "Control Panel."
5. In the "Controller Panel" window, double-click on the "System" icon,
6. In the "System" window, choose the "Device Manager" tab.
7. In the hierarchical display under "Other Devices" is a listing for "PCI RAID Controller." Choose it and then press the "Properties" button.
8. Choose the "Driver" tab in the "Properties" window, and then press the "Update Driver" button.
9. When asked if you want Windows to research for the driver, choose "Yes (recommended)."
10. Insert the "FastTrak 376 Driver" diskette into the A: drive, then press "Next."
11. When Windows informs you that it was unable to find the drivers, press "Other Locations..."
12. In the "Select Other Location" dialog box, type "A:\WIN9x-ME".
13. Press "Next" button. A message informing you that Windows 95 has found "Win95-98 Promise FastTrak 376 (tm) Controller" should appear.
14. Press "Finish." (If Windows can't find the "FastTrak 376.MPD" file, type "A:\WIN9x-ME" in the copy files from:" text box).
15. Choose "Yes" when asked if you wish to restart the system, and remove the diskette from Drive A.

5-2.2-4 Installing Drivers With Existing Windows 95/98

The following three sections detail the installation of the FastTrak 376 drivers on a system that has Windows 95/98 already installed. If you're installing the FastTrak 376 drivers on a system during a Windows 95/98 installation, see "Installing Drivers During Windows 95/98 Installation".

5-2.2-5 Windows 98

1. Connect your hard drive(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1. Configure the hard drive(s) for RAID Array, power up the system and boot Windows.
2. The "Add New Hardware Wizard" will appear, informing you that it has found a "PCI RAID Controller."
3. Check the "Search for the best driver for your device" box and click the Next button.
4. Check the "Specify a Location" box and click the Next button.
5. Type "A:\WIN9x-ME" in the text box that appears.
6. Insert the "FastTrak 376 Driver" diskette in drive A:.
7. Click on "Next." The Add New Hardware wizard will say it has found "Win95-98 Promise FastTrak 376 Controller".
8. Click on "Next," and then on "Finish."
9. Choose "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

5-2.2-6 Windows 95

1. Connect your hard drive(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1. Configure the hard drive(s) for RAID Array, power up the system and boot Windows.
2. The "Update Device Drive Wizard" will appear, informing you that it has found a "PCI Mass Storage Controller."
3. Insert the "FastTrak 376 Driver" diskette in drive A:.
4. Type "A:\WIN9x-ME" in the text box, then click on "Next." Windows will inform you that it has found the "Win95/98 Promise FastTrak 376 controller".
5. Click on "Finish," and when prompted to insert the "FastTrak 376 Driver" diskette, click on "OK."
6. If a message informing you that the file "Win95/98 Promise FastTrak 376.MPD" cannot be found, go to the "Copy files from:" text box and type: "A:\WIN9x-ME".

7. Choose "Yes" when asked whether you want to start your computer. Be sure to remove the diskette from drive A.

5-2.2-7 Confirming Driver Installation in Windows 95/98

To confirm that the driver has been properly loaded in Win 95/98, perform the following steps:

1. Choose "Settings" from the "Start" menu.
2. Choose "Controller Panel", and then double-click on the "System" icon.
3. Choose the "Device Manager" tab, and click the "+" in front of "SCSI & RAID controllers." "Win95-98 Promise FastTrak 376 controller" should appear.

5-2.3 DOS/Windows 3.1x

For first-time installation, follow the standard procedure of installing DOS on to your hard disk (partition all hard drive with FDISK and format before performing the following procedure):

1. Insert "Disk 1" of your DOS installation diskettes into drive A:.
2. Type "A:\SETUP" at the "A:\>" prompt.
3. Continue with normal DOS installation procedure, and refer to your DOS manual for additional details.

Note: *The FastTrak 376 BIOS supports both DOS and Windows 3.1x without software drivers installed.*

5-2.4 Windows NT4.0

5-2.4-1 Installing Drivers During Windows NT 4.0 Installation

1. Connect your hard drive(s) for RAID Array to IDE3/ATA3/ATA4, and enable FastTrak 376 Controller by JSATA1. Start the system installation by booting from the Windows NT disk:
 - a) Floppy install: boot the system with the Windows NT installation diskettes.
 - b) Other bootable Floppy: boot from the bootable floppy and type "WINNT/B". After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
 - c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
2. When the "Windows NT Setup" windows is generated, press "S" to specify an Additional Device(s).
3. Press "O" to select "Other" and press the "Enter" key.
4. Insert into drive A the Promise Technology ® FastTrak 376 driver diskette that you have made from the support CD: and press "Enter" key.
5. Choose "Win NT Promise FastTrak 376 (tm) Controller" from the list that appears on screen, then press the "Enter" key.
6. The Windows NT Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win NT Promise FastTrak 376 (tm) controller".

Note: *If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.*

7. From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.
8. After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak 376 (tm) Controller" driver has been installed.

5-2.4-2 Installing Drivers With Existing Windows NT4.0

WARNING: You must first complete installing the driver before moving the boot drive containing the existing Windows 2000 operating system on to the FastTrak 376 controller (e.g. IDE3/ATA3/ATA4). On mainboard, IDE1/0 are for system IDE controller, while IDE3 & ATA3/4 are under RAID controller.

With your bootable hard drive connected to IDE1/IDE2 and FastTrak 376 enabled by JSATA1, boot Win NT4.0.

1. Choose "Settings" from the "Start" menu.
2. Choose "Controller Panel" from the "Settings" menu.
3. Double-click on the "SCSI Adapters" icon, which generates the "SCSI Adapters" dialog box.
4. Choose "Drivers," and then press "Add."
5. In the "Install Drivers" dialog box, press "Have Disk..."
6. When the "Install From Disk" appears, insert into Drive A the "FastTrak 376 Driver" diskette that you have made from support CD:.
7. Type "A:\NT4" in the text box window, then choose "OK."
8. When the "Install Driver" dialog box appears, select "Win NT Promise FastTrak 376 controller" and then press "OK."
9. When the "Select SCSI Adapter Option" dialog box appears, press "Install".
10. After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak 376 (tm) Controller" driver has been installed.
11. Power off your system.
12. Now you can move the boot drive to the FastTrak 376 Controller.