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Memo

Chapter 1 Specification

Introduction

This series of mainboards features an integration of the powerful Intel 775-pin Prescott CPU and the North Bridge Intel 915G. The 775- pin Prescott CPU is a rapid execution engine providing 800/533MHz system bus, while North Bridge Intel 915G is a high performance integrated chipset providing Dual Channel DDR 400/333 SDRAM memory interface, Hub interface VGA interface as well as x16 PCI Express interface.

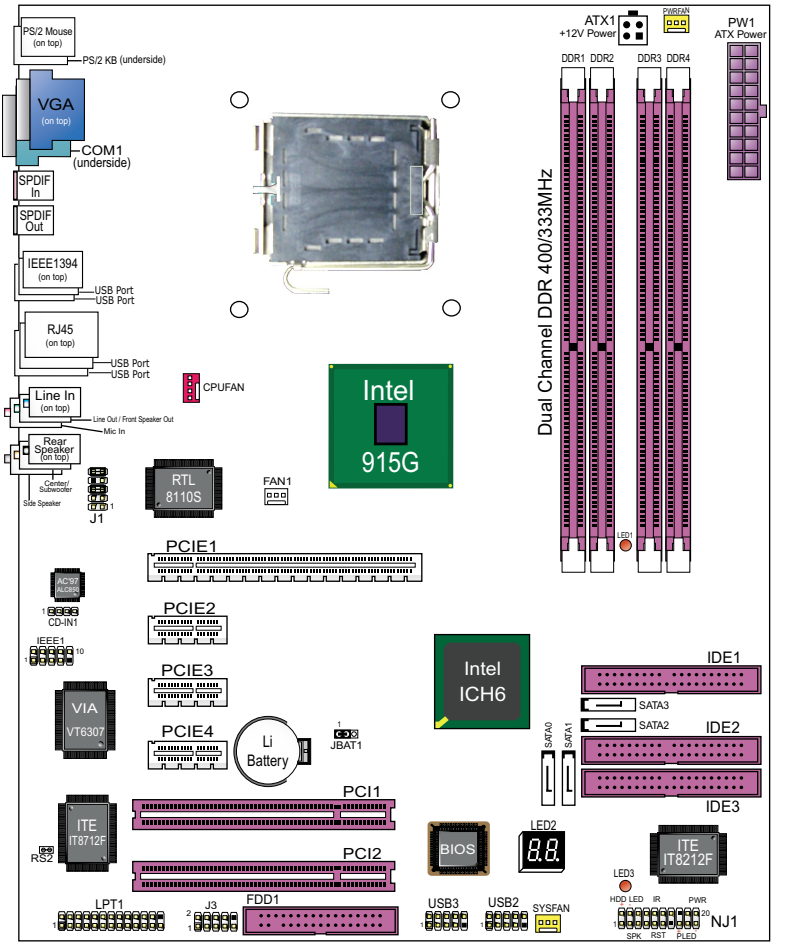
Integrated with Intel915G, South Bridge Intel ICH6 supports the LPC I/O, upstream Hub interface, PCI interface, IDE interface, Serial ATA interface, USB 2.0 interface, AC'97/Asalia Audio interface and the interrupt control. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

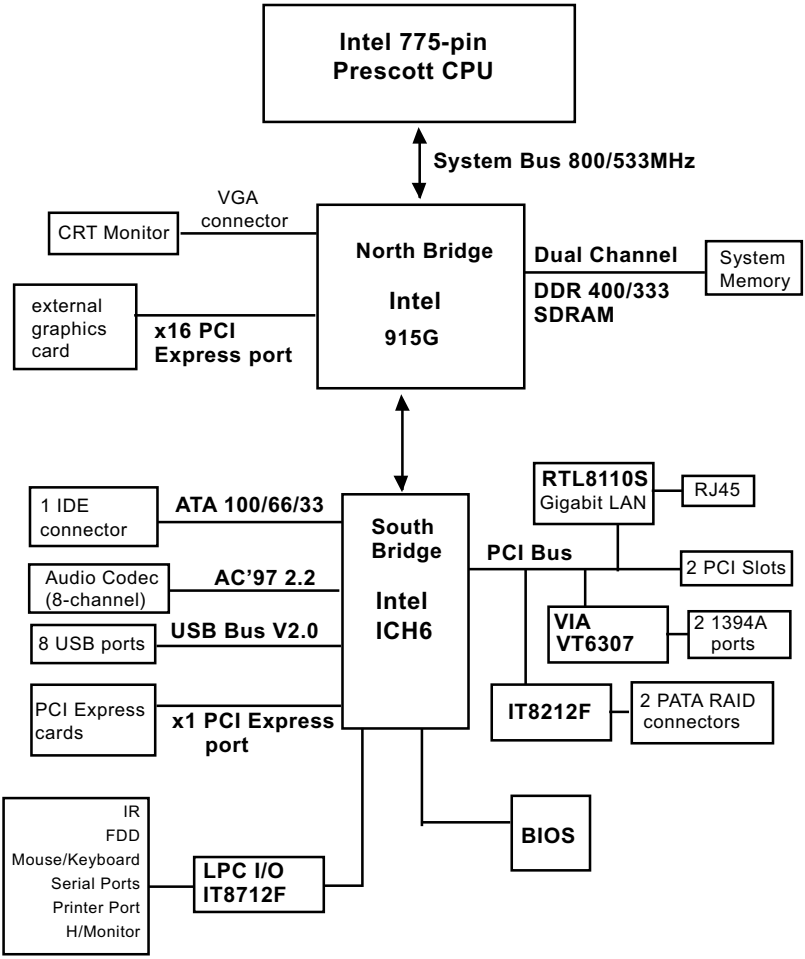
1-1 Mainboard Layout
1-2 Chipset Diagram
1-3 Mainboard Specifications**

**** 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 SL-915GPro-FGR Mainboard Layout



1-2 Chipset System Block Diagram



775-pin Prescott CPU + Intel 915G + Intel ICH6 Diagram

1-3 Mainboard Specifications

1-3.1 CPU Socket

CPU Socket LGA 775 on board, supporting Intel® Pentium 4 775-pin Prescott processors(including Intel Hyper Threading and Prescott CPUs) in 775-pin package for :

-- 800/533MHz System Bus

-- Hyper-pipelined technology -- Advanced dynamic execution;

-- Rapid Execution Engine -- Streaming SIMD Extensions 2

-- 128 Bit Enhanced Floating Point Unit -- Execution Trace Cache

1-3.2 System Chipsets

North Bridge Intel 915G:

- A high performance integrated chipset providing processor interface, Dual channel DDR 400/333 SDRAM memory interface, DMI, VGA interface and X16 PCI Express interface.
- Showing Hyper Threading Logo when booting with a Hyper-threading CPU.

South Bridge Intel ICH6:

- Supporting the LPC I/O, upstream Hub interface, PCI interface (including SATA, IEEE 1394 and GiGabit LAN), IDE interface and USB 2.0 interface, AC'97/Asalia Audio interface , and X1 PCI Express interface.

1-3.3 Memory

4 DDR DIMM 184-pin slots on board :

- Supporting unregistered, non-ECC Dual-channel DDR 400/333 SDRAM up to 4GBs
- DIMMs to be populated in identical pairs for Dual-channel operation
- SPD (Serial Presence Detect) Scheme for DIMM Detection supported

1-3.4 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, Super I/O, 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.)
- Power Management Features
- BIOS Security Features (Supervisor Password, User Password)

1-3.5 x16 PCI Express Interface

x16 PCI Express interface integrated in 915G, supporting:

- a raw bit-rate of 2.5 Gb.s on the data pins, resulting in a real band-width per pair of 250MB/s.
- Enhanced Addressing Machanism
- External Graphics card (not supporting AGP card)

1-3.6 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 Wake On LAN
- Real Time Clock (RTC) with date alarm, month alarm, and century field

1-3.7 Multi-I/O Functions :

- Serial ATA Controller integrated in ICH6, supporting:
  -- 4x Serial ATA connectors supporting up to 150MByte/s transfer rate
- PCI EIDE Controller, supporting:
  -- 1x UATA100/66/33 IDE connectors supporting up to 4 IDE devices
- 3 ports of x1 PCI Express for x1 PCI Express cards
- 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 system (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

1-3.8 Gigabit Ethernet Controller on board

PCI bus single-chip Gigabit Ethernet Controller RTL8110S on board:

- Supporting 10/100/1000Mb data transfer
- Supporting Wake On LAN function through the on-board RJ45 LAN Connector
- LAN Driver enclosed in Support CD for user's installation.

1-3.9 Hardware Monitor on board

- Hardware Monitor supported by VT8712F, 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.

1-3.10 8-channel AC'97 Audio Codec on board

AC'97 Audio Codec Realtek ALC850 on board

- Supporting 8-channel display of PCM audio output
- 8 channel audio consists of Front-Out, Rear-Out, Center-Out, Side-speakers, MIC-In, Line-In, and Front-MIC-In for complete surround sound effect
- SPDIF In/Out connector integrated in Back Panel supported by ALC850 for digital interface format input/out.
- AC'97 Audio Codec Driver enclosed in Support CD for user's installation.

1-3.11 Serial ATA Interface integrated

- 4 SATA connectors supported by ICH6 for 4 SATA Hard Disk setup
- Supports data transfer speed up to 150MB/sec.

1-3.12 IEEE 1394A Interface

- PCI-bus based open host controller, compliant with IEEE 1394a standard for high performance serial bus
- Supporting 400/200/100 Mbits transfer rate
- 2 IEEE 1394A ports supported by IEEE1394A controller VT6307

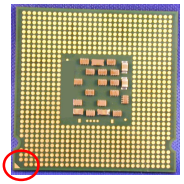
1-3.13 Form Factor

- ATX Form Factor, ATX Power Supply, version 2.03 compliant, supported by one Main Power Connector, one +12V Power Connector.
- Mainboard size: 305mm x 245mm

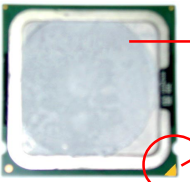
2-1 775-pin Prescott CPU and Socket LGA 775

2-1.1 To Identify a 775-pin Prescott CPU

The pin-pad side of 775 CPU



This yellow triangle denotes Pad 1 of CPU.



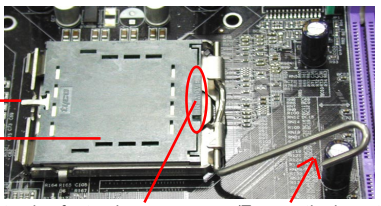
LGA 775 CPU
(with heat glue on surface)

The Heat Glue on surface is for better heat dispersion

The yellow triangle denotes location of Pad 1.

2-1.2 To install 775-pin Prescott CPU into Socket LGA 775

1. LGA 775 socket is safeguarded by a metal cover and a protective cap on top. Never remove the protective cap before CPU has already been installed into socket.



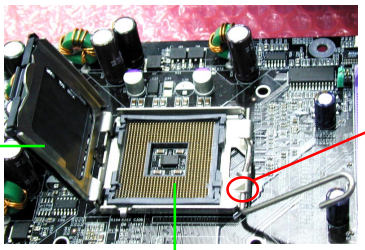
(Press down this tongue to turn up the cover.)

(The protective cap is protecting LGA 775 socket-pins from unnecessary exposure.)

(The Protrusion for turning up the protective cover and cap.)

(Turn up the lever this way to unlock the metal cover.)

2. Pull sideway the socket lever and turn it up so as to unlock the metal cover from the socket base.
3. Since the metal cover together with the cap is unlocked from the socket base now, use a fingertip to pull at the protrusion at one end of cap so as to turn the cover and cap up.
4. The cover and the cap are turned open now, revealing the socket-pins. We should be aware that the pins are so delicate they are forbidden to be touched with anything other than a 775-pin CPU.

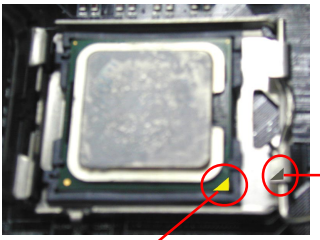


(Turn open the cover and cap this way to reveal the socket pins.)

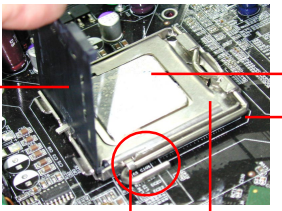
(The triangle here denotes Socket Pin1 location.)

(The socket pins)
Attention: The pins are so delicate that they are forbidden to be touched with anything other than a 775-pin CPU.

5. As soon as the Cover and Cap is lifted up, place down the 775 CPU gently into 775 Socket with Pad1 matching Socket Pin1.

