



# CERTIFICATE

The TÜV CERT Certification Body  
for QM Systems of RWTÜV Systems GmbH

hereby certifies in accordance with TÜV CERT  
procedure that

**ELITEGROUP COMPUTER SYSTEMS CO., LTD.  
ECS MANUFACTURING (SHENZHEN) CO., LTD.  
ELITE TECHNOLOGY (SHENZHEN) CO., LTD.**

27, No. 240, Sec. 1, Nei Hu Road, Taipei, Taiwan 114  
No. 22, Alley 28, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114  
No. 20 & No. 26, Free Trade Zone, Shaotoujiao, Shenzhen City, Guangdong Province, China

has established and applies a quality system for

**Design, Manufacturing and Sales of Mainboards,  
Personal Computers, Notebooks and Peripheral Cards**

An audit was performed, Report No. **2.5-1585/2000**

Proof has been furnished that the requirements according to

**ISO 9001 : 2000 / EN ISO 9001 : 2000 / JIS Q 9001 : 2000 / ANSI/ASQC Q9001 : 2000**

are fulfilled. The certificate is valid until **27 January 2007**

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**



Essen, 04.03.2004

**RWTÜV**

The TÜV CERT Certification Body for QM Systems  
of RWTÜV Systems GmbH



# ISO14001 CERTIFICATE

Certificate No.: **061-04-E1-0065-RI-L**

We hereby certify that

**ECS MANUFACTURING (SHENZHEN) CO., LTD.**

by reason of its

**Environmental Management System**

has been awarded this certificate for  
compliance with the standard  
**ISO14001:1996**

The Environmental Management System  
applies in the following area:

**ECS MANUFACTURING (SHENZHEN) CO., LTD.**  
located at No. 20 & 26 (except 1E, 2F), Free Trade Zone,  
Shaotoujiao, Shenzhen City, Guangdong Province, P. R. China,  
is engaged in manufacturing of Mother Board and Peripheral Card,  
and interrelated managerial activities.

Date of issue: **28th Sept. 2004**

Date of expiry: **27th Sept. 2007**

Signed by:



**SHENZHEN SOUTHERN CERTIFICATION CO., LTD.**

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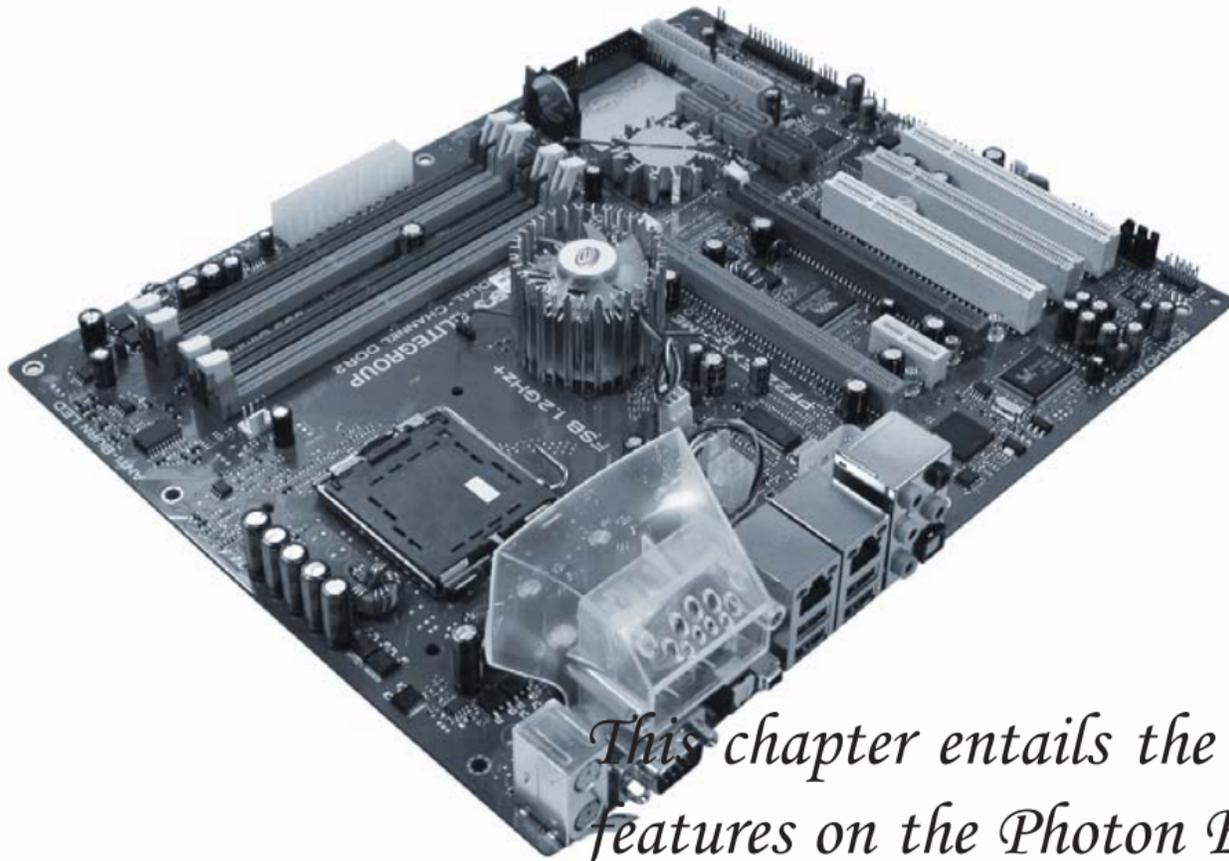
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#### **Multi-Language Translations**

#### **Legal Notices**



*This chapter entails the newest technology and rich features on the Photon Extreme motherboard.*

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## 1.1 Introduction

Thank you for choosing the ECS PF22 Extreme motherboard.

The PF22 Extreme is the next generation of high performance motherboard designed to support the LGA775 socket Intel Pentium 4/Pentium D/Pentium processor Extreme Edition/Pentium 4 Extreme Edition Processors.

This motherboard has an ATX form factor that uses a 4-layer printed circuit board and measures 305 mm x 244 mm.

The PF22 Extreme motherboard is based on the Intel 955X Northbridge and ICH7R Southbridge chipsets to set a new benchmark for the best desktop platform solution. Supporting up to 8 GB of system memory with DDR2 667/533 DDR DIMMs, high resolution graphics via PCI Express ports, Dual Giga LAN, USB 2.0, 8-channel audio, Digital S/PDIF in/out, SATAII support and RAID function.

## 1.2 Package Check List

Motherboard



User's Guide



Installation CD



SATA Power Cable



Top Hat Flash



I/O Shield



HDD, CD-ROM, and  
FDD cables



SATA Cables



Cross Over Cable



USB+1394 PCI  
Bracket & housing



eSATA Cable



\*Accessories are subject to change with prior notice.

## 1.3 Feature Summary

CPU	<ul style="list-style-type: none"> <li>• LGA775 Socket for Intel Pentium/Pentium D processor Extreme Edition/Pentium 4 Extreme Edition processor</li> <li>• Supports up to 1066/800 MHz FSB</li> <li>• Supports Hyper-Threading Technology</li> </ul>
Chipset	<ul style="list-style-type: none"> <li>• Intel 955X &amp; ICH7R</li> <li>• North Bridge: Intel 955X</li> <li>• South Bridge: Intel ICH7R</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• Dual-channel DDR2 memory architecture</li> <li>• 4 x 240-pin DDR2 DIMM socket support up to 8 GB</li> <li>• Supports DDR2 667/533</li> <li>• ECC &amp; Non-ECC, unbuffered 1.8V DDR DIMMs</li> <li>• Supports Intel MPT (Memory Pipeline Technology)</li> </ul>
Expansion Slots	<ul style="list-style-type: none"> <li>• 2 x PCI Express x16</li> <li>• 1 x PCI Express x1</li> <li>• 3 x PCI Slots</li> </ul>
Storage	<ul style="list-style-type: none"> <li>• Supported by ICH7R</li> <li>- 2 x Ultra DMA100/66 devices</li> <li>- 4 x SATAII devices with Intel Matrix Storage</li> <li>- RAID 0, RAID 1, RAID 10, RAID 5 configuration</li> </ul>

	<ul style="list-style-type: none"> <li>• Supported by SiI3132</li> <li>- 2 x SATAII devices</li> <li>- RAID 0, RAID 1 &amp; e-SATA &amp; PM support</li> </ul>
IEEE 1394a	<ul style="list-style-type: none"> <li>• VIA IEEE1394a controller</li> <li>• Supports 2 x IEEE1394a ports</li> </ul>
Audio	<ul style="list-style-type: none"> <li>• 8-channel audio CODEC</li> <li>• Compliant with Intel HD (High Definition) Audio</li> </ul>
Dual LAN	<ul style="list-style-type: none"> <li>• Intel PCI-E Giga LAN Controller</li> <li>• Realtek Giga LAN Controller</li> </ul>
Rear panel I/O	<ul style="list-style-type: none"> <li>• 1 x PS/2 keyboard connector</li> <li>• 1 x PS/2 mouse connector</li> <li>• 4 x USB ports</li> <li>• 2 x RJ45 LAN connectors</li> <li>• 1 x 1394a port</li> <li>• 1 x Serial port (COM1)</li> <li>• 1 x Digital SPDIF in</li> <li>• 1 x Digital SPDIF out</li> <li>• Line-out/Line-in/Microphone in connectors</li> </ul>
BIOS features	<ul style="list-style-type: none"> <li>• AMI BIOS with 4Mb Flash ROM</li> <li>• Supports Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li> <li>• Supports ACPI revision 1.0 specificaion</li> </ul>

Internal I/O	<ul style="list-style-type: none"> <li>• 1 x 24-pin ATX Power Supply Connector &amp; 8-pin 12 V Connector</li> <li>• 1 x Floppy connector- supports 360K ~ 2.88M Bytes, 3 Mode FDDs or LS120</li> <li>• 1 x IDE connector</li> <li>• 6 x Serial ATA connectors</li> <li>• 2 x USB 2.0 headers support additional 4 USB ports</li> <li>• 1 x 1394a header</li> <li>• 1 x CD in header</li> <li>• 1 x Front panel switch/LED header</li> <li>• 1 x Front panel audio header</li> <li>• 1 x LPT header</li> <li>• 1 x CHS1 header</li> <li>• 1 x Auxiliary 4-pin +12V connector</li> <li>• 1 x Speaker Header</li> <li>• 1 x IrDA for SIR header</li> <li>• 1 x CPUFAN/1 x NBFAN/2 x SYSFAN connectors</li> </ul>
Form Factor	<ul style="list-style-type: none"> <li>• ATX size</li> <li>• 305mm x 244mm</li> </ul>

## 1.4 Special Features

### Extreme Power



*The ultimate I/O speed you need in 5 years*



*Upgrade your PC to Server-grade power now!*



*Slash memory access time!*



*New Generation of I/O interface!*



*One-key boot device selection!*



*Awesome overclocking!*



*Uncompromising DVD audio quality!*



*Overdrive your HDD performance with NCQ!*



*The most efficient algorithm!*



*The most powerful engine!*



*Increased, supercharged 3D graphics & performance!*



*Intel MPT*

### Extreme Guardian



*Auto restart after power loss!*



*PC protection tool kit!*



*A 'time machine' to protect and restore files!*



*Connect with external Multiple devices with FIS based switching function!*



*External SATA hot plug, anytime & anywhere. Absolute no limitation!*



*Become your own BIOS 'doctor'!*



*Fuzzy logic design for diagnosing PCI slots health!*



*Memory module alert!*

## **Extreme Link**



*Dual Gigabit Ethernet*



*Add peripherals and consumer electronics devices!*



*PCI 2.3 support!*



*All the USB 2.0 connectivity you'll ever need!*



*More port options!*



*Industrial-strength LAN power!*



*Let your PC as a fileserver!*



*Double digital audio!*



*Let your PC as a fileserver!*



*A cooling channel with a fansink placed on top of the PWM controller!*



*Provide good performance and data protection!*



*Server Class Dual LAN for both Internet & Intranet!*



*The easy way to optimize PC performance!*



*More options for data storage!*

## **Extreme Genius**



*Color-coding for easy connections!*



*Flash BIOS from Windows!*



*Rounded corners for strength and safety!*



*Eliminate data highway roadblocks!*



*Ultra sound quality!*



*An dust-proof auto shutter for optical connector!*



*Clear & Clean!*



#### **6. *SiI 3132 Serial ATA controller***

This motherboard incorporates the high performance SiI3132 IDE RAID controller, which supports RAID 0, RAID 1, PM & e-SATA configuration.

#### **7. *Flash ROM***

This 4Mb ROM contains the programmable BIOS program.

#### **8. *PCI slots***

These three 32-bit PCI 2.3 expansion slots support bus master PCI cards like SCSI or LAN cards with 133MB/s maximum throughput.

#### **9. *PCI Express x16 (PCIEX2 & PCIEX1) slot***

This 955X has two x16 PCI Express slots, which are intended for external PCI Express graphics cards.

#### **10. *PCI Express x1 (PCI-E1) slot***

The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 1.0a

#### **11. *Audio CODEC***

The audio CODEC is compliant with Intel Azalia spec and supports 8-channel High Definition audio.

#### **12. *Gigabit LAN Controller***

The LAN delivers a transfer rates up to 10/100/1000Mbps.

#### **13. *IEEE 1394a controller***

The IEEE 1394a controller provides high-speed and flexible PC

connectivity to a wide range of peripherals and devices compliant to IEEE 1394a standards. The IEEE 1394a interface allows up to 400Mbps transfer rates.

#### **14. *Gigabit LAN controller***

The Gigabit LAN controller delivers transfer rates up to 10/100/1000Mbps for the Ethernet connection. Ideal for handling large amounts of data such as video, audio and voice.

#### **15. *Cooling Accelerator***

The cooling accelerator supercharges airflow exchange between the chassis interior and exterior, keeping operating temperatures under control.

##### **a. *Anti-Burn LED indicator***

When this LED is lit up, do not remove the memory module from your DIMM slot or else your memory module will be damaged.

##### **b. *PCI LED indicator***

The PCI LED indicates the PCI slot activity. These LEDs will stop blinking when add-in card has been installed. Blinking means no add card installed or add-in card was not properly installed.

**Note: When installing add-card on PCIEX2 slot, PCI LED indicators aside PCIEX2 and PCI-E1 slots remain shining; meanwhile, PCIEX1 will be disabled when PCIEX2 is installed.**



### 3. Battery



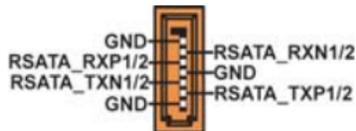
Danger of explosion if battery is incorrectly replaced. Replace only with the same of equivalent type recommended by the manufacturer.

### 4. FDD1 (Floppy Connector, 34-1 pin)



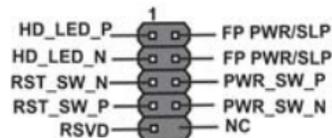
Please connect the floppy drive ribbon cables to FDD. It supports 360K, 12M, 720K, 1.44M and 2.88M bytes floppy disk types.

### 5. SATA 1/2/3/4 (Serial ATA Connectors, 7 pin)



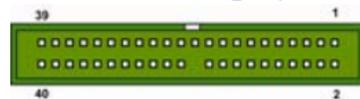
These next generation connectors delivered by ICH7R South Bridge support the thin Serial ATA cables for Serial ATA hard disks. The current Serial ATA interface allows up to 300MB/s data transfer rate, faster than the standard parallel ATA with 133MB/s (UltraATA 133)

### 6. PANEL1 (Front Panel Header, 10-1 pin)



The front panel connector provides a standard set of switch and LED connectors commonly found on ATX or Micro ATX cases.

### 7. IDE 1 (IDE1 Connector, 40-1 pin)



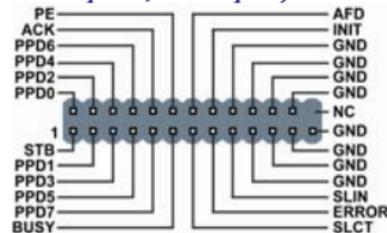
This is supported by ICH7R South Bridge. Please connect the first hard disk to IDE 1.

### 8. CHS1 (Chassis Intrusion Detect header, 2 pin)



This header allows users to detect unauthorized intrusion to the case. It will alert users with a warning message when the case is turned on.

### 9. LPT1 (Onboard LPT port, 26-1 pin)



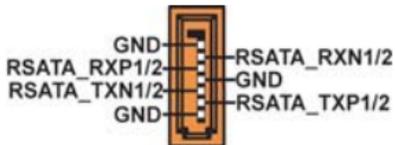
This 25-pin port connects a parallel printer, a scanner, or other devices.

### 10. IR1 (Infrared header, 6-1 pin)



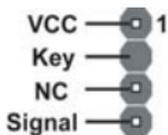
The motherboard supports an infrared (IR1) data port. Infrared ports allow the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

### 11. SATA 5/6 (Serial ATA RAID Connectors, 7 pin)



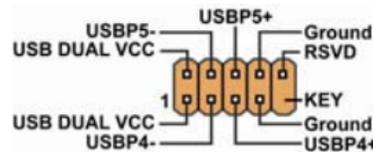
These Serial ATA connectors support SATA hard disks that you can configure as a RAID set. Through the onboard SiI3132 RAID controller, you can create a RAID 0, RAID 1 configuration.

### 12. SPK1 (Speaker Header, 6-1 pin)



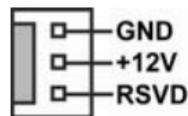
Connect the case speaker cable to the header.

### 13. USB1/USB2 (Front USB Headers, 10-1 pin)



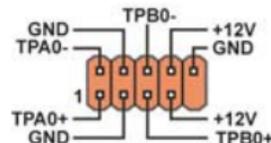
If the USB ports on the rear panel are inadequate, two USB headers are available for additional USB ports. The USB header complies with USB 2.0 specification that supports up to 480 Mbps connection speed. This is a speed advantage over the conventional 12 Mbps on USB 1.1.