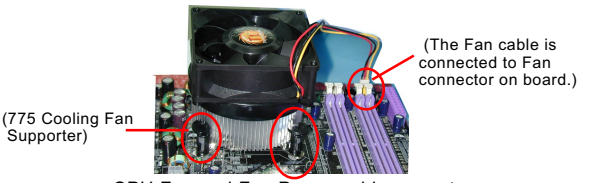


6. When you have made sure the 775-CPU is properly laid down, you should now return the Metal Cover to Socket so as to fix down the CPU.
7. After returning the Metal Cover to Socket, pull back the Socket Lever to Socket until it gets back to the latch.
8. Since the Metal Cover is returned to Socket, use a fingertip to lift and remove the protective Cap for the Cooling Fan installation.



9. CPU is installed, Metal cover fixed to socket, Protective Cap removed, we should install CPU Cooling Fan now.

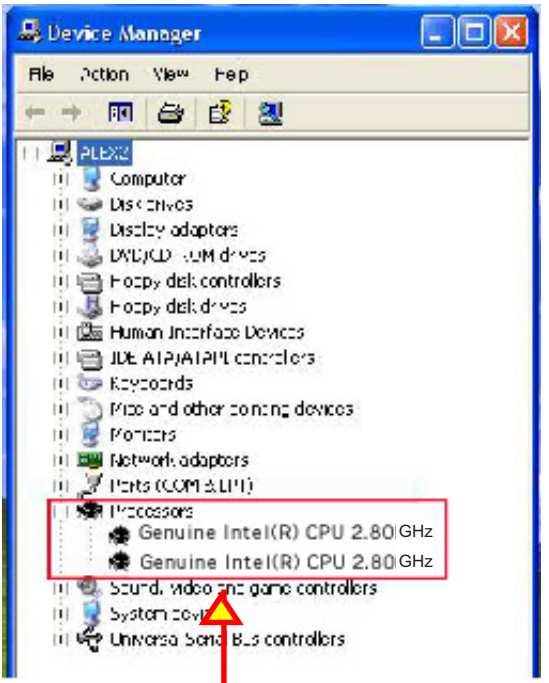
10. Insert the 4 Fan Supporters into the Support Holes on board, and then connect the Fan Power cable to the Fan Connector on board.



CPU Fan and Fan Power cable are set up.

2-1.3 775-Prescott CPU Installation with Hyper-threading

- 775-Prescott CPU also supports hyper-threading technology.
- After installation of 775-Prescott CPU, you should also install Windows XP to enable Hyper-threading dual-in-one CPU function. Win98/Me/2K do not support Hyper-threading dual-in-one CPU function.



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

2-2 Memory Installation

2-2.1 To Install DDR SDRAM Module

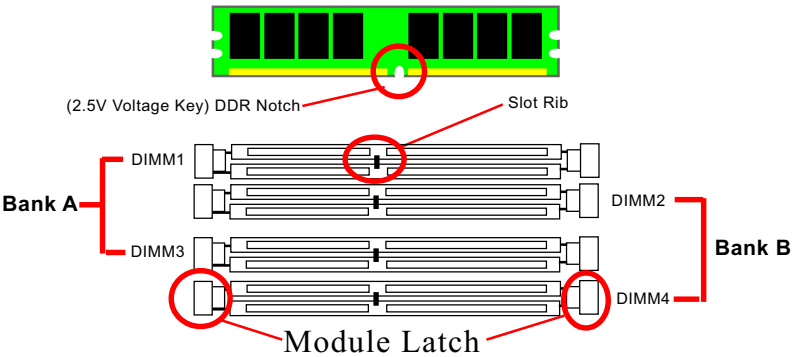
- DDR DIMM slot has 184 pins and one notch. Insert a DDR SDRAM vertically into the 184-pin slot with the notch-to-rib matching.
- This mainboard supports up to 4GB unbuffered Dual-channel DDR 400/333 SDRAM, with 4 DDR DIMM slots on board. Do not insert other type of modules into these slots.

2-2.2 Dual Channel Memory Features

- Dual Channel Memory Configuration is formed by couple of identical DDR SDRAMs.
- 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 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..

2-2.3 To Remove a DIMM

Power off the system first, and then press down the holding latches on both sides of slot to release the module from the DIMM slot.



To Boot PC with Dual Channel Memory Configuration

Populate Bank A / Bank B / Bank A+Bank B with identical DIMMs

To Boot PC with Single Channel Memory Configuration

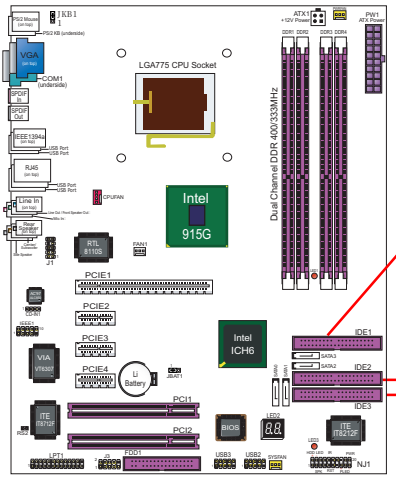
To Populate one DIMM or two DIMMs in 2 different Banks will boot PC with single-channel memory configuration.

2-3 IDEand IDE RAID Connectors Installation

To install IDE Connector, you may connect the blue connector of IDE cable toIDE1 on board, and then connect the gray connect to your slave device and the black connector to your master device.

To install IDE RAID Connector, you may connect the blue connector of IDE cable to the primary (IDE2) or secondary (IDE3) 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.

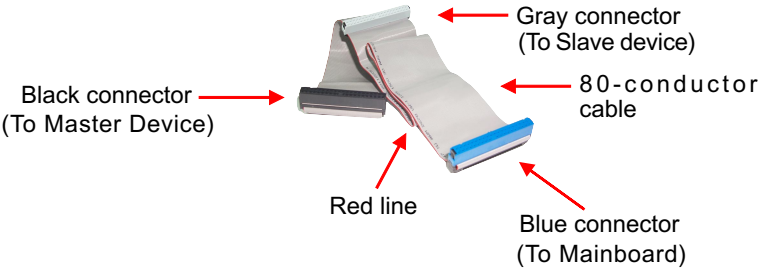
Attention: On this Mainboard, only are IDE2 and IDE3 supported by VT8212F to set up totally 4 RAID hard Disks.



IDE1

Hard Disk Drive Connector
Orient the red line on the IDE Flat Cable to Pin1.

IDE2/3
PATA 133 Connector
Supported by IT8212F for 4 Parallel ATA RAID IDE Hard Disks Setup.

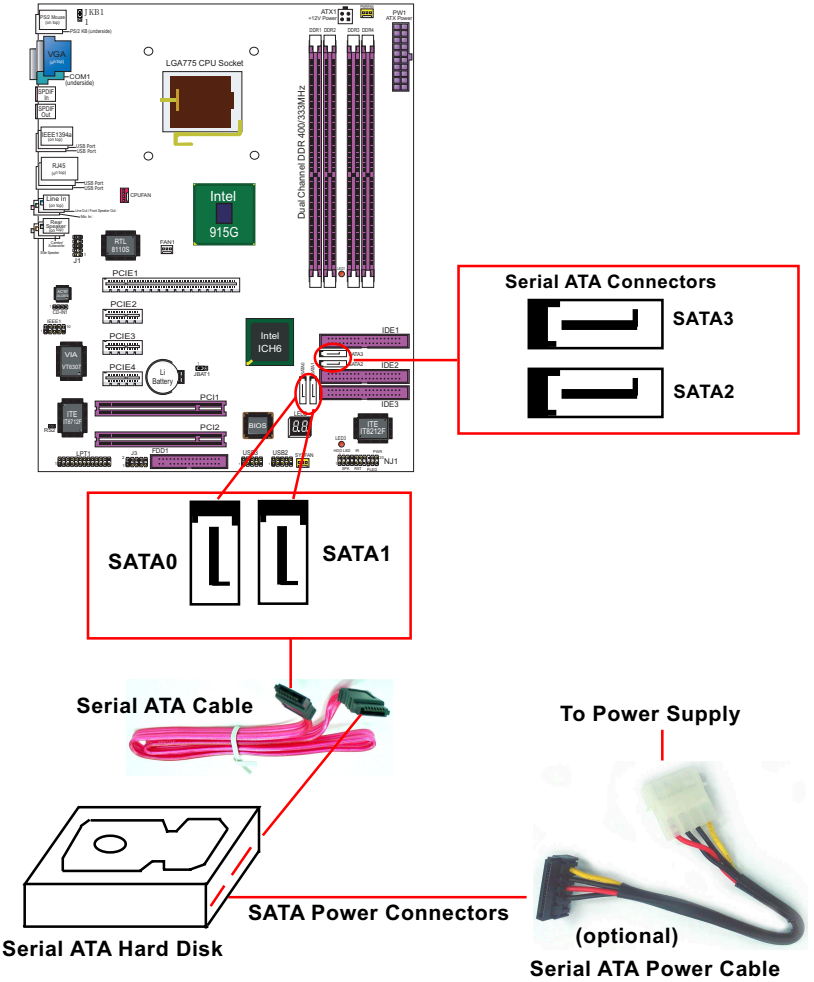


IDE Flat Cable

2-4 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 ventilaton of PC cases.
4 Serial ATA connectors are built on board, supported by the ICH6 for SATA Hard Disk Drives.

(1) How to set up SATA connectors and cables



(2) How to set up SATA modes

To set up SATA modes, please enter BIOS Setup and click on “IDE Configuration of the Main Menu “Advanced BIOS Features. Then configure SATA as illustrated in the IDE Configuration:

ATA/IDE Configuration

Allows you to configurare IDE device mode.
Choices: Disabled; Compatible; Enhanced

Disabled: If disabled, no Primary/Secondary IDE mode will be presented for configuration.

Compatible: If Compatible selected, Legacy IDE Channels will be presented for configuration.

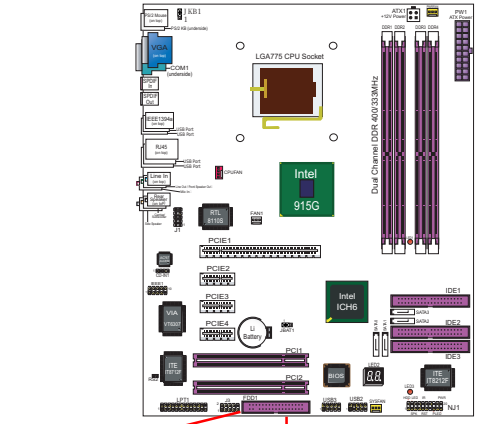
Legacy IDE Channels:

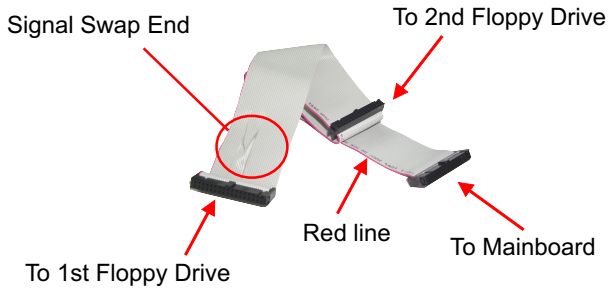
This item allows you to select the onboard IDE mode.
Choices: SATA only: Pri IDE Master SATA0
Pri IDE Slave SATA2
Sec IDE Master SATA1
Sec IDE Slave SATA3
PATA Pri, SATA Secondary:
PATA Master
PATA Slave
SATA Master (SATAS1)
SATA Slave (SATA3)
SATA Pri. PATA Secondary:
SATA Master (SATA0)
SATA Slave (SATA2)
PATA MASTER
PATA SLAVE
PATA only: No SATA can be set up.

Enhanced: If Enhanced selected, Configure SATA as mode will be presented for configuration.

2-5 Floppy Drive Connector Installation

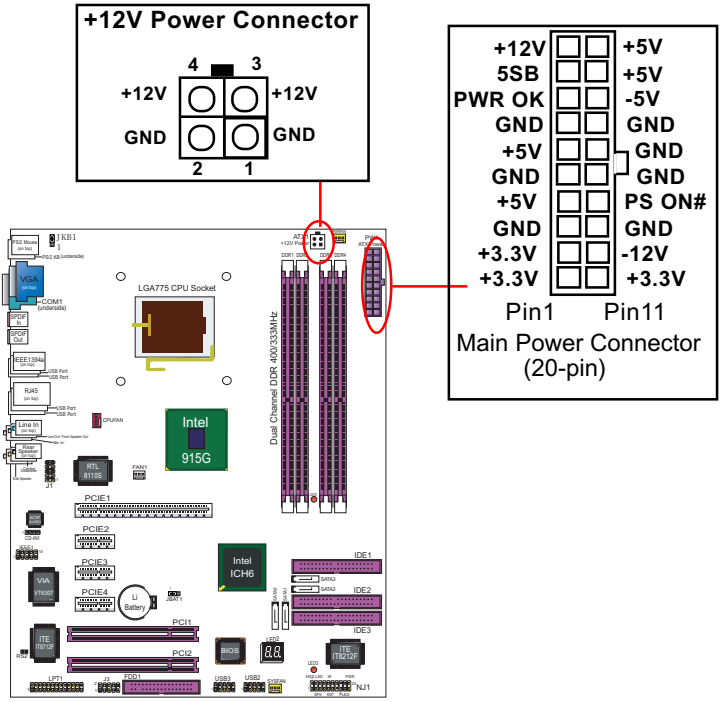
To install FDC, you should connect the end of FDC cable with single connector to the board, and connect the other end with two connectors to the floppy drives.