### 14. SYSFAN2 (System Fan Connectors, 3 pin)



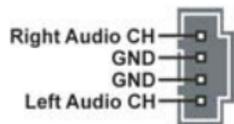
Please connect the system cooling fan connector to SYSFAN2 and match the black wire to the ground pin.

### 15. 1394A2 (10-1 pin Header)



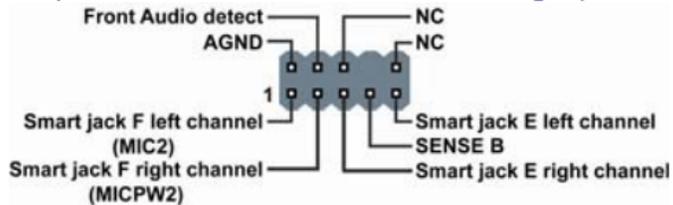
Attach the 10-1 pin 1394 cable plug from the device to this connector. You may also connect a 1394-compliant internal hard disk to this connector.

**16. CD\_IN1 (CD In Connector, 4 pin)**



Connect CD-ROM or DVD-ROM audio out to the connector.

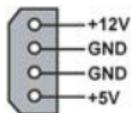
**17. AUDIO1 (Front Panel Audio Header, 10-1 pin)**



This is an interface for the Intel front panel audio cable that allows convenient connection and control of audio devices.

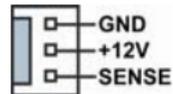
**Notes:** If your front panel cable is separated, please connect it to pin1 and pin3 or pin5 and pin7 to activate the MIC function.

**18. ATX4P1 (Auxiliary power connector for graphics cards)**



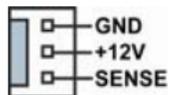
ATX4P1 power connector is for power supply plug; it offers adequate supply of power to the motherboard. The power supply plug is designed to fit connector in only one orientation. When installing two graphics cards, do not forget to connect the 4-pin power plug to the ATX4P1. If not, the system may become unstable.

**19. NBFAN1 (Northbridge Fan Connector, 3 pin)**



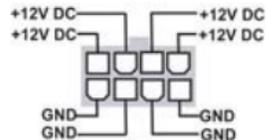
Please connect the Northbridge cooling fan connector to NBFAN1 and match the black wire to the ground pin.

**20. SYSFAN1 (System Fan Connectors, 3 pin)**



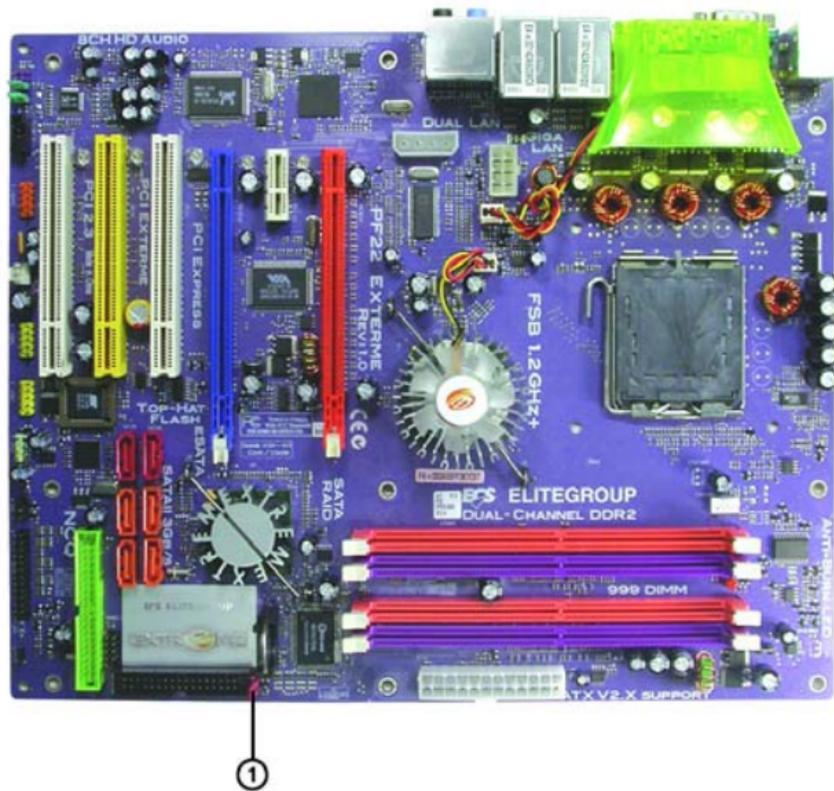
Please connect the system cooling fan connector to SYSFAN1 and match the black wire to the ground pin.

**21. ATX12V1**



This connector supplies the CPU operation voltage (Vcore). Don't forget to connect the 8-pin ATX 12V connector, otherwise the system cannot boot up.

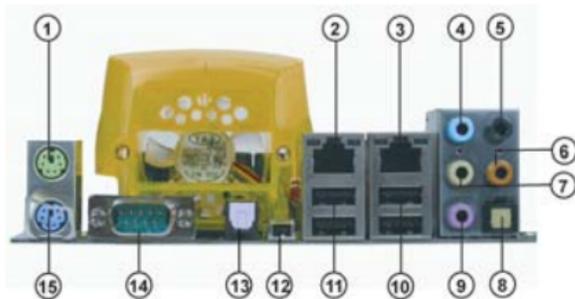
## 1.7 Jumpers



### 1. *JP1 (Clear CMOS)*

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RAM data. Before clearing the CMOS data, make sure to turn the system off.

## 1.8 Rear Panel



### **1. PS/2 mouse port**

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

### **2. RJ-45 port**

This port allows connection to a Local Area Network (LAN) through a network hub. It supports up to 10/100/1000Mbps transfer rate.

### **3. RJ-45 port**

This port allows connection to a Local Area Network (LAN) through a network hub. It supports up to Gigabit transfer rate.

### **4. Line In/Side Surround Jack \***

This jack connects a tape player or other audio sources. In 8-channel mode, the function of this jack is Side Surround speaker out.

### **5. Back Surround Jack \***

This jack connects a tape player or other audio sources. In 8-channel mode, the function of this jack is Back-Surround speaker out.

### **6. Center/Bass Jack \***

This jack connects a tape player or other audio sources. In 8-channel mode, the function of this jack is Center/Bass speaker out.

### **7. Front Out Jack \***

This jack connects a tape player or other audio sources. In 8-channel mode, the function of this jack is Front speaker out.

### **8. Optical S/PDIF output port**

This jack connects to external digital audio output devices.

### **9. Microphone in Jack \***

The function of the jack is microphone input.

### **10/11. USB 2.0 ports 3/4**

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

### **12. 1394\_A1 port**

Use the 1394a port to connect any Firewire device.

### **13. SPDIF1 input port**

This jack connects to external digital audio input devices.

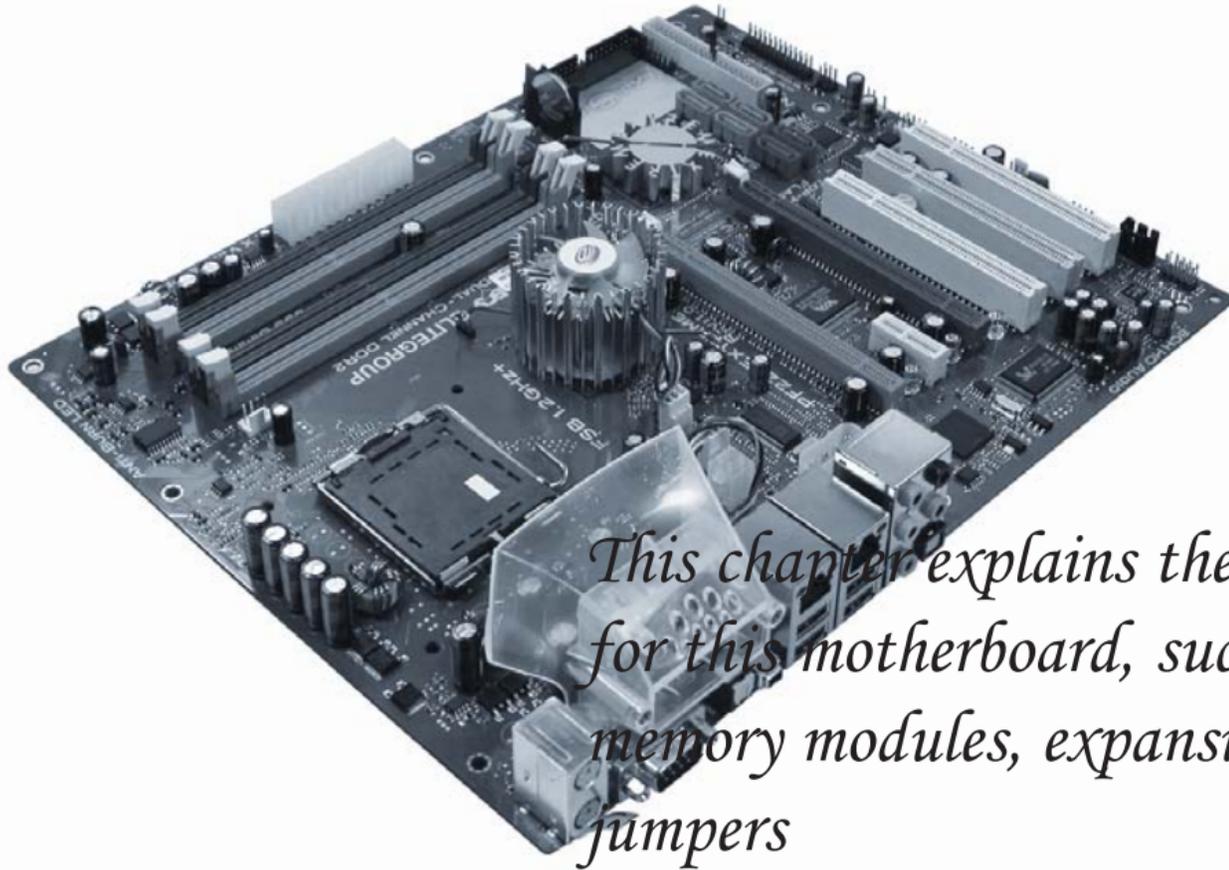
### **14. Serial port (COM1)**

This 9-pin COM1 port is for serial devices.