FDD Cable

2-6 ATX V2.03 Power Supply Installation



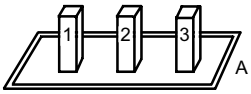
ATX V2.03 Power Supply is strongly recommended for mainboard running with 2GHz or higher CPU.

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 damaged.
2. This ATX Power Supply should be able to provide at least 720mA/ +5V standby power for Wake On Lan function.

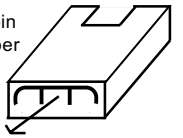
2-7 Jumper Setting : How to set up jumper

How to tackle the Jumpers:



A 3-pin Jumper

If a pin-header (of 2 or more pins) is designed in such a way that its pins can be closed or linked together to set up a specific function, this header is called a jumper in this manual.



The conductor inside the cap links two header-pins together.

- 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.

Jp X

Jumper with Pin 2-3 closed

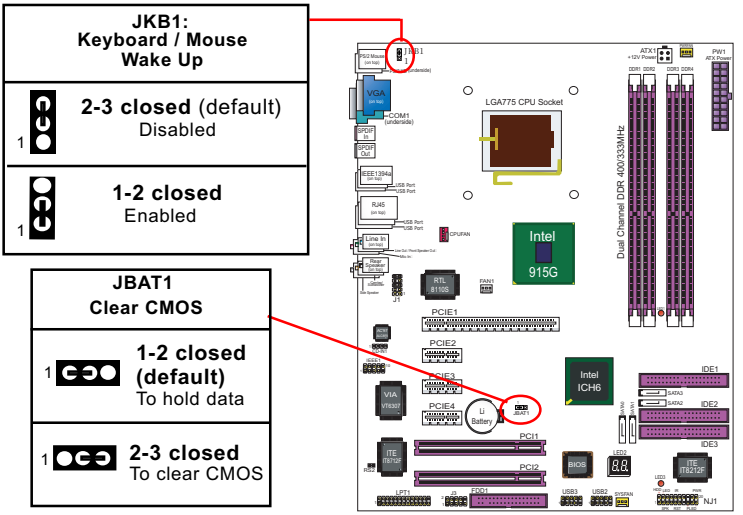
Jumper with all pins opened

Jumper with Pin 1-2 closed

- 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.

2-7.1 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.



2-7.2 JBAT1: Clear CMOS

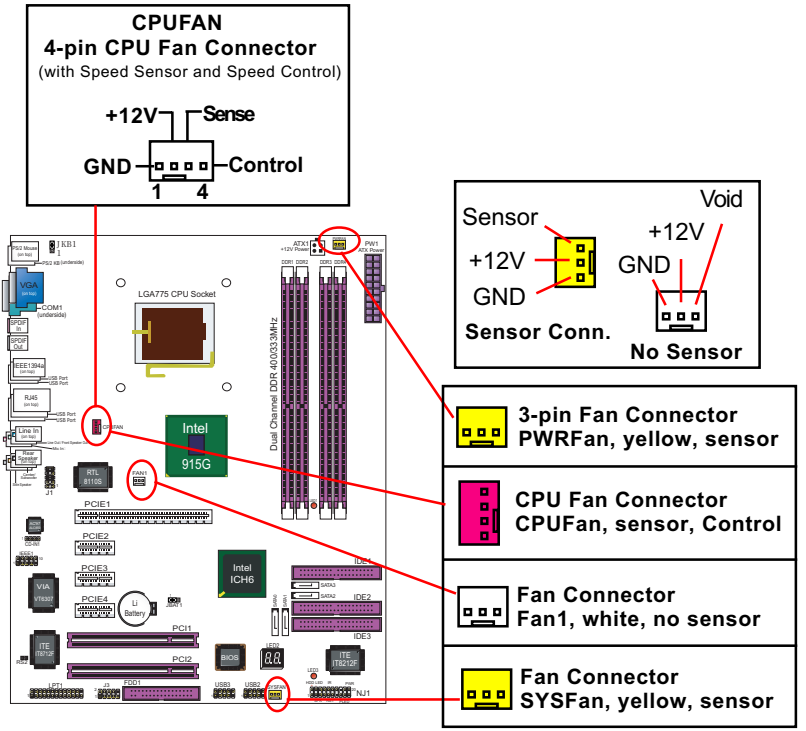
When you have problem with rebooting your system, you can clear CMOS data and restore it to default value. To clear CMOS with Jumper JBAT1, please follow the steps below:

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.

2-8 Other Connectors Configuration

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

2-8.1 On Board Fan Connectors



CPUFAN is a 4-pin speed sensor and speed control Fan connector supporting speed detection and speed control. CPUFAN is typically for CPU cooling fan.

PWRFAN / SYSFAN is a sensor Fan connector supporting Fan speed detection function.

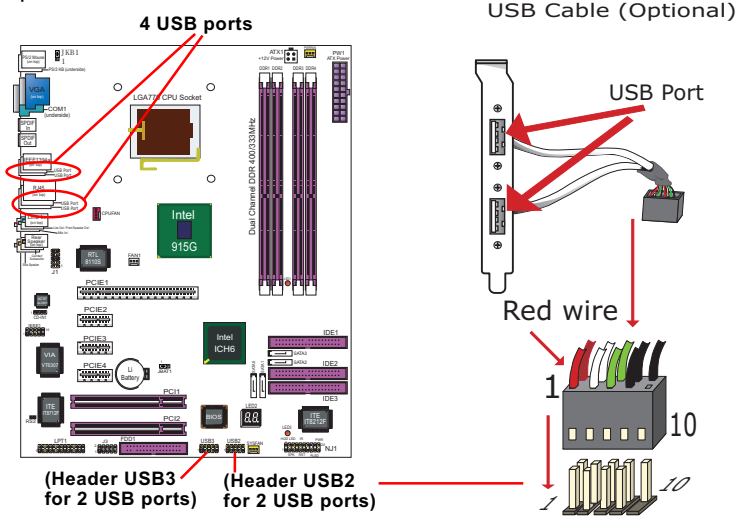
Fan1 is a non-sensor Fan connector for cooling down temperature only.

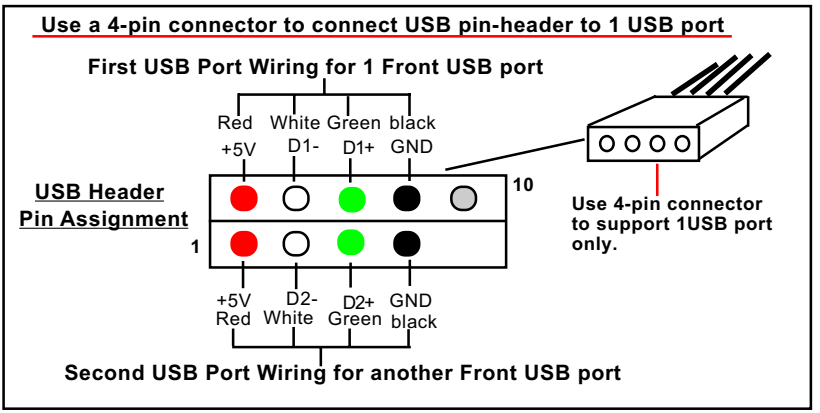
2-8.2 USB Ports and USB Pin-headers

This series provides four USB ports on board supporting various USB devices. In addition, two USB pin-headers are added on board to provide expansion of four more optional USB ports by using two additional USB cables. Users can order the optional USB cables from your mainboard dealer or vendor.

When plugging the USB cable to USB Header, users must make sure the red wire is connected to Pin 1.

All 8 USB ports are compliant with 1.1 / 2.0 USB Bus. USB 2.0 supports Windows 2000 and up (no support for Windows 9X/ME). Please see Chapter 3 for USB2.0 Installation.

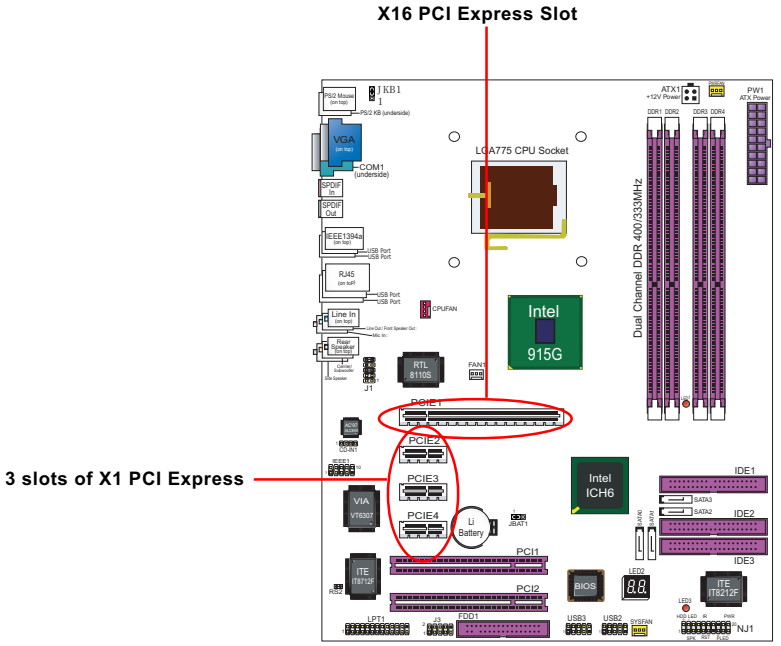




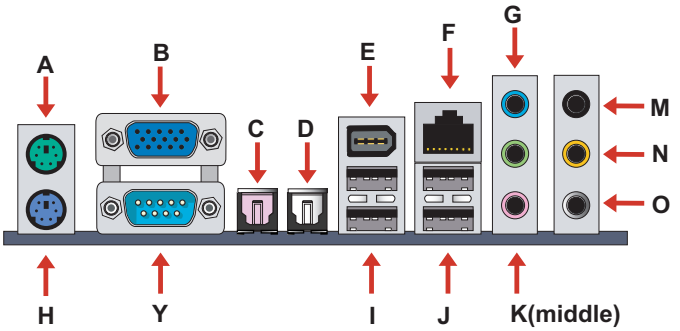
2-8.3 PCI Express Slot Installation

1) X16 PCI Express Slot is provided on board for Graphics Attach, supporting a raw bit-rate of 2.5Gb/s on the data pins. It does not support AGP 1X/2X/4X/8X card

2) 3 slots of x1 PCI Express is supported by ICH6, compliant with PCI Express Base Specification, Revision 1.0a for PCI Express cards.



2-8.4 Chassis Back Panel Connectors

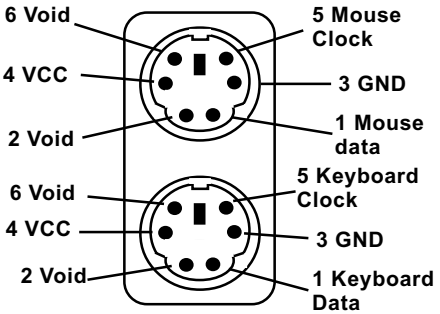


A : PS/2 Mouse
B : VGA Connector
C : S/PDIF In
D : S/PDIF Out
E : 1394A port
F : RJ45 Connector
G : Line In
H : PS/2 Keyboard
Y : COM1

I : 2 USB ports
J : 2 USB ports
K : Line out/Front Speaker Out
L : Microphone In
M : Rear Speaker Out
N : Center/Subwoofer Out
O : Side Speaker Out

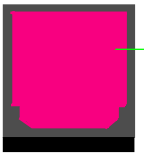
2-8.5 PS/2 Mouse , PS/2 Keyboard, SPDIF In/Out connector

A - PS/2 Mouse Connector (green, on top)



H - PS/2 Keyboard Connector (purple, underside)

SPDIF- in/out port for Digital Interface Format Input / Output



C - C is SPDIF-In port with pale purple Protective Swing Plate.

D - D is SPDIF-Out port with a gray Protective Swing Plate.

Connect C / D to digital audio device for digital audio signal input / output.

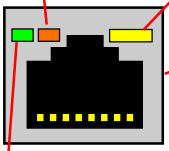
2-8.6 RJ45 Connector

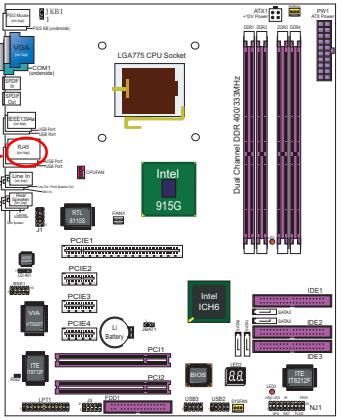
One RJ45 connector is on board for LAN connection, supporting 10/100/1000Mb data transfer.

Orange LED blinks to indicate that data transmission is undergoing in 1000 Base T mode.

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

F: RJ45

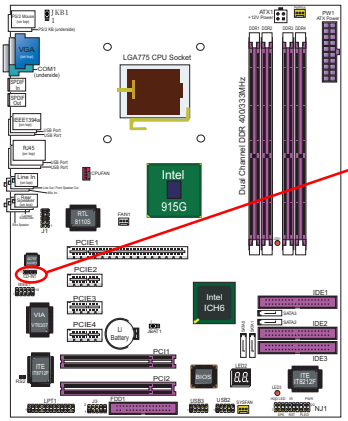




Green LED blinks to indicate that data transmission is undergoing in 10/100 Base T mode.

2-8.7 CD-ROM Audio Connectors (CD_IN1)

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



CD-ROM Audio Connector	
CD-IN1 1 ●●●■	Pin Signal
Pin 1	Left Channel
Pin 2	GND
Pin 3	GND
Pin 4	Right Channel

2-8.8 External Audio Connector

This Mainboard is designed with an External Audio connector J1 which provides connection to your chassis.

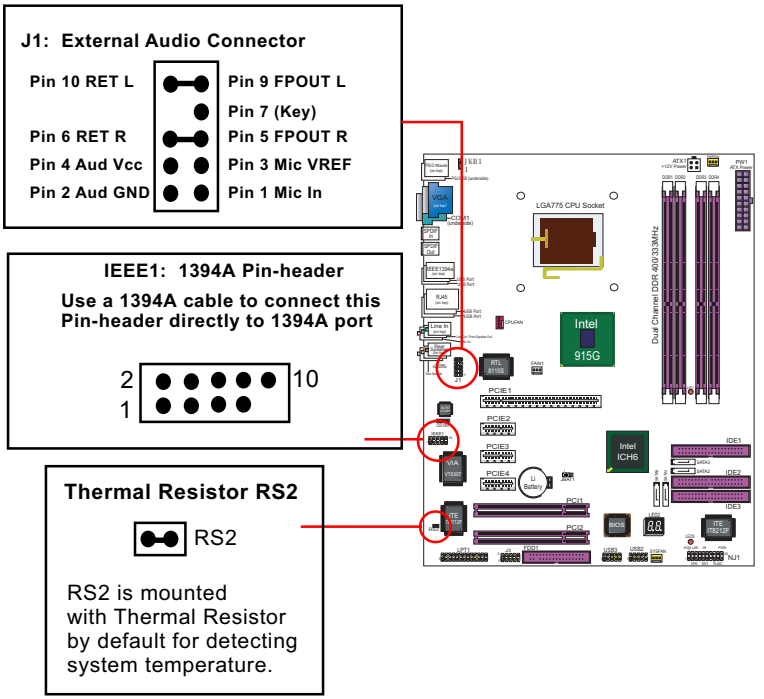
1. When J1 is set to 5-6 closed and 9-10 closed, this default setting disables this connector and leaves the Back Panel Audio enabled.
2. To use this Front Panel Audio Connector, please open all pins of J1 and connect it to your chassis.

2-8.9 1394A Connector

- 2 IEEE 1394A ports supported by IEEE1394A controller VT6307
- Supporting 400/200/100 Mbits transfer rate.
- PCI-bus based open host controller, compliant with IEEE 1394a-2000 standard for high performance serial bus

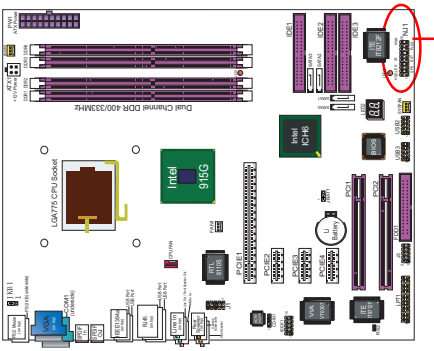
2-8.10 Thermal Detector

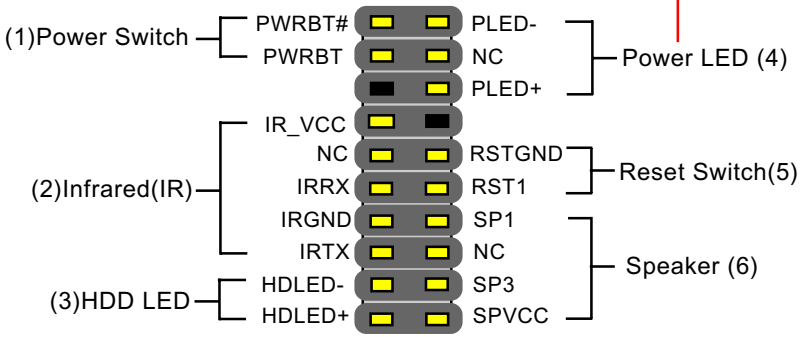
RS2 is mounted with Thermal Resistor by default for detecting system temperature.



2-8.11 Complex Pin-header (Front Panel Connectors)

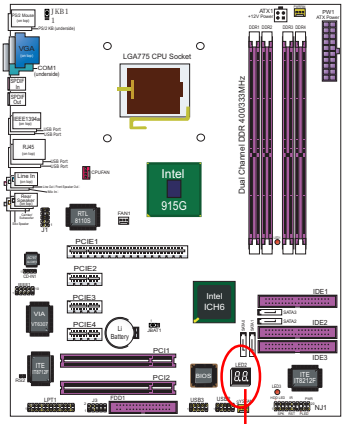
This complex Pin-header consists of the following connectors for various supports. When you have fixed the mainboard to the case, join the connectors of this Complex Pin-header to the case Front Panel.





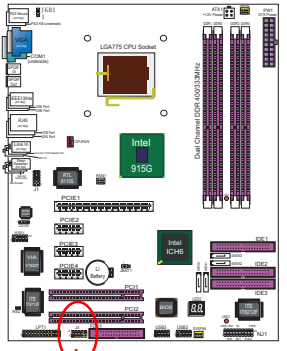
2-8.12 LED2: Debug LED

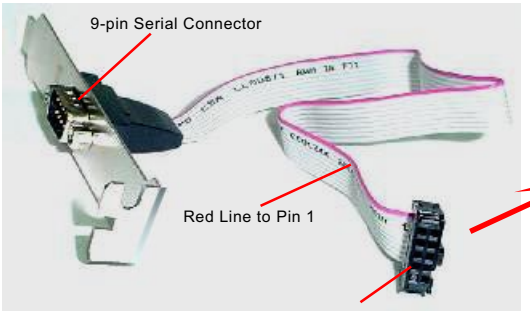
A Debug LED is built in on board to display various digital messages which stand for the running status of the mainboard. The CheckPoint and Beep Code List is enclosed in Appendices of this manual. Please refer to the tables in Appendix describing the type of checkpoints for more information.



2-8.13 J3: COM 2 Header for one Serial Port

J3 is aCOM 2 Header built on board, which requires a serial COM 2 cable to provide a 9-pin serial connector for a serial device. One RS232 COM 2 Cable is enclosed in this mainboard package. When you insert RS232 cable to J3, take notice that the red line of the cable must connect to Pin 1 of J3





J3:COM 2 Header

2
1
9

COM 2 Cable (RS232) (optional)

Chapter 3 Software Setup

Drivers, Utilities and Software Installation

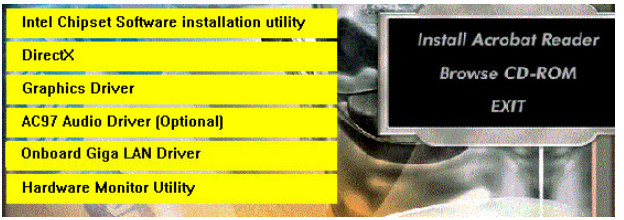
• Support CD:
This series of mainboards will be shipped with a Support CD which contains those necessary driver files, Application Softwares and some helpful utilities. It is a user-friendly, auto-run CD which will open itself up in a CD-ROM automatically.

This chapter is introduce the installations of all these essential drivers and utilities on Windows 9X, Windows ME, Windows 2000 and Windows XP. And installation on Windows 2K is taken as the general illustration hereby.

3-1 To Open up the Support CD 35
3-2 Intel Chipset Software Installation Utility 36
3-3 DirectX Installation (for Win98se/Me) 37
3-4 Graphics Driver Installation 38
3-5 AC'97 Audio Driver Installation 39
3-5.1 Installing AC'97 8-channel Audio Driver 39
3-5.2 Verifying 6-channel Audio 40
3-6 To Install RTL8110S Gigabit Ethernet Drivers 42
3-7 To Install Hardware Monitor Utility 43
3-7.1 Installation 43
3-7.2 Verification 44
3-8 To Install USB 2.0 Driver for Windows 2000/XP 45

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:

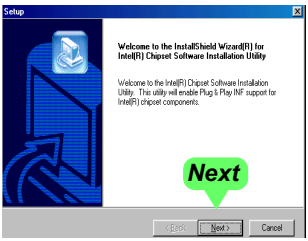
   D:\ Autorun.exe (assuming that your CD-ROM Drive is Drive D)

3. Drivers will be updated from time to time in our web site. If you are installing a newer driver than the one illustrated in this chapter, please be aware that the illustration pictures might be different.

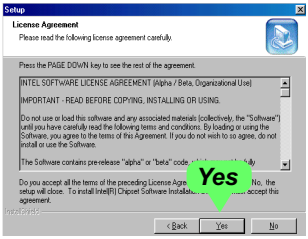
3-2 Intel Chipset Software Installation Utility

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

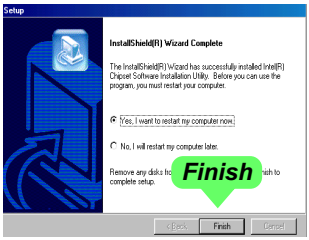
2. The Intel Service Pack InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press **"Next"** button to continue.



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



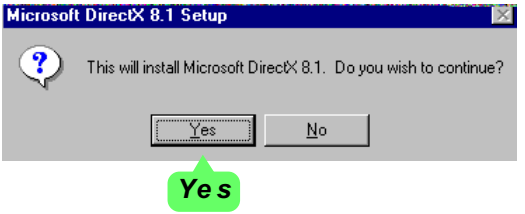
4. After all the setup process is finished, please restart your computer by clicking on "Finish" so as to take the Utility into effect.



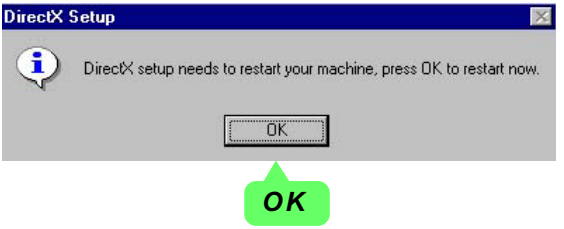
3-3 DirectX Installation (for Win98se/Me)

Following the installation of INF, you have to restart system so that your system can be reconfigured with the driver just installed. When restarting procedures finish, please open the Support CD with your CD-ROM to enter the Main Installation Menu.
Then click to “Install DirectX”. This utility will support a better graphic display of the built-in VGA interface. Please note that DirectX installation is neededfor Windows 98SE/ME only, because WinXP/2K is already incorporated with DirectX.

1. When the screen of “Microsoft DirectX 8.X Setup” appears, please press “Yes” button to continue.



2. After all the setup procedures have completed, click to “OK” button to exit the Installation program and re-start your system.

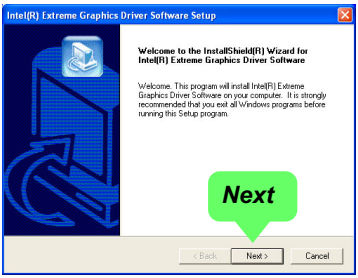


3-4 Graphics Driver Installation

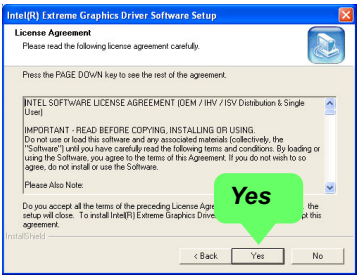
Please open the Support CD with your CD-ROM to enter the Main Installation Menu.

1. For installation of on-board VGA driver, you must first connect the monitor to the on-board VGA connector. Then click to “Install Graphics Driver”. The Graphics Driver is specifically for on-board VGA.