### **15. PS/2 keyboard port**

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

**Note: The audio ports with a \* sign can be changed to audio input or audio output by changing the driver utility setting.**



*This chapter explains the hardware setup procedure for this motherboard, such as installing the CPU, memory modules, expansion cards, as well as the jumpers*

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## 2.1 Installing the CPU & the CPU cooling fan

- A. Unload the cap
- Use thumb & forefinger to hold the lifting tab of the cap.
  - Lift the cap up and remove the cap completely from the socket.
- B. Open the load plate
- Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
  - Lift up the lever.
  - Use thumb to open the load plate. Be careful not to touch the contacts.
- C. Install the CPU on the socket
- Orientate CPU package to the socket. Make sure you match the triangle marker to the pin 1 location.
- D. Close the load plate
- Slightly push down the load plate onto the tongue side, and hook the lever.
  - CPU is locked completely.
- E. Apply thermal grease on top of the CPU.



- F. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.
- G. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detailed installation procedure.



*1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.*

*2 DO NOT remove the CPU cap from the socket before installing a CPU.*

## 2.2 Installing Memory Module

1. Push the latches on each side of the DIMM slot down.
2. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
3. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.



**Table A: DDR2(memory module) QVL (Qualified Vendor List)**

The following DDR2 533/667 memory modules have been tested and qualified for use with this motherboard. *(Non-ECC memory)*

The following DDR2 533/667 memory modules have been tested and qualified for use with this motherboard. *(ECC memory)*

Type	Size	Vendor	Module Name
DDR2 533	256MB	Infineon	HYS64T32000HU-3.7-A
		Kingston	KVR533D2N4
		A-DATA	M2OHY2F3G3110A1B0Z
		SAMSUNG	M378T3253FGO-CD5
		Elixir	M2U25664TUH4A0F-37B
		Ramaxel	RML 1040M28D5F-533
	512MB	SAMSUNG	M378T6553BGO-CD5
		AENEON	AET660UD00-370A98X
	1GB	Infineon	HYS64T128020HU-3.7-A
	DDR2 667	512MB	SyncMAX
KINGMAX			KLCC28F-A8MF5
CORSAIR			VS512MB667D2
NANYA			NT512T64U88A0BY-3C
ELPIDA			EBE52UC8AAFV-DF-E
Transcend			SAMSUNG

Type	Size	Vendor	Module Name
DDR2 533	256MB	Micron	MT9HTF3272AY-53EB3
	512MB	Infineon	HYS72T64000HU-3.7-A
		Micron	MT9HTF6472AY-53EB3
	1GB	Infineon	HYS72T128020HU-3.7-A
		Micron	MT18HTF12872AY-53EB1
DDR2 667	512MB	Apacer	ELPIDA E5108AE-6E-E
	1G	Apacer	ELPIDA E5108AE-6E-E

**Table B: Recommended dual-channel DDR2 configurations**

DIMM1	DIMM2	DIMM3	DIMM4	Dual Channel
√		√		√
	√		√	√
√	√	√	√	√

**Notes:** When using dual channel mode, install only same (same density, DRAM technology and DRAM bus width) module for each dual channel.

Memory module install into one or any four sockets will function in single channel mode.

## 2.3 Connecting IDE, Floppy and SATA cable

1. Connect the IDE/Floppy disk ribbon cable. Make sure the side of the cable with the red stripe on it is plugged into *pin 1* side of the disk connector.
2. Connect the SATA cable to the SATA hard drive or the connector on the motherboard.



**IDE connector**



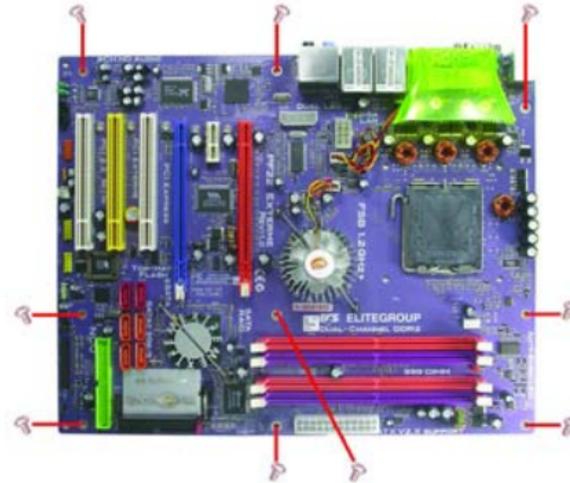
**FDD connector**



**SATA connector**

## 2.4 Installing Motherboard in a case

1. Place the motherboard over the mounting brackets.
2. Secure the motherboard with screws where appropriate.



3. Double check to make sure that the underside of the motherboard is not touching the case or else shorting may occur and make sure that the slots and I/O connectors line up with the holes on the back of the case.
4. Case LED leads are labeled, connect the leads to the panel header on the motherboard.

## 2.5 Connecting IDE, Floppy & SATA Device

1. If installing two IDE devices on the same ribbon cable, one device must be set to “master” and the other to “slave.” Check the accompanying documents for the master/slave settings of IDE Devices, ie.: the hard disk and CD-ROM drives and then set their jumper caps accordingly.
2. Mount the drives in the case.
3. Connect the floppy disk ribbon cable and power cable.
4. Connect the IDE ribbon cable and power cable.



IDE Hard Disk



Floppy Disk Device



SATA Hard Disk

## 2.6 Installing Expansion cards

1. Open the chassis and then remove the slot bracket from the case where you will be installing the expansion cards.
2. Install your graphics card in the proper slot by pressing the card firmly into the slot.

3. Drive in the screw to secure the slot bracket of the expansion card.
4. Replace your computer's chassis cover.
5. Power on the computer, if necessary, set up BIOS utility of expansion card from BIOS.
6. Install related driver to complete the installation.



*Installing two graphics cards*

- Notes:**
1. The two PCIe x16 slots run in two modes. With only one PCI Express Graphics card, install it into PCIEX1 slot by default. Having two PCI Express Graphics cards at hand, set them up into PCIEX1 and PCIEX2 slots simultaneously.
  2. The Scalable D.G.E supports a four-monitor configuration when PCIEX1 slot and PCIEX2 slot are working simultaneously.
  3. Please note that the graphics card driver supports Windows 2000/XP only.
  4. Make sure to connect a 4-pin ATX power cable to the ATX4P1; otherwise, the system will be unstable.

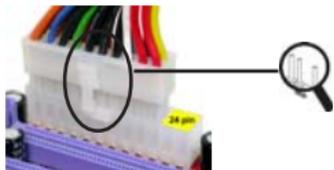
## 2.7 Connecting the Power supply cable

The ATX power connector is keyed for proper insertion. There are two connectors for 8-pin and 24-pin ATX power cables. The plastic clip on the power connector should lock over the plastic tab on the motherboard power connector.



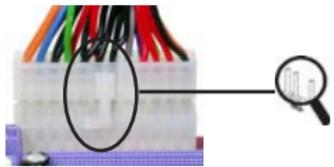
### ***Connecting 20/24-pin power cable***

Users please note that the 20-pin and 24-pin power cables can both be connected to the ATX1 connectors. With the 20-pin power cable, just align the 20-pin power cable with the pin 1 of the ATX1 connector. However, using 20-pin power cable may cause the system to become unbootable or unstable because of insufficient electricity.



***20-pin power cable***

With ATX v1.x power supply, users please note that when installing 20-pin power cable, the latch of power cable falls on the left side of the ATX1 connector latch, just as the picture shows.



***24-pin power cable***

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.



### ***Connecting 4/8-pin power cable***

Users please note that the 4-pin and 8-pin power cables can both be connected to the ATX12V1 connector.



***4-pin ATX12V1 power connector***

When installing 4-pin power cable, the latches of power cable and the ATX12V1 match perfectly.