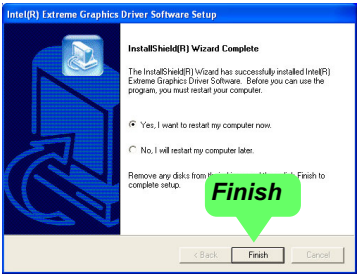
2. When the screen of “Intel(R) Extreme Graphics Driver Software Setup” appears, please press “Next” button to continue.



3.On the “Licence Agreement” screen, click on “Yes” to continue.



3. After all the setup procedures have completed, click to “Finish” button to exit the Installation program and restart your system.



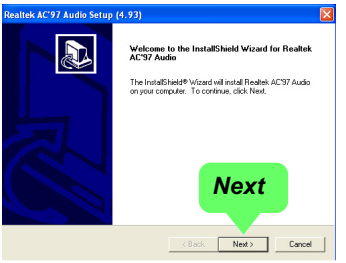
3-5 AC'97 Audio Driver Installation

RTL ALC850 8-channel AC97 Audio Codec on board, AC'97 2.3 compatible stereo audio code for PC multimedia systems. AC'97 Audio Codec Driver is provided in Support CD for user's installation.

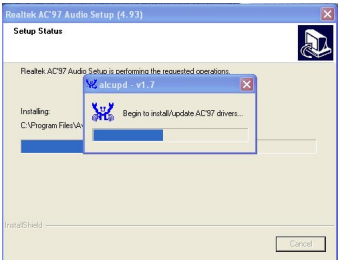
3-5.1 Installing AC'97 8-channel Audio Driver

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

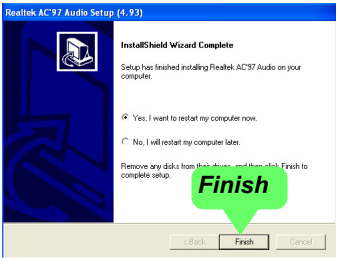
2. Instantly, the "installShield Wizard" screen appears to guide you through the "AC'97 Audio Setup"".



3. instantly, the Setup program proceeds to install the softwares. (If you want to stop setup, click the "Cancel" button.)



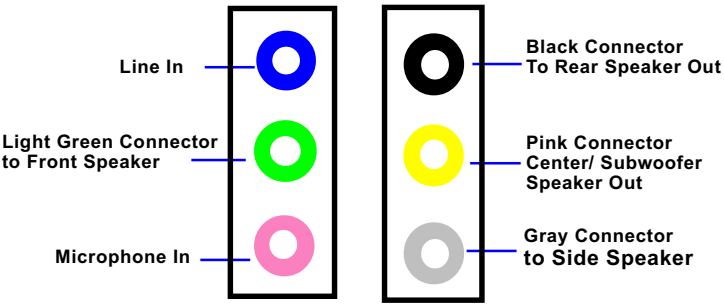
4. After the setup process is finished, please check the radial button "Yes, I want to restart my computer now." And click "Finish" to restart your system.



3-5.2 Verifying 6-channel Audio

After installation of AC'97 8-channel Codec, you must configure the 7.1 Speaker connection to enable the 8-channel audio.

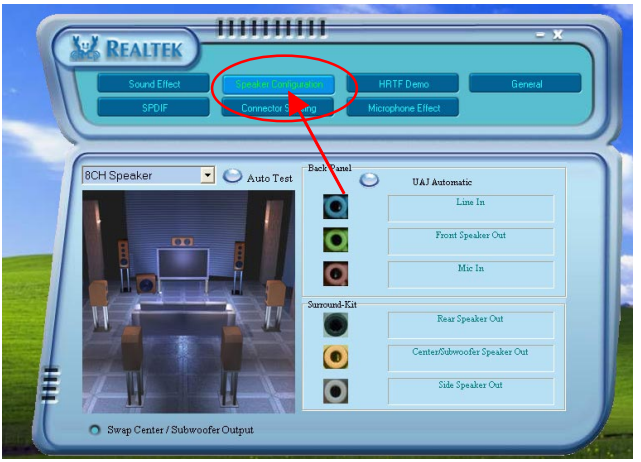
1. Connect your on-board Audio Connectors to your 8-channel speakers as depicted in the figure below:



Back Panel Audio Connectors

2. After Connection is done, start your Windows system and double click the Sound manager icon to enter 8-channel configuration:

3. The AC'97 Audio Configuration" screen will pop out. Clikc the "Speaker Configuration" bar with your mouse.

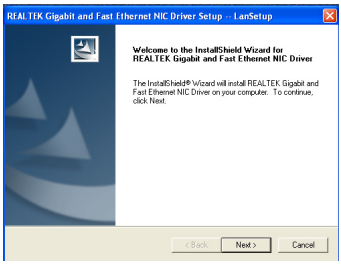


4. Instantly, the "Speaker Configuration" screen will pop out. Pick the items "8-channelSpeaker" and then click on the Auto Test button. Instantly, the Speaker Auto-test starts until all speakers installed are tested.

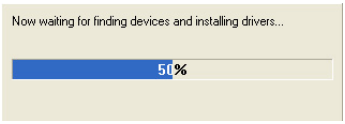
3-6 To Install RTL8110S Gigabit Ethernet Drivers

RTL8110S Gigabit LAN driver for Windows 98/ME / 2000 / XP. After restarting system, click on the Onboard Giga LAN Driver to start setup.

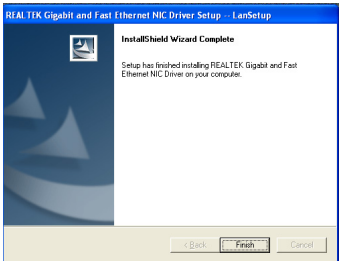
1. Instantly, the InstallShield Wizard pop out. Click Next to continue.



2. Next, the program starts to copy files.



3. In a few seconds, setup completes. Restart system and complete setup.



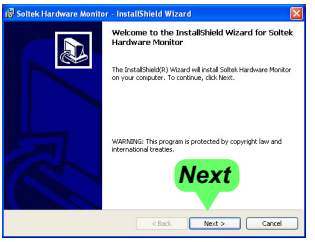
3-7 To Install Hardware Monitor Utility

3-7.1 Installation

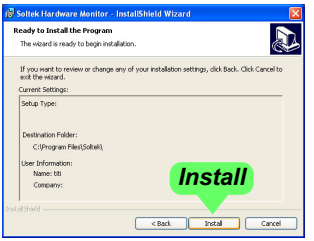
Hardware Monitor is built on this mainboard. Its installation is programmed to a fully automated mode on Windows 9X/Me/NT4/2000/XP. Users can follow the model installation below for its installation on various Windows System.

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

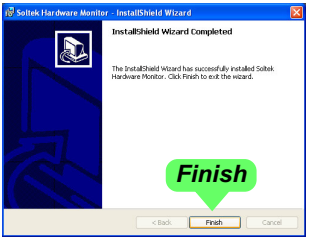
2. The Soltek Hardware Monitor InstallShield Wizard will pop up to guide you to the Intel Service pack installation. Press **"Next"** button to continue.



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

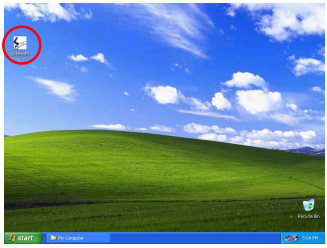


4. After all the setup process is finished, click "Finish" to exit the wizard.

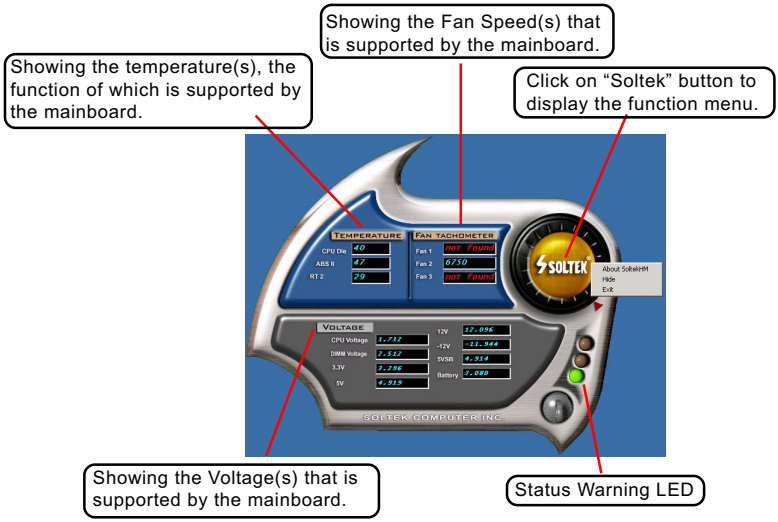


3-7.2 Verification

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.



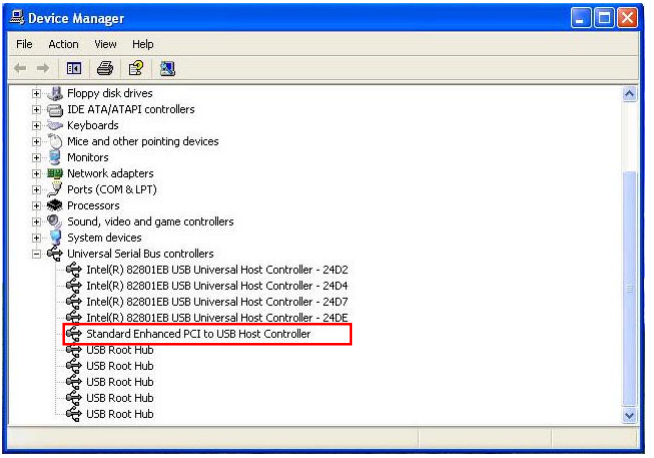
*Note: Not all items or functions showing in the above picture will show up. Only those items or functions that are supported by the mainboard will reveal themselves in the above screen.

3-8 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 archieving 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.



Chapter 4 AMI BIOS Setup

THE BIOS

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 47
4-2 To Run BIOS Setup 47
4-3 About CMOS 47
4-4 The POST (Power On Self Test) 47
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4-6.11 Save Changes and Exit 79
4-6.12 Discard Changes and Exit 79

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 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 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 (PowerOn SelfTest)

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.

- 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.

• 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. Please note that there should be a space between **amiflash** and ***.ROM**. (*.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 <Del> or <F1> to run CMOS setup utility, then reload "Load Failsafe Defaults" or **"Load Optimal Defaults"** and save this change.

4-6 BIOS SETUP --- CMOS Setup Utility

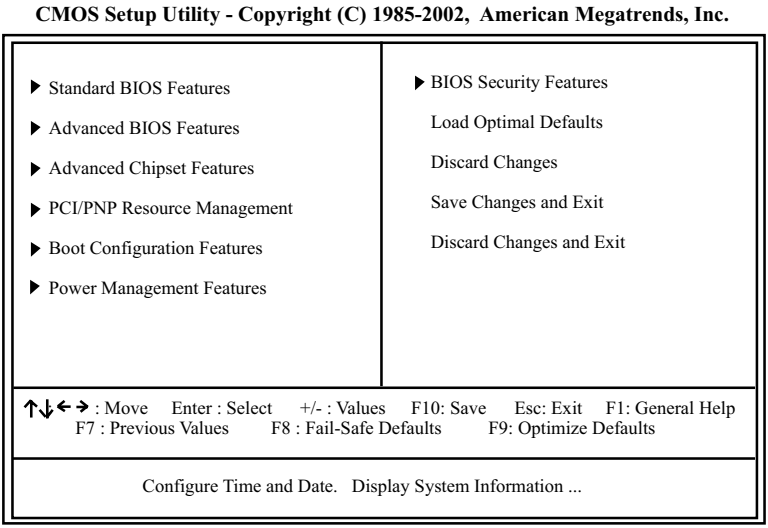
4-6.1 CMOS Setup Utility

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 <Del> TO RUN SETUP

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



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.

6. In entering the Main option of the Main Menu, please use the functions in the Function List to configure the setting:

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

Use [Enter], [Tab] or [Shift-Tab] to select a field.
Use [+] or [-] to choose the 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” alows user to load Optimal Defaults or not.

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

4-6.2 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:
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 : 12/03/03 ID : 1ABRQ011 **Processor** Type : Intel(R) Pentium(R) 4 CPU 1500MHz Speed : 1500MHz Count : 1 **System Memory** Size : 256MB **System Time** **00 : 19 : 29** **System Date** **Thu 12/04/2003**	Use [Enter], [Tab] or [Shift-Tab] to select a field. Use [+] or [-] to configure system Time.