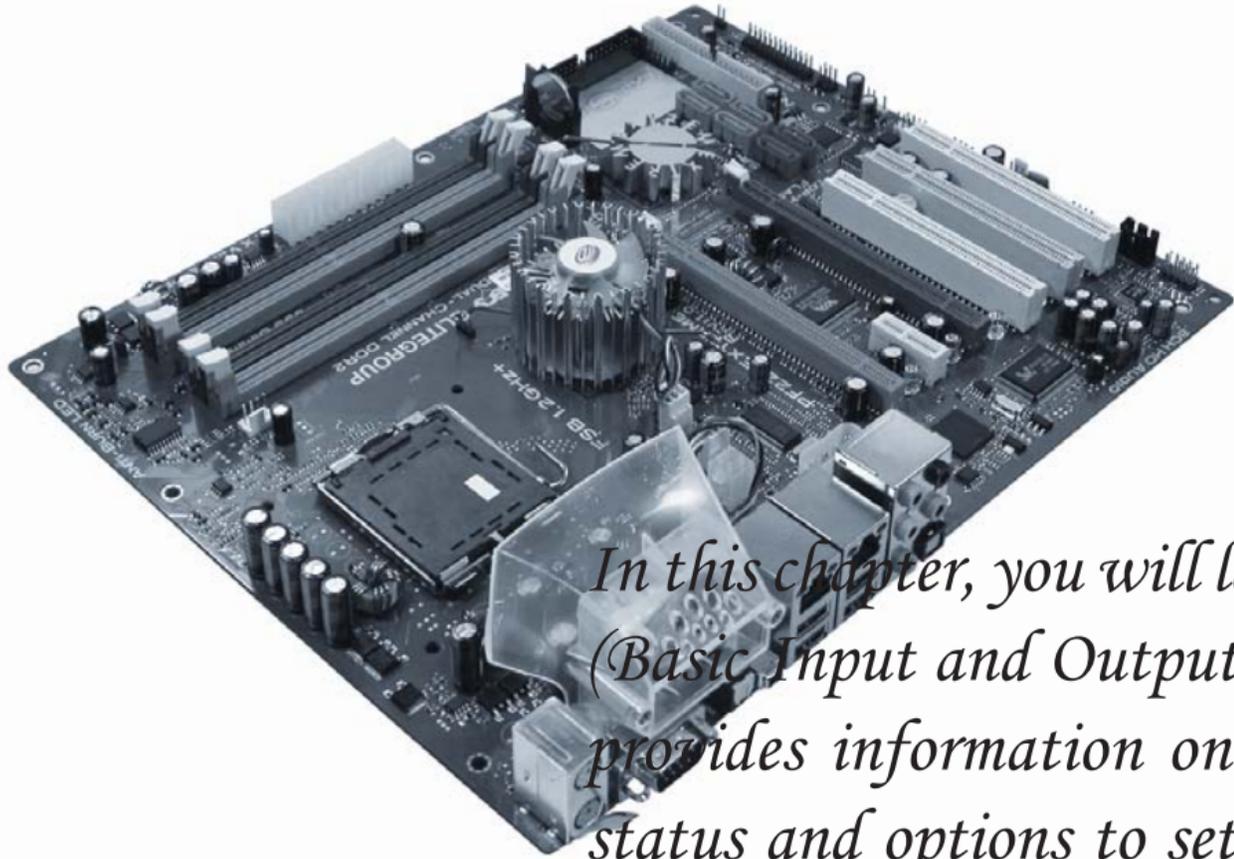


***8-pin ATX12V1 power connector***

Make sure to remove the cap on the ATX12V1 connector before connecting an 8-pin power cable. Connecting other power cables types may cause serious damage to the system.

## 2.8 Powering up

Turn on the power to the monitor and the computer. If necessary, format your hard disk drive and install an operating system.



*In this chapter, you will learn how to adjust the BIOS (Basic Input and Output System) setup menus. It provides information on the system's configuration status and options to setup system parameters.*

## Reference

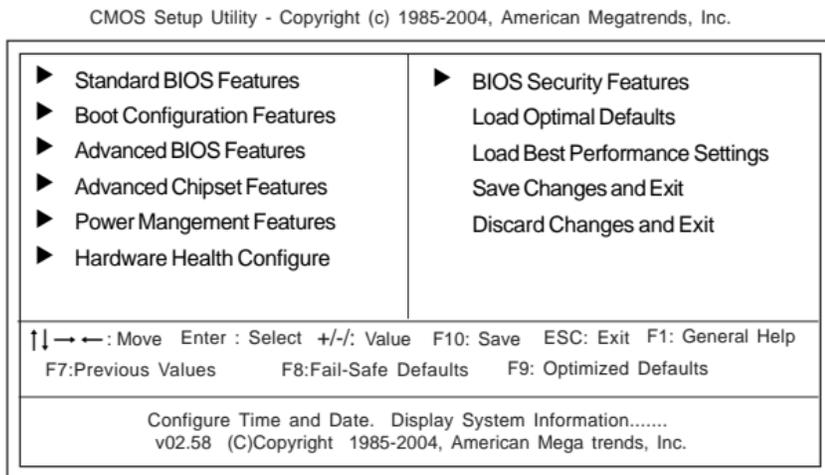
3.1	Entering the BIOS Setup Menu.....	3-1
3.2	Updating and Recovering the BIOS.....	3-1
	3.2-1 Using AMI Flash to update your BIOS.....	3-1
	3.2-2 Using ECS Top-Hat Flash to recover your BIOS..	3-2
3.3	The Main Menu.....	3-3
	3.3-1 Standard CMOS Features.....	3-3
	3.3-2 Boot Configuration Features.....	3-4
	3.3-3 Advanced BIOS Features.....	3-6
	3.3-4 Advanced Chipset Features.....	3-11
	3.3-5 Power Management Features.....	3-12
	3.3-6 Hardware Health Features.....	3-13
	3.3-7 BIOS Security Features.....	3-15
	3.3-8 Load Optimized Defaults.....	3-16
	3.3-9 Load Performance Defaults.....	3-16
	3.3-10 Save Changes & Exit Setup.....	3-17
	3.3-13 Discard Changes and Exit.....	3-17

## 3.1 Entering the BIOS Setup Menu

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. During the process of the POST routines, the following message appears:

**Press DEL to enter SETUP**

Pressing the delete key accesses the BIOS Setup Utility:

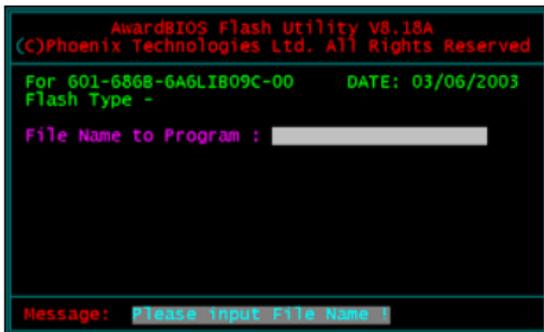


## 3.2 Updating and Recovering the BIOS

A standard configuration has already been set in the Setup Utility. However, if you encounter a configuration error or you need a better performance. You can update or recover your system BIOS.

### 3.2-1 Using AMI Flash to update your BIOS

1. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten).
2. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
3. Use the AMI Flash Utility from the ECS support CD and download the last BIOS file for this motherboard from ECS web site ([www.ecs.com.tw](http://www.ecs.com.tw)). Copy these files to the system diskette you created in step 2.
4. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
5. At the A:\ prompt, type the Flash Utility program name and press <Enter>. You will see a screen similar to the following:



6. Type the filename of the new BIOS in the “File Name to Program” text box. Follow the onscreen directions to update the motherboard BIOS.
7. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten.

### 3.2-2 Using ECS Top-Hat Flash to recover your BIOS

The ECS Top-Hat Flash kit allows you to restore BIOS from ECS website ([www.ecs.com.tw](http://www.ecs.com.tw)) or ECS support CD, in case you want to update the current BIOS on the motherboard or it gets corrupted, please follow the procedures below to recover your BIOS.

1. Please find the BIOS ROM located on your motherboard. (Figure A)
2. Find the cut edge corner on the Flash ROM. (Figure B)
3. Find the cut edge corner on the Top Hat Flash. (Figure C)
4. Orient the cut edge Top Hat Flash to BIOS ROM's and press the flash ROM into the lower socket of Top Hat Flash. (Figure D & E)
5. Then, power on your computer.



Figure A



Figure B



Figure C



Figure D



Figure E

6. After the computer boots up, remove the Top Hat Flash.
7. Download the BIOS file from ECS web site ([www.ecs.com.tw](http://www.ecs.com.tw)) or ECS support CD and use Flash Utility to reflash the original Flash ROM.
8. You can choose either AMI Flash utility in DOS mode or ECS “EZ Flash Utility” in windows to reflash the BIOS.

## 3.3 The Main Menu

The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

### 3.3-1 Standard BIOS Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

#### Standard BIOS Features

System Overview	Help Item
<b>AMIBIOS</b> Version : 08.00.12 Build Date : 03/23/05 ID : PF500000	Use [ENTER], [TAB] or [SHIFT-TAB] TO select a field.
<b>Processor</b> Type : Genuine Intel (R) CPU 3.00GHz Speed : 3000MHz Count : 1	Use [+] or [-] to configure system Time.
<b>System Memory</b> Size : 256MB	
<b>System Time</b> [00:04:43] <b>Saystem Date</b> [Tue 00/08/2002]	

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

### Processor

The item is automatically detected by the system at start up time. The Processor item shows the processor type and speed installed in your computer. This is display-only field. You cannot make changes to this field.

### System Memory

The item is automatically detected by the system at start up time. The is display-only field. You cannot make changes to this field.

### Time and Date

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

## 3.3-2 Boot Configuration Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

### Boot Configuration Features

Boot Settings Configuration		Help Item
1st Boot Device	[1st FLOPPY DRIVE]	Specifies the boot sequence from the available devices.
2nd Boot Device	[CD/DVD:SS-ASUS CD-]	
3rd Boot Device	[HDD:SM-QUANTUM FIR]	
4th Boot Device	[Network: B3 D0 Yuko]	
▶ Hard Disk Drives	[Press Enter]	A device enclosed in parenthesis has been disabled in the corresponding type menu.
▶ Removable Drives	[Press Enter]	
▶ CD/DVD Drives	[Press Enter]	
Quick Boot	[Enabled]	
Quiet Boot	[Disabled]	
Bootup Num-Lock	[On]	

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

### 1st/2nd/3rd/4th Boot Device

Use these four items to select the priority and order of the devices that your system searches for an operating system at start-up time.

## ▶ Hard Disk (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

### Hard Disk Drives

Hard Disk Drives		Help Item
1st Drive	[HDD:SM-QUANTUM FIR]	Specifies the boot sequence from the available devices.

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

## ► Removable Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.  
Removable Drives

Removable Drives	Help Item
1st Drive [1st FLOPPY DRIVE]	Specifies the boot sequence from the available devices.

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

## ► CD/DVD Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.  
CD/DVD Drives

CD/DVD Drives	Help Item
1st Drive [CD/DVD]	Specifies the boot sequence from the available devices.

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

### **Quick Boot (Enabled)**

If you enable this item, the system starts up more quickly by skip some of the power on test routines.

### **Quiet Boot (Disabled)**

If enabled, BIOS will show a full screen logo at boot; if disabled, BIOS will set the initial display mode to BIOS and show the diagnostic POST screen at boot.

### **Boot Up NumLock (On)**

This item defines if the keyboard Num Lock key is active when your system is

started.

Press <Esc> to return to the Boot Configuration Features page.

### 3.3-3 Advanced BIOS Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

Advanced BIOS Features

Advanced Settings	Help Item
▶ CPU Configuration [Press Enter]	Configure CPU
▶ Floppy Configuration [Press Enter]	
▶ IDE Configuration [Press Enter]	
▶ SuperIO Configuration [Press Enter]	
▶ Remote Access Configuration [Press Enter]	
▶ Voltage Adjustment [Press Enter]	

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

### ▶ CPU Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

CPU Configuration

CPU Configuration	Help Item
Manufacturer : Intel	Sets the ratio between CPU Core Clock and the FSB Frequency. Note: If a invalid ratio has been entered to this field. BIOS will restore it to previous state.
Brand String : Genuine Intel(R) CPU 3.00GHz	
Frequency : 3.00GHz	
FSB Speed : 800MHz	
Cache L1 : 16KB	
Cache L2 : 1024KB	
Ratio Status : Unlocked (Max: 15, Min: 14)	
Ratio Actual Value: 15	
Ratio CMOS Setting [15]	
Hyper Threading Technology [Disabled]	
Max CPUID Value limit [Disabled]	
CPU TM function [TM1]	

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

### Manufacturer/Brand String/Frequency/FSB Speed

These are display-only fields and display the information of current manufacturer, brand of the CPU, frequency and Front Side Bus of the CPU installed in your computer.

### Cache L1/L2

These items show the actual CPU internal level 1/2 cache size.

### Ratio Status/Ratio Actual Value

These items show the ratio status (Locked or unlocked) and the actual ratio of the CPU installed in your system.

### Ratio CMOS Setting (15)

This item sets the ratio between CPU Core Clock and the FSB Frequency. Users please note that if a invalid ratio has been entered to this field, BIOS will restore it to previous state.

### Hyper Threading Technology (Disabled)

This item is only available when the chipset supports Hyper-Threading and you are using a Hyper-Threading CPU.

### Max CPUID Value Limit (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When supports Prescott and LGA775 CPUs, enables this item to prevent the system from “rebooting” when trying to install Windows NT4.0.

### CPU TM function (TMI)

This item displays CPU's temperature and enables you to set a safe temperature to CPU.

Press <Esc> to return to the *Advanced BIOS Features* page.

## ► Floppy Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

Floppy Configuration

Floppy Configuration	Help Item
Floppy A [1.44 MB 3 1/2"]	Select the type of floppy drive connected to the system.

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

### Floppy A( 1.44 MB 3 1/2)

Use this item to set up size and capacity of the floppy diskette drive(s) installed in the systems.

Press <Esc> to return to the *Advanced BIOS Features* page.

## ► IDE Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

### IDE Configuration

IDE Configuration		Help Item
ATA/IDE Configuration	[Compatible]	Options Disabled Compatible Enhanced
Legacy IDE Channels	[SATA Pri, PATA Sec]	
▶ Primary IDE Master	[Not Detected]	
▶ Primary IDE Slave	[Not Detected]	
▶ Secondary IDE Master	[Hard Disk]	
▶ Secondary IDE Slave	[CD/DVD ROM]	
Hard Disk Write Protect	[Disabled]	
IDE Detect Time Out (Sec)	[35]	
ATA (PI) 80Pin Cable Detect	[Host]	

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

### ATA/IDE Configuration (Compatible)

The ATA/IDE option can be configured as “Disabled”, “Compatible (default)” and “Enhanced” in the BIOS configuration. Windows\* 98SE and Windows\* Me operating systems do not support Enhanced mode IDE/Serial ATA resources for more than four devices. If the ATA/IDE option is set to Enhanced mode, the operating installation will not be able to recognize the drive, and the installation will fail. Before installing 98SE or Me, the ATA/IDE configuration must be changed from Enhanced to Compatible mode.

### IDE Channels (SATA Pri, PATA Sec)

Use this item to set up the primary and secondary sequence of IDE channels and SATA channel. If set ATA/IDE Configuration to Compatible mode and IDE channels to SATA Pri/PATA Sec, users can only plug in SATA devices on SATA1 and SATA2; if set ATA/IDE Configuration to Compatible mode and IDE channels as SATA Sec/PATA Pri, users can only plug in SATA devices on SATA3 and SATA4 or else SATA devices will not be recognized. If set ATA/IDE Configuration to Enhanced mode, then SATA devices can be plugged into any SATA connector.

### Primary/Secondary IDE Master/Slave(Not detected/Hard Disk/CD/DVD ROM)

Your computer has one IDE channel and can be installed with one or two devices (Master and Slave). In addition, this motherboard supports six SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.

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

### Hard Disk Write Protect (Disabled)

Use this item to enable or disable hard disk write protection.

### IDE Detect Time Out (35)

This item allows you to set time out for IDE detection.

### ATA (PI) 80Pin Cable Detect (Host)

This item allows you to select the mechanism for detecting 80Pin ATA(PI) Cable.

Press <Esc> to return to the Advanced BIOS Features page.

## ► SuperIO Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

SuperIO Configuration

SuperIO Configuration		Help Item
OnBoard Floppy Controller	[Enabled]	
Serial Port1 Address	[3F8/IRQ4]	
OnBoard IR Port	[Disabled]	
Parallel Port Address	[378]	
Parallel Port Mode	[ECP]	
ECP Mode DMA Channel	[DMA3]	
Parallel Port IRQ	[IRQ7]	Allows BIOS to Enable or Disable Floppy Controller

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

### **Onboard Floppy Controller (Enabled)**

Use this item to enable or disable the onboard floppy disk drive interface. The bios will automatically detect the existence of floppy.

### **Serial Port1 Address (3F8/IRQ4)**

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

### **OnBoard IR Port (Disabled)**

Use this item to select IR Port Address.

### **Parallel Port Address (378)**

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

### **Parallel Port Mode(ECP)**

Use this item to select the parallel port mode.

### **ECP Mode DMA Channel (DMA3)**

This item assigns a DMA channel to the parallel port. The options are 0, 1, and 3.

### **Parallel Port IRQ (IRQ7)**

Use this item to assign IRQ to the parallel port.

*Press <Esc> to return to the Advanced BIOS Features page.*

## ► Remote Access Configuration (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

Remote Access Configuration

Remote Access Configuration		Help Item
Remote Access	[Enabled]	
Serial port number	[COM1]	
Serial Port Mode	[115200 8, n, 1]	
Flow Control	[None]	
Redirection After BIOS POST	[Always]	
Terminal Type	[ANSI]	
VT-UTF8 Combo key Support	[Enabled]	
Sredir Memory Display delay	[No Delay]	
		Allows BIOS to Enable or Disable Floppy Controller

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

### Remote Access (Enabled)

This item allows to enable/disable Remote Access function.

### Serial port number (COM1)

This item selects the Serial Port for console redirection.

### Serial Port Mode (11520 8, n, 1)

This item selects Serial Port Settings.

### Flow Control (None)

This item selects Flow Control for console redirection.

### Redirection After BIOS POST (Always)

If sets to Disable, it turns off the redirection after POST; if sets to Boot Loader, redirection is active during POST and during Boot Loader; if sets to Always, redirection is always active. Please note that some OSs may not work if sets to Always.