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

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 Advanced BIOS Features

Advanced BIOS Features allows user to configure HDD, Floppy, Serial Port, Parallel Port etc....
Run the Advanced BIOS Features as follows:

Choose “Advanced BIOS 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.
Advanced BIOS Features

Advanced Settings		**Help Item**
Warning: Setting wrong values in below sections may cause system to malfunction.		
▶ CPU Configuration	Press Enter	
▶ IDE Configuration	Press Enter	
▶ Floppy Configuration	Press Enter	
▶ SuperIO Configuration	Press Enter	
▶ Hardware Health Configuration	Press Enter	
▶ ACPI Configuration	Press Enter	
▶ Event Log Configuration	Press Enter	
▶ PCI Express Configuration	Press Enter	
▶ USB Configuration	Press Enter	
▶ Voltage Control	Press Enter	
▶ Soltek Performance Options	Press Enter	
▶ PCI Device Configuration	Press Enter	

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

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 **Module Version - 3C.04**		**Help Item**
Manufacturer : Intel		
Brand String : Intel(R) Pentium (R) 4 CPU 1500MHz		
Frequency : 1500MHz		
FSB Speed : 400MHz		
Cache L1 :16KB		
Cache L2 :1024KB		
Ratio Status:	Locked	
Ratio Actual Value	14	
Ratio CMOS Setting	14	
Max CPUID Value Limit	Disabled	
Hardware Prefetcher	Enabled	
Adjacent Cache Line Prefetch	Enabled	
Hyper Threading Technology	Enabled	

Module Version
BIOS shows the current Module Version.

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.

FSB Speed
BIOS shows the current Front Side Bus of the on-board CPU.

Cache L1/L2
BIOS shows the actual CPU internal Level 1/2/3 cache size.

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.

Max CPUID Value Limit
To enable/disable the Max CPU ID Value Limit.

Hardware Prefetcher
To enable/disable the hardware prefetcher.

Adjacent Cache Line Prefetch
To enable/disable the Adjacent Cache Line Prefetch.

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**
ATA/IDE Configuration	Enhanced	
Configure SATA as	IDE	
▶ 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	
▶ Third IDE Slave	Not Detected	
Hard Disk Write Protect	Disabled	
IDE Detect Time Out (Sec)	35	
ATA(PI) 80Pin Cable Detection	Host & Device	

4-6.3.2-1 IDE Configuration

ATA/IDE Configuration
Allows you to configurare IDE device mode.
Choices: Disabled; Compatible; Enhanced

Disabled: If disabled, no Primary/Secondary IDE mode will be presented for configuration.

Compatible: If Compatible selected, Legacy IDE Channels will be presented for configuration.

Legacy IDE Channels:
This item allows you to select the onboard IDE mode.
Choices: SATA only: Pri IDE Master SATA0
Pri IDE Slave SATA2
Sec IDE Master SATA1
Sec IDE Slave SATA3
PATA Pri, SATA Secondary:
PATA Master
PATA Slave
SATA Master (SATAS1)
SATA Slave (SATA3)
SATA Pri. PATA Secondary:
SATA Master (SATA0)
SATA Slave (SATA2)
PATA MASTER
PATA SLAVE
PATA only: No SATA can be set up.

Enhanced: If Enhanced selected, Configure SATA as mode will be presented for configuration.

Configure SATA As:
This item allows you to configure SATA mode
Choices: IDE;
AHCI: If AHCI is chosen, it allows you to enable/disable the Stagger Spinup Support.

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

▶ 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
▶ Third IDE Slave	Not Detected

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	
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 select or disable LBA/Large mode.

Block (Multi-Sector Transfer)

To select or disable Block Mode. The data transfer from and to the device occurs one sector or multiple sectors at a time.

PIO Mode

To select or disable PIO Mode.
Choices: Disabled; 1, 2, 3, 4

DMA Mode

To select DMA Mode.
Choices: Auto; SWDMAn; MWDMAn; UDMAn

S.M.A.R.T

Allows you to enable / disable the Self Monitoring Analysis and Reporting Technology for the hard disk.

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

4-6.3.3 Floppy Configuration

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

Floppy Configuration

Floppy Configuration		Help Item
Floppy A	1.44 MB 3.5 in	Select the type of floppy drive connected to the system.
Floppy B	Disabled	

Floppy A/B

Press Enter on “Floppy A/B” will let you select this field to the types of floppy disk drives installed in your system.

The choices are: 360KB 5.25 in.; 1.2MB, 5.25 in.
720KB, 3.5 in.; 1.44MB, 3.5 in.
2.88MB, 3.5 in.; Disabled

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 ITE8712 Super IO Chipset		Help Item
OnBoard Floppy Controller	Enabled	
Serial Port1 Address	3F8/IRQ4	
Serial Port1 Mode	Normal	
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 Port1/2 Address
Allows you to set the Onboard Serial Port1/2 Address.
Choices: Disabled; 2E8/IRQ3; 3F8/IRQ4; 3E8/IRQ4;

Serial Port 1/2 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

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

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

Hardware Health Configuration

Hardware Health Configuration		Help Item
System Temperature	: 34˚C/93˚F	Enables Hardware Health Monitoring Device.
CPU Temperature	: 45˚C/113˚F	
CPU Fan Speed Control	Automatic Mode	
CPU Fan PWM	2PWM	
CPU Fan Speed	: 3125 RPM	
System Fan2 Speed	: 3169 RPM	
System Fan3 Speed	: N/A	
CPU Voltage	: 1.360 V	
DIMM Voltage	: 2.576 V	
+3.30V	: 3.258 V	
Vcc%	: 5.094V	
+12.0V	: 12.074 V	
Vcc1.5	: 1.504 V	
5VSB	: 5.088 V	
Vbat	: 3.136 V	

System Temperature Shows current system temperature.

CPU Temperature Shows current CPU internal temperature.

CPU Fan Speed Control To select CPU Fan Speed Control mode. Choices: Automatic mode; Silent mode; Enhance mode; maximum mode

CPU Fan PWM To select size of CPU Fan PWM. Choices: 2PWM; 4PWM; 8PWM; 16PWM; 32PWM; 64PWM

CPU Fan /System Fan2/System Fan3 Speed Displaying the current speed of Chassis/CPU/Power Fan.

CPU Voltage/DIMM Voltage Showing CPU / DIMM voltage value.

3.3V/Vcc5/+12V/Vcc1.5 /5VSB/Battery Showing current voltage against the 3.3V/+12V/ Vcc1.5V/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
▶ General ACPI Configuration	Press Enter	
▶ Advanced ACPI Configuration	Press Enter	
▶ Chipset ACPI Configuration	Press Enter	

▸ General ACPI Configuration:

Press< Enter > on General ACPI Configuration to reveal following items.

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)(Optional); Auto

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

▸ Advanced ACPI Configuration:

Press< Enter > on Advanced ACPI Configuration to reveal following.

ACPI 2.0 Features
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.

AMI OEMB table
To include AMI OEBM table pointer to R(X) SDT pointer lists.

Headless mode
To enable / disable Headless operation mode through ACPI.

▸ Chipset ACPI Configuration:

Press< Enter > on Chipset ACPI Configuration to reveal following.

APIC ACPI SCI IRQ
To enable / disable APIC ACPI SCI IRQ.

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

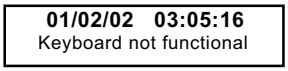
4-6.3.7. Event Log Configuration

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

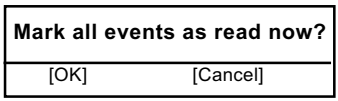
Event Log Configuration

Event Logging details		Help Item
View Event Log	Press Enter	
Mark all events as read	Press Enter	
Clear Event Log	Press Enter	
Event Log Statistics	Press Enter	

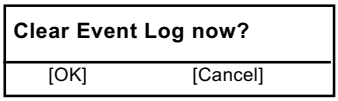
View Event Log
To press Enter to reveal the Event Log. For Example:



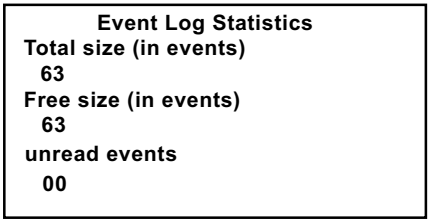
Mark all events as read
Press Enter to mark up all events as read. Example:



Clear Event Log
Press Enter to clear event log.



Event Log Statistics
Press Enter to reveal Event Log Statistics.



4-6.3.8. PCI Express Configuration

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

PCI Express Configuration

PCI Express Configuration		Help Item
Active State Power management	Disabled	

Active State Power Management
To enable / disable Active State Power Management.

4-6.3.9. USB Configuration

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

USB Configuration

USB Configuration		**Help Item**
Module Version - 2.23.2-9.4		Enable USB host controllers.
USB Devices Enabled : None		
USB Function	8 USB Ports	
Legacy USB Support	Enabled	
USB 2.0 Controller	Enabled	
USB 2.0 Controller Mode	HiSpeed	

USB Function
Allows you to set the USB Function on the USB port(s).
Choices: 8 USB Ports; Disabled

Legacy USB Support
Allows you to enable / disable the Legacy USB support.

USB 2.0 Controller
Allows you to enable/ disable the USB 2.0 Controller.

USB 2.0 Controller Mode
Allows you to configure the USB 2.0 Controller Mode.
Choices: FullSpeed; HiSpeed.

4-6.3.10. Voltage Control

Choose “ATXP6 Voltage Control” in “Advanced BIOS Features” and press <Enter>. The following sub-screen will appear for configuration:

Voltage Control

Voltage Configuration		Help Item
Core Voltage Control	1.5V	
DIMM Voltage Control	2.6V	
CPU Voltage Control	Auto	

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

Core 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

4-6.3.11. Soltek Performance Options

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

Soltek Performance Options

Soltek Performance Configuration		Help Item
CPU FSB Selection	Auto	
CPU Linear Frequency	Enabled	
CPU Clock	200MHz	
PCI Express Linear Mode	DIV Mode	
Smart Acceleration Technology	Disabled	

CPU FSB Selection
This item allows you to select CPU Front Side Bus.
Choices: Auto (Auto-selection); 133MHz; 200MHz

CPU Linear Frequency
To enable / disable CPU Linear Frequency adjusment.
Choices: Enabled; Disabled;

CPU Clock
If CPU Linear Frequency is enabled, this item “CPU Clock” will appear to allow you to adjust (with “+/-” key) CPU clock in linear format.
Choices: 200 ~350 MHz in 1MHz stepping

PCI Express Linear Mode
IThis item allows user to select PCI Express operation mode.
Choices: DIV Mode - DIV Mode provides PCI Express speed which equals half of the CPU clock.
Table Mode - Table mode will provide PCI Express speed which is a bit lower than DIV mode but safer and stabler.

Smart Acceleration Technology (optional)
If CPU Linear Frequency is disabled, this item “Smart Acceleration Technology” will appear to allow you to enable the CPU dynamic overclocking. If enabled, a running CPU onboard will dynamically (automatically) adjust its own CPU performance during necessary or appropriate conditions.
Choices: Disabled;
Enhanced Mode;
Performance Mode;
Maximum Mode

4-6.3.12. PCI Device Configuration

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

PCI Device Configuration

PCI Device management Options		Help Item
PCI Auto Detection feature	Enabled	
ClockGen Spread Spectrum	Disabled	
IEEE1394	Enabled	
GiGa LAN	Enabled	
ITE RAID	Enabled	

PCI Auto Detection feature
To enable / disable the PCI auto-detection feature.
Choices: Enabled; Disabled

ClkGen Spread Spectrum
To set the Clock Generation Spread Spectrum.
Choices: Disabled; -0.25%; -0.50%; 0.125%; 0.250%; 0.375%; 0.500%; 0.750%

IEEE1394
To enable / disable the IEEE1394 interface.

Giga LAN
To enable / disable the Gigabit LAN interface.

ITE RAID
To enable / disable the ITE RAID controller.

4-6.4 Advanced Chipset Features

Advanced Chipset Features is used to modify the values of chipset buffers. These buffers control the system options.