### Terminal Type (ANSI)

This item selects the target terminal type.

### VT-UTF8 Combo Key Support (Enabled)

Enable this item if the target terminal needs to emulate UTF8 combination keys.

### Sredir Memory Display delay (No Delay)

This item gives the delay in seconds to display memory information.

Press <Esc> to return to the Advanced BIOS Features page.

## ► Voltage Adjustment

Scroll to this item and press <Enter> to view the following screen:

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.  
Voltage Adjustment

CPU Vcore Voltage	[Auto]	Help Item
DIMM Voltage	[Normal]	
NB Vcore Voltage	[Normal]	
		Options
		Auto
		1.6000V
		1.5875V
		1.5750V
		1.5625V
		1.5500V
		1.5375V
		1.5250V
		1.5125V
		1.5000V
		1.4875V
		1.4750V
		1.4625V
		1.4500V
		1.4375V

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

### CPU Vcore Voltage (Auto)

This item allows you to adjust the processor's core voltage to give it a small boost.

### DIMM Voltage (Normal)

This item allows you to adjust memory's voltage.

### NB Vcore Voltage (Normal)

This item allows you to adjust Northbridge's voltage.

Press <Esc> to return to the Advanced BIOS Features page.

## 3.3-4 Advanced Chipset Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.  
Advanced Chipset Features

Advanced Chipset Settings	Help Item
DRAM Frequency [Auto]	
Configure DRAM Timing by SPD [Enabled]	Options
	Auto
	533 MHz
	667 MHz
Boots Graphic Adapter Priors [PEG/PCI]	
Onboard Device	
Auto Detect PCI CLK [Enabled]	
Spread Spectrum [Enabled]	
Legacy USB Support [Enabled]	
Intel 82573E [Enabled]	
Intel 82573E Boot ROM [Disabled]	
Audio Controller [Enabled]	
Realtek RTL8110S [Enabled]	
Realtek RTL8110S Boot ROM [Enabled]	
1394 Device [Enabled]	

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

### **DRAM Frequency (Auto)**

This item determines frequency of DRAM memory.

### **Configure DRAM Timing by SPD (Enabled)**

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during memory configuration.

### Boots Graphic Adapter Priori (PEG/PCI)

This item allows you to choose which graphics controller to use as the primary boot device.

### Auto Detect PCI CLK (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM and PCI slots.

### Spread Spectrum (Enabled)

This item enables or disables the Spread Spectrum.

### Legacy USB Support (Enabled)

This item allows you to enable or disable Legacy USB support.

### Intel 82573E (Enabled)

Enables and disables the onboard Intel 82573E LAN Device.

### Intel 82573E Boot ROM (Disabled)

This item allows you to enable or disable the onboard Intel 82573E LAN Boot ROM function.

### AUDIO Controller (Enabled)

Enables and disables the Audio controller.

### Realtek RTL8100S (Enabled)

Enables and disables the onboard Realtek RTL8110S LAN Device.

### Realtek RTL 8110S Boot ROM (Enabled)

This item allows you to enable or disable the onboard Realtek RT8110S LAN Boot ROM function.

### 1394 Device (Enabled)

Enables and disables the 1394 function.

## 3.3-5 Power Management Features

This option displays basic information about your system.

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### Power Management Features

		Help Item
Suspend mode	[Auto]	
Power Management/APM	[Enabled]	
Repost Video on S3 Resume	[No]	
PS/2 Keyboard Wakeup	[Disabled]	Select the ACPI state used for System Suspend
PS/2 Mouse Wakeup	[Disabled]	
Suspend Time Out	[Disabled]	
Power Button Mode	[On/Off]	
Restore on AC Power Loss	[Last State]	
Resume On Ring	[Disabled]	
Resume On PME#	[Disabled]	
USB Device Wakeup From S3	[Disabled]	
Resume On RTC Alarm	[Disabled]	

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

### Suspend mode (Auto)

Use this item to define how your system suspends. In the default, S1 (POS), the suspend mode is equivalent to a software power down. If you select S3 (STR), the suspend mode is suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.

### Power Management/APM (Enabled)

Use this item to enable or disable a power management scheme. If you enable power management, you can use the items below to set the power management operation. Only APM is supported.

### Repost Video on S3 Resume (No)

This item determines whether to invoke VGA BIOS post on S3/STR resume.

### PS/2 Keyboard/Mouse Wakeup (Disabled)

These items enable or disable you to allow keyboard or mouse activity to awaken the system from power saving mode.

### Suspend Time Out (Disabled)

This sets the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

### Power Button Mode (On/Off)

This item lets you install a software power down controlled by the normal power button on your system.

### Restore on AC Power Loss (Last State)

This item defines how the system will act after AC power loss during system operation. When you set to Off, it will keep the system in Off state until the power button is pressed.

### Resume On Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

### Resume On PME#(Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

### USB Device Wakeup From S3 (Disabled)

This item allows you to enable/disable the USB device Wakeup function from S3 mode.

### Resume On RTC Alarm (Disabled)

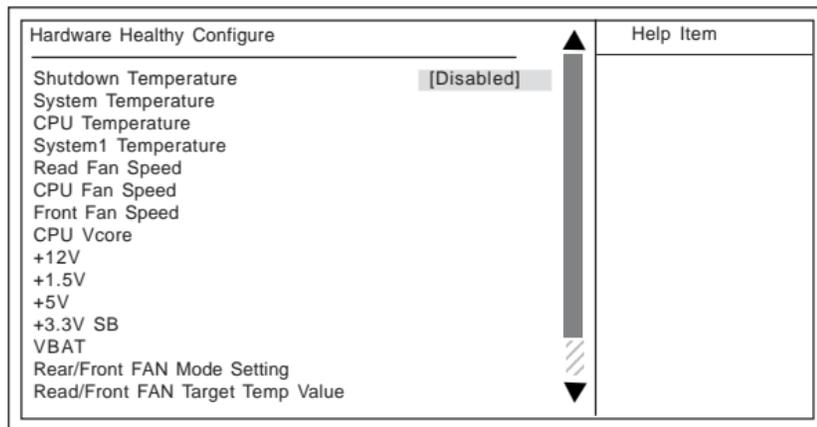
The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

## 3.3-6 Hardware Health Features

This option displays basic information about your system.

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Hardware Health Features



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

### **Shutdown Temperature (Disabled)**

If system temperature exceed the selected temperature, the system will Shutdown automatically.

### **System Component Characteristics**

These fields provide you with information about the systems current operating status. You cannot make changes to these fields.

- **System/CPU/System1 Temperature**
- **Rear Fan/CPU Fan/Front Fan Speed**
- **CPU Vcore**
- **+12V**
- **+1.5V**
- **+5V**
- **+3.3V SB**
- **VBAT**

### **Rear/Front FAN Mode Setting (Smart FAN1 Mode)**

This item configures the FAN mode setting.

### **Rear/Front FAN Target Temp Value (040)**

This item sets the Rear/Front FAN Target Temperature value in degree C, Minimum value is 025, Maximum value is 50, please input Dec number.

### **Rear/Front FAN Tolerance Value (03)**

This item sets the Rear/Front FAN Tolerance value, Minimum value is 00, Maximum value is 15, please input Dec number.

### **Rear/Front FAN StartUp Value (007)**

This item sets the Rear/Front FAN Start up Value, Minimum value is 00, Maximum value is 255, please input Dec number.

### **Rear/Front FAN Stop Value (001)**

This item sets the Rear/Front FAN Stop Value, Minimum value is 01, Maximum value is 255, please input Dec number.

### **CPUFAN2 Mode Setting (Smart FAN3 Mode)**

This item configures the CPUFAN mode setting.

### **CPUFAN2 Tmin(050)**

This item sets the CPUFAN Target speed value, value ranges from 50 to 55, please input Dec number.

### **CPUFAN2 Tmax(064)**

This item sets the CPUFAN Target speed value, value ranges from 55 to 70, please input Dec number.

### 3.3-7 BIOS Security Features

This option displays basic information about your system.

CMOS Setup Utility - Copyright (c) 1985-2004, American Megatrends, Inc.

#### BIOS Security Features

Security Settings	Help Item
Supervisor Password : Not Installed User Password : Not Installed	Install or Change the password.
Change Supervisor Password [Press Enter] Change User Password [Press Enter]	
Boot Sector Virus Protection [Disabled]	

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

#### Supervisor Password/User Password (Not Installed)

This item indicates whether a supervisor password/user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

#### Change Supervisor Password/Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

#### Boot Sector Virus Protection (Disabled)

If set to Disabled, when anything attempts to access the boot sector or hard disk partition table, there will be no warning message to appear.

### 3.3-8 Load Optimized Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <Y> and then <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The optimized defaults place demands on the system that may be greater than the performance level of the components, such as the CPU and the memory. When your hardware does not support the “Optimized Defaults”, fatal system errors or instability may occur. If you only want to install setup defaults for a specific option, select and display that option, and then press <F7>.



*Users please remain the factory BIOS default setting of “Load Optimized Defaults” when install Operation System onto your system.*

### 3.3-9 Load Performance Defaults

If you select this item and press Enter a dialog box will appear. If you select [OK], and then Enter, the Setup Utility loads a set of performance default values. These default settings are quite demanding and your system might not function properly if you are using slower CPU, memory, or other low-performance components.



*Warning: To load Performance settings may make your system become unstable or unbootable. When loading the Performance Defaults fails, users can choose “either” step to return the motherboard to its default BIOS:*

- 1. Power on the system and press “PageUp” key. The system will bypass the previous BIOS setting and automatically reload the default BIOS. (This procedure is BIOS setup only!)*
- 2. Apply to the jumper setting reference onboard and proceed with the “Clear CMOS” to recover the default BIOS setting. Please refer to Chapter 1, page 1-13, to complete the clear CMOS action. (This procedure requires opening the chassis!)*

### **3-3-10 Save Changes and Exit**

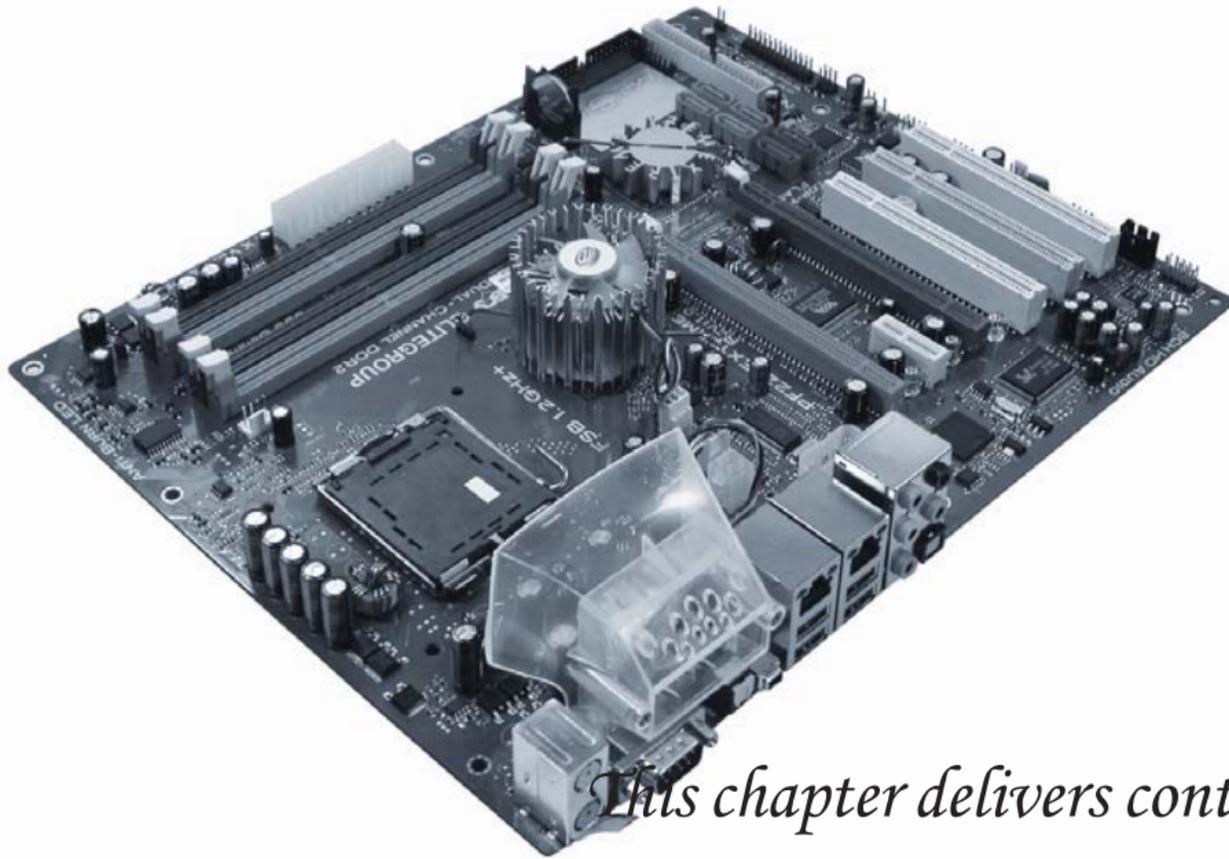
Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, press <OK> to save and exit, or press <Cancel> to return to the main menu:

### **3-3-11 Discard Changes and Exit**

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, press <OK> to discard changes and exit, or press <Cancel> to return to the main menu.



*If you have made settings that you do not want to save, use the “Discard Changes and Exit” item and press <OK> to discard any changes you have made.*



*This chapter delivers contents of the ECS support CD.*

## Reference

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4.2	Running the Software CD.....	4-1
4.3	Setup Tab.....	4-1
4.4	Application Tab.....	4-2
4.5	Read Me Tab.....	4-2
4.6	Software Utilities Introduction.....	4-2

## 4.1 Software CD Information

The support software CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

**Note:** The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center “before” installing HD audio driver bundled in the driver CD. Please log on to <http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto> for more information.

## 4.2 Running the Software CD

To begin using the software CD, simply insert the CD into your CD-ROM drive. The CD automatically display the multimedia if auto run is enable in your computer.



## 4.3 Setup Tab

The setup tab shows three buttons - **Setup**, **Browse CD**, **Exit**.

**Setup button:** Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.

1. *Click **Setup**. The installation program begins:*



**Note:** The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

The motherboard identification is located in the upper left-hand corner.

2. Click **Next**. The following screen appears:



3. Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

**Browse CD button:** The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.

**Exit button:** The **Exit** button closes the Auto Setup window.

## 4.4 Application Tab

Lists the software utilities that are available on the CD.

## 4.5 Read Me Tab

Displays the path for all software and drivers available on the CD.

## 4.6 Software Utilities Introduction

### *AMI Flash Utility*

This utility lets you erase the system BIOS stored on a Flash Memory chip on the motherboard, and lets you copy an updated version of the BIOS to the chip. Proceed with caution when using this program. If you erase the current BIOS and fail to write a new BIOS, or write a new BIOS that is incorrect, your system will malfunction. Refer to Chapter 3 “Using BIOS” for more information.

### *WinFlash Utility*

The AWARD WinFlash utility is a Windows version of the DOS Award BIOS flash writer utility. The utility enables you to flash the system BIOS stored on a Flash Memory chip on the motherboard while in a Windows environment. This utility is currently available for WINXP\2000. To install the WinFlash utility, run WINFLASH.EXE from the following directory: \UTILITY\WINFLASH

## ***I'm InTouch***

I'm InTouch remote access software allows you to login and work on your far-away computer, just as if you were sitting behind it! Run programs, transfer files, manage e-mail, contacts and calendar events. With I'm InTouch, you always have access to your PC and the important information and programs that you need.

## ***WinCinema***

### ■ **WinDVD Creator Plus**

WinDVD Creator Plus is designed for people who want to make their own DVDs but who don't want to learn complicated programs. By taking you through 4 DVD-making steps, WinDVD Creator Plus walks you through capturing video, editing it, adding titles, transitions, effects, music, DVD menus and finally burning the finished product. User also can direct-burn to DVD when DVD burner is available.

### ■ **WinDVD**

WinDVD is the world's most popular DVD player and supports over 30 new features and enhancements such as improved picture quality, easier-to-use Time-Stretching, MP3 playback, and Video Desktop - which lets you watch movies under your desktop icons while you work or check email.

### ■ **WinRIP**

WinRIP lets you record, store, organize, and enjoy you music collection - on your PC, CD player, and portable player. Organize your Music Gallery and create your own playlists. You can switch between simple Player mode or full-featured Jukebox mode.

## ***Pro Magic Plus***

This amazing software not only provides users with convenient and instant restoration of your computer, but also restores within seconds important data back to the preferred state at a specific point in time. Pro Magic also combines several other functions including anti-virus, backup, uninstall software and multi-booting to satisfy all your system protection needs.

## ***DPU (Data Process Utility)***

Specially designed for file protection, security and management this DPU or data processing utility insures the safety of important data through complete file restoration, eliminating file damage even in case of improper operation. User can freely edit original files after a set restore time point. The DPU can even restore even deleted files.

## ***Adobe Reader***

This item install the Adobe Acrobat Reader. The Acrobat Reader software is for viewing files saved in Portable Document Format (PDF).

### **Show Shifter**

ShowShifter, the award winning software, combines viewing TV, video, CD, MP3 and digital pictures into one easy to use application. With a little help from Showshifter your PC will be the ultimate home media center.

### **EC Sonic**

#### ■ **H/W Monitor**

H/W Monitor is a self-diagnostic utility for PC system. It will protect PC hardware by monitoring several critical items including power supply voltage, CPU Fan speed, and CPU & System temperature. These are all important to Windows System. Some errors maybe result in permanent hurt of your system. User could set the reasonable range. Once when system monitors some being out of range, an obvious warning or beeping message will remind users to make a proper treatment. H/W Monitor only supports Window 2000/XP.

#### ■ **Over Clocking**

Over Clocking is a utility that allow users to over clock your CPU speed. It only supports Windows 2000/XP.

#### ■ **EZ-Flash**

EZ-Flash provide users an easy-to-use tool which can maintain the BIOS easily. Also, it has two major functions, one is to save the current BIOS