Run the Advanced Chipset Features as follows:
Choose “Advanced Chipset Features” from the Main Menu and a list of option will appear:

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

Advanced Chipset Settings		**Help Item**
Warning: Setting wrong values in below sections may cause system to malfunction.		Options for NBEnable USB host controllers.
▶ NorthBridge Configuration	Press Enter	
▶ SouthBridge Configuration	Press Enter	

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

4-6.4.1 NorthBridge Configuration

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

North Bridge Configuration

North Bridge Chipset Configuration		Help Item
DRAM Frequency	Auto	
Configure DRAM Timing by SPD	Enabled	
Memory Hole	Disabled	
Boots Graphic Adapter Priority	PEG/PCI	
Internal Graphics Mode Select	Enabled, 8MB	
Graphics Aperture Size	64MB	
PEG Port Configuration		
PEG Port	Enabled	
PEG Port VC1/Map	Enabled/TC7	
PEG Force x1	Disabled	
Video Function Configuration	Press Enter	
DVMT Mode Select	Combo Mode	
Boot Display Device	Auto	
Flat Panel Type	Type 1	
Local Flat Panel Scaling	Auto	
TV Connector	Auto	
HDTV Output	Auto	
TV Standard	VBIOS-Default	

DRAM Frequency Allows you to set the current SDRAM frequency.
Choices: Auto; 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, the following items will appear for user’s configuration:

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# to CAS# Delay
With SDRAM Timing by SPD disabled, you can select the SDRAM RAS# to CAS# delay cycle manually.
Choices: 2 DRAM Clocks; 3 DRAM Clocks; 4 DRAM Clocks; 5 DRAM 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; 5 Clocks

DRAM RAS# Activate to Prec
Allows you to set the DRAM RAS Activate to Precharge cycle.
Choices: 4 Clocks ~15 Clocks with 1 clock stepping

Memory Hole
Allows you to enable / disable (default) the support of Memory Hole which is reserved for ISA card.
Choices: Disabled; 15MB-16MB

Boots Graphic Adapter Priority
Select which graphics controller to use as the primary boot device.
Choices: IGD; PEG(PCI Express Graphics)/IGD; PEG/PCI; PCI/PEG; PCI/IGD

Internal Graphics Mode Select
Select the amount of system memory used by the Internal Graphics device.
Choices: Disabled; Enabled, 1MB; Enabled, 8MB

Aperture Size Select
To select the Aperture size of the Graphics adapter.
Choices: 256MB; 128MB

PEG(PCI Express Graphics) Port Configuration:

PEG Port
To enable / disable the PEG port.

PEG Port VC1/Map
To select / disable the PEG Port VC1/Map.
Choices: Disabled; Enabled/TC1; Enabled/TC2; Enabled/TC3; Enabled/TC4; Enabled/TC5; Enabled/TC6; Enabled/TC7

PEG Force x1
To enable / disable PEG Force x1

Video Function Configuration: Press Enter to reveal the following items.

DVMT Mode Select
To select the video mode.
Choices: Fixed mode; DVMT mode; Combo mode

Boot Display Device
To select the Boot Display device.
Choices: Auto; CRT on Port0; LFP on Port 2;LFP on Port3;
DFP on Port2; DFP on Port3; TV on Port2; TV on Port3;
CRT-Port 0 & CRT-Port2; CRT-Port 0 & CRT-Port3;
CRT-Port 0 &LFP-Port2; CRT-Port 0 & LFP3;
CRT-Port 0 & DFP-Port2; CRT-Port 0 & DFP-Port3;
DFP-Port2 & DFP-Port3

Flat Panel Type
To select the Flat Panel Type.
Choices: Type 1~ Type 16 (totally 16 types)

Local Flat Panel Scaling
To set the local flat panel scaling
Choices: Auto; Forced Scaling; Disabled

TV Connector
To select the TV connector.
Choices: Auto; Composite; Component; Composite & Component; SCART Composite; SCART Component; SCART Compos & Compon; SCART Compos & Compon RGB; HDTV Serial; HDTV Component; HDTV Component RGB; HDTV PnP HDMI

HDTV Output
To select the HDTV Output mode.
Choices: Auto; 480i60; 480p60; 576i50; 576p50; 720p60; 1080i50 1080i60; 1080p24; 1080p25; 1080p30; 1080p50; 1080p60

TV Standard
To select the TV standard.
Choices: VBIOS-default; NTSC; PAL; SECAM; SMPTE240M; SMPTE260M; SMPTE274M; SMPTE295M; SMPTE296M; SMPTE293M; SMPTE170M; ITURBT601

4-6.4.2 SouthBridge Configuration

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

SouthBridge Configuration

South Bridge Chipset Configuration		Help Item
Audio Codec	Auto	
PRO-NIC Controller	Enabled	
SMBUS Controller	Enabled	
CHAP Controller	Disabled	
Reserved Page Route	LPC	
SLP_S4# Min. Assertion Width	1 to 2 seconds	
Restore on AC Power Loss	Power Off	
PCI-EX Ports Configuration		
PCI Express Port 1	Enabled	
PCI Express Port 2	Enabled	
PCI Express Port 3	Enabled	
VC1 for Azalia & Root Ports	Disabled	

Audio Codec
To select AC’97 Audio Codec.
Choices: All Disabled; Auto

PRO-NIC Controller
To enable / disable PRO-NIC Controller.

SMBUS Controller
To enable / disable SMBUS Controller.

CHAP Controller
To enable / disable the CHAP Controller

Reserved Page Route
To select the reservered Page route.
Choices: PCI; LPC

SLP_S4# Min. Assertion Width
To select the SLP_S4# Min. Assertion Width.
Choices: 4 to 5 seconds; 3 to 4 seconds; 2 to 3 seconds; 1 to 2 seconds

Restore on AC Power Loss
To select the Restore on AC Power Loss mode.
Choices: Power Off; Power On; Last State

PCI EX Ports Configuration:

PCI Express Port 1/2/3/4
To enable / disable the PEG Port 1/2/3/4.

VC1 for Azalia & Root Ports
To enable / disable VC1 for Azalia & Root Ports.

4-6.5 PCI/PNP Resource Management

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

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.		
Clear NVRAM	No	
Plug & Play O/S	No	
PCI Latency Timer	64	
Allocate IRQ to PCI VGA	Yes	
Palette Snooping	Disabled	
PCI IDE BusMaster	Enabled	
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

Clear NVRAM
To select the Clear NVRAM during system boot.
Choices: No; Yes

Plug & Play O/S
Allows you to configure the PNP devices by BIOS or O/S.
Choices: No; Yes

PCI Latency Timer (PCI Clocks)
Allows you to set the PCI Latency Time.
Choices: 32; 64; 96;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; 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;

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 Features

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

Choose "Boot Configuration 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 Configuration Setup

Boot Settings		Help Item
▶Boot Setting Configuration	Press Enter	Configure Settings during System Boot.
▶Boot Device Priority	Press Enter	
▶Removable Drives	Press Enter	

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

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	Enabled	
Quiet Boot	Disabled	
AddOn ROM Display Mode	Force BIOS	
Bootup Num-Lock	On	
PS/2 Mouse Support	Auto	
Wait For ‘F1’ If Error	Enabled	
Hit ‘DEL’ Message Display	Enabled	
Interrupt 19 Capture	Disabled	

Quick Boot
Allows you to enable (default)/ disable quick boot of your system. If enabled, BIOS will skip certain tests whle 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” 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.
Choices: Force BIOS; Keep Current

Bootup Num-lock
Allows you to toggle between On 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	
2nd Boot Device	PM-WDC WD400BB-00	

1st/2nd 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

4-6.6.3 Removable Drives

Choose “Boot Device Priority” in “Boot Configuration Setup” and press <Enter>.

Removable Drives

Removable Drives		Help Item
1st Drive	1st FLOPPY DRIVE	

1st Drive Allows you to set (by pressing <Enter>) floppy as 1st removable drive.
Choices: Disabled; 1st Floppy Drive.

4-6.7. Power Management Features

Choose “Power Management 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.
Power Management Features

Power management Features		Help Item
▶ APM Configuration	Press Enter	

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

Choose “APM Configuration” in “Power management Features” and press <Enter>. The following items will appear for onfiguration:

APM Configuration

APM Configuration		Help Item
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	
Keyboard & PS/2 Mouse	Monitor	
FDC/LPT/COM Ports	Monitor	
Primary Master IDE	Monitor	
Primary Slave IDE	Monitor	
Secondary Master IDE	Monitor	
Secondary Slave IDE	Monitor	
Power Button Mode	On/Off	
Resume On Ring	Disabled	
Resume On LAN	Disabled	
Resume On 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/APM

Allows you to enable / disable APM (Advanced Power Management).

Video Power Down Mode

To power down video to Suspend or Standby mode.
Choices: Disabled; Suspend; Standby

Hard Disk Power Down Mode

To power down Hard Disk to Suspend or Standby mode.
Choices: Disabled; Suspend; Standby

Standby Time Out

This item allows you to select the time for Standby Time Out mode..
Choices: Disabled; 1 min; 2 min; 4 min; 8 min; 10 min; 20 min; 30 min; 40 min; 50 min; 60 min

Suspend Time Out

This item allows you to select the time for Suspend Time Out mode..
Choices: Disabled; 1 min; 2 min; 4 min; 8 min; 10 min; 20 min; 30 min; 40 min; 50 min; 60 min

Keyboard & PS/2 Mouse

To ignore or monitor the Keyboard & PS/2 Mouse with Power Management/APM.
Choices: Ignore; Monitor

FDC/LPT/COM Ports

To ignore or monitor the FDC/LPT/COM ports with Power Management/APM.
Choices: Ignore; Monitor

Primary Master/Slave IDE

To ignore or monitor the Primary Master/Slave IDE with Power Management/APM.
Choices: Ignore; Monitor

Secondary Master/Slave IDE

To ignore or monitor the Secondary Master/Slave IDE with Power Management/APM.
Choices: Ignore; Monitor

Power Button Mode

To select the Power Button function.
Choice: On/Off; Suspend

Resume On Ring / LAN / PME# / RTC Alarm

To enable / disable the Resume on Ring / LAN / PME# / RTC(Real lime Clock) alarm.
Choices:Disabled; Enabled

4-6.8. Boot Security Features

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

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		Install or Change the password.
User Password : Not Installed		
► Change Supervisor Password	Press Enter	
► Change User Password	Press Enter	
Clear User Password	Press Enter	
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

4-6.8.1. Supervisor Password

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

4-6.8.2. User Password

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

4-6.8.3 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.

4-6.8.4 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.

4-6.8.5. 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

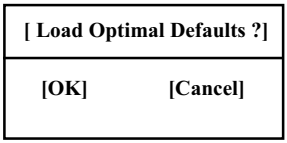
4-6.8.6 Boot Sector Virus Protection

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.

4-6.9 Load Optimal Defaults

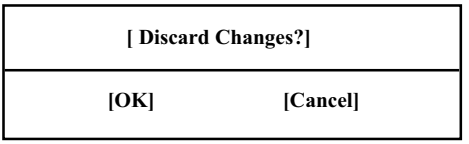
When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:



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

4-6.10 Discard Changes

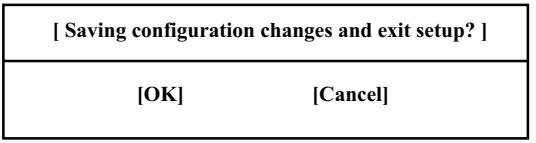
Discard Changes option allows you to cancel the modifications that you have specified in the Setup Utility. Highlight this option on the Main Menu and press <Enter> and the following message appears:



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

4-6.11 Save Changes and Exit

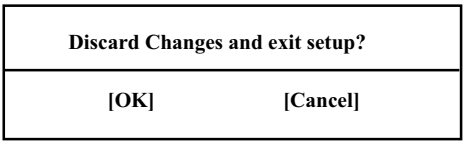
Save Changes and Exit allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and press <Enter>. The following message appears:



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

4-6.12 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:



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

Chapter 5 RAID & Driver Setup

ITE RAID Controller

ITE RAID Controller IT8212F is built in this mainboard to provide RAID configuration of Parallel IDE RAID 0, RAID 1, and RAID 0+1 modes. RAID Drivers are enclosed in a Driver CD as well as a Floppy diskette to support various RAID systems (Windows 98SE/Me/2000/XP) setup.

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5-0 About DiskArray

5-0-1 Disk Array Interpretation

A “Disk Array” is formed from a group of 2 or more disk drives with the RAID (Redundent Array of Independent Disks) technology. The aim of a Disk Array is to provide better perfornance and/or data fault tolerance.

5-0-2 Disk Array Member

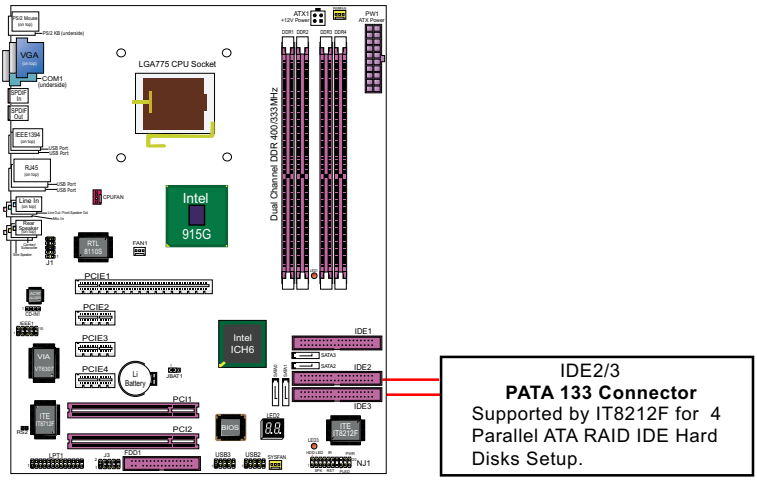
The individual disk drive in an array is called a “member”. Each member of a specific disk array is coded in their “reserved sector” with configuration information that identifies the drive as a member. All disk members in a formed disk aarray are recognized as a single physical drive to the system.

5-0-3 Disk Array Types

Different types or modes of Disk Array have different formation models and functions.

1. RAID 0 (or Striping mode):
   RAID 0 is a group of 2 to 4 Disk Drives configured together with RAID technology to provide better data transfer performance than a single drive since the workload is balanced between the array members. Reads and Writes of RAID 0 data are interleaved between multiple drives. When any disk member fails, it affects the entire array. The disk array size is equal to the number of drive members times the smallest member capacity. For example, one 1GB drive and three 1.2GB drives will form a 4GB (4x1GB) disk array.
2. RAID 1 (or Mirroring mode):
   RAID 1 is a group of 2 Disk Drives configured together with RAID Technology to provide the fault tolerance function. Writes duplicate data on to RAID 1 while reads are performed in parallel. If one of the mirrored drives suffers a mechanical failure (e.g. spindle failure) or does not respond , the remaining drive will continue to function. This is called Fault Tolerance.
   The drive capacity of RAID 1 is half the total drive capacity of two equal-size drive.
3. RAID 0+1 (Mirror/Stripe):
   RAID 0+1 is formed by a RAID 0 member mirrored to another RAID member to establish a RAID 0+1 Array. RAID 0+1 requires at least 4 disk drive to set up the RAID 0+1 configuration.

5-1 To Set up IT8212F with ITE RAID Interface



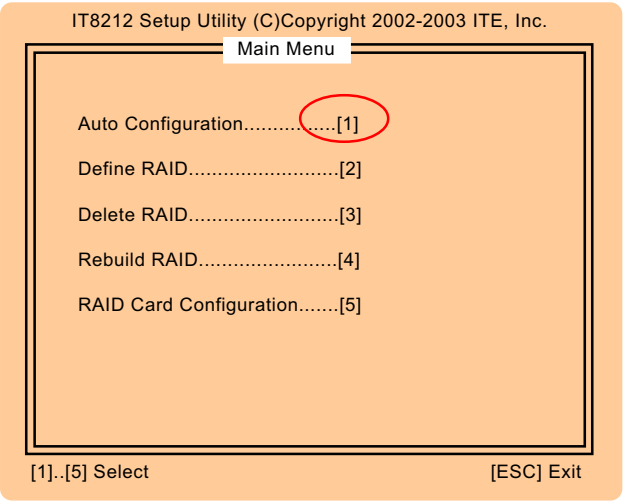
To set up ITE Parallel RAID system, first set up IDE hard disks to IDE2 and IDE3 connectors and then boot the 915GPro-FGR system and watch for the following initial screen to appear:

```
IT8212 RAID BIOS V1.4.1.6 F/W Ver 02093030
Copyright 2003-2003 ITE, Inc. All Rights Reserved

Press wait for IDE scan..
Drive 0:    ST3120026AS          114473MB
Drive 1:    ST3120026AS          114473MB
Drive 2:    Not Detected
Drive 3:    Not Detected

Press <Ctrl-F> or <Ctrl-E> to enter Setup Utility or
Press <ESC> or <S> to continue booting.....
```

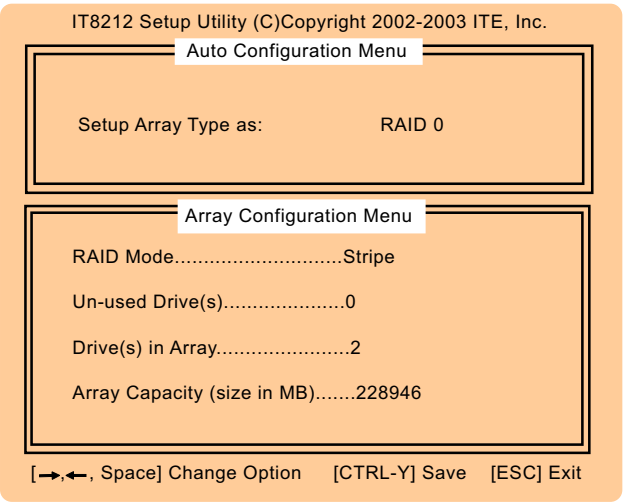
As soon as the above screen appears, press the <Ctrl-F> keys to set up ITE RAID Utility.

5-2 ITE RAID Setup

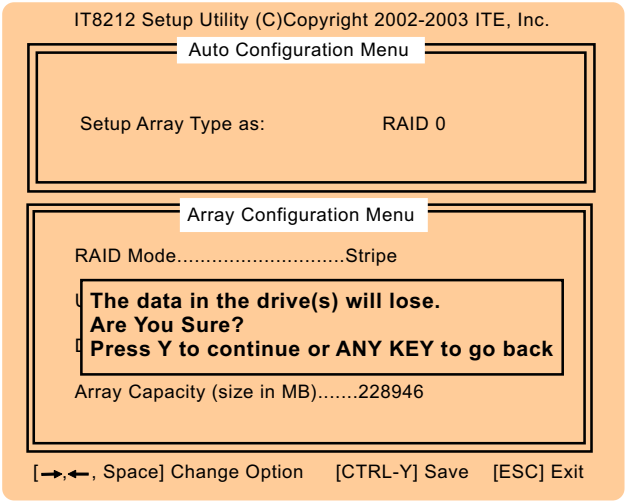
1.For quick installation of RAID, please select <1> to enter Auto configuration to set up RAID mode.



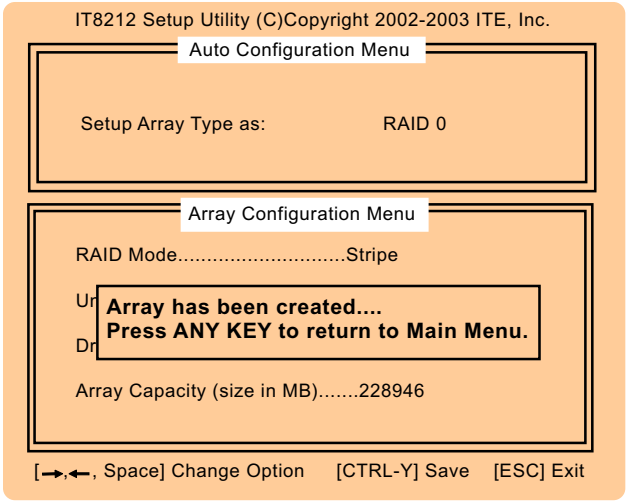
2. To choose RAID mode, press <space> key to change to whatever mode you are about to set up. Detailed information about Disk Arrays will show in “Array Configuration Menu” as illustrated below.



3. When the RAID mode has been selected andRAID is to be created, a message appears as illustrated below. Press <Y> to continue or <ANY KEY> to go back.



4. When the procedure is complete, press <ANY KEY> to return to Main Menu and press <Ctrl+Y> to save. To exit this screen, press <ESC>.



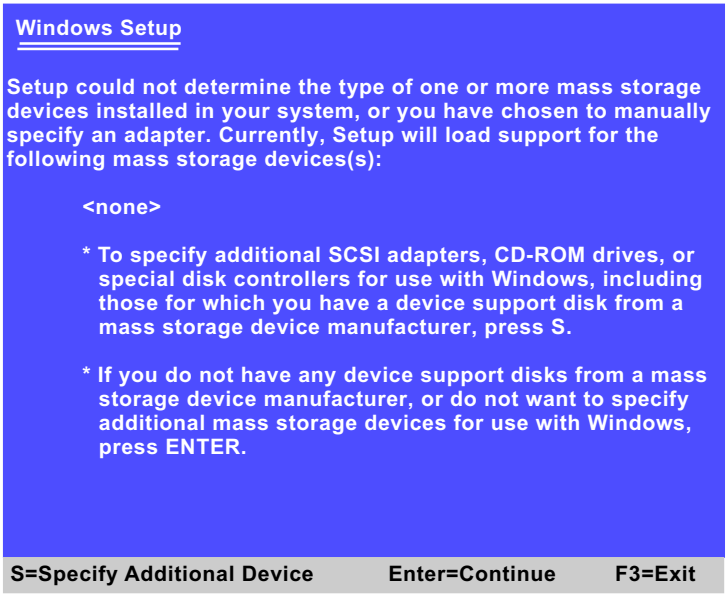
5-3 To Install ITE RAID Driver

ITE IT8212F RAID Driver is incorporated in Support CD/Floppy Diskette for user's installation. This driver is intended for Windows 98/Me/NT4/2000/XP/2003.

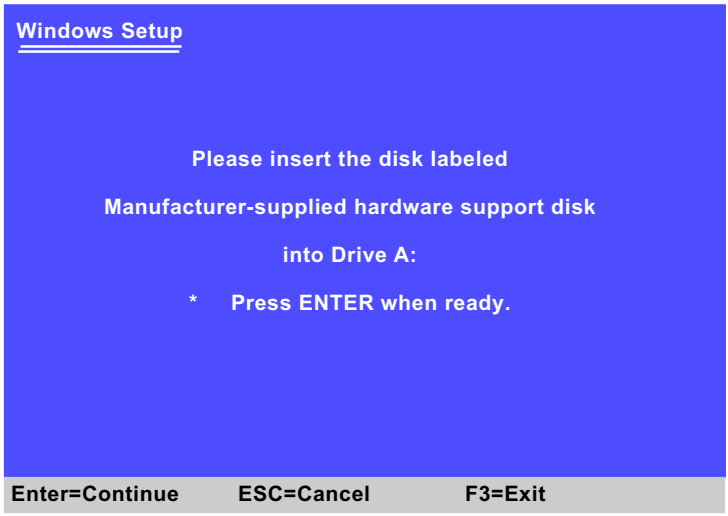
5-3-1 Install RAID Driver on Windows 2000/XP

(1) Get ready the Floppy Diskette holding the RAID Driver.
(This Driver Diskette should have been enclosed in the mainboard Package.)
(2) Check that Hard Disks are connected properly to the RAID connectors.
(3) Start your PC system and use RAID BIOS Setup Utility to configure RAID 0 / 1/ 0+1 to the hard disks.
(4) Restart System and apply the Windows 2000/XP CD to CD-ROM for operating system installation.
(5) On the Windows 2000/XP Setup screen, press "F6" key for RAID driver setup.

(6) On next screen press “S” to confirm the mass storage device setup.



(7) On next screen apearing, insert the RAID Driver Diskette to Drive “A” and then press <Enter>.



(8) On next screen appearing, choose the driver suitable for your operating system and press <Enter> to continue.

The Installation Program will then guide you through the rest of system setup. The RAID driver will then be installed into your system.

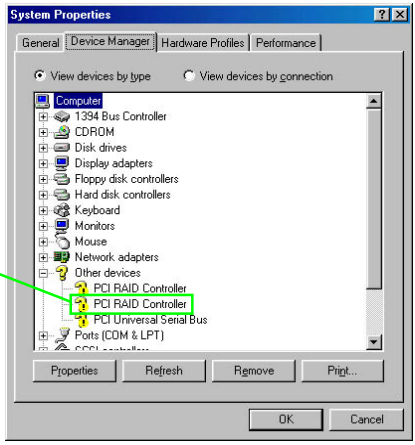
5-3-2 RAID Driver on Windows 98SE/Me

(1) Get ready the Floppy Diskette holding the RAID Driver.
(2) Check that IDE Hard Disks are connected properly to the PATA Connectors.
(3) Start your system and use RAID BIOS Setup Utility to configure RAID 0 or RAID 1 or RAID 0+1 to the hard disks.
(4) Restart System and format the bootable hard disks.
(5) Now, apply the Windows 98SE/Me CD to CD-ROM for operating system installation.
(6) Start the Windows 98SE/Me system.
(7) On the "Start" screen of your system, please click to the following path:

\My Computer\properties\Device manager

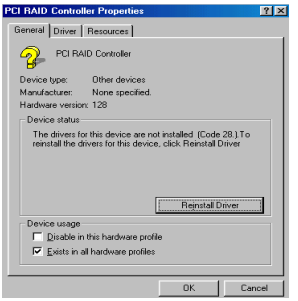
(8) In the "Device manager" screen, you can see the item " PCI RAID Controller" with a yellow question mark on its left side, which indicates that the RAID controller is already detected by system but the driver is not installed yet. Please point to this item with your mouse and double click on it (or click the "Properties" button).

The question mark here indicates that RAID Controller Driver is not installed yet.



(9) Instantly, the “PCI RAID Controller Properties“ screen shows up. Please click the “General” bar to continue.

(10) 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”.



(11) 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 RAID Driver CD/Diskette into CD-ROM/Drive A.

(12) Check the “Specify a location” on next creen and click the “Browse” button to find out the correct path for the driver. As the RAID Driver is in Drive A, please type into the blank bar the correct path and click “Next” to continue.

(13) The Update Device Driver Wizard will then go on installing the driver. In a few seconds, installation completes. Please click the “Finish” button on the screen to complete the installation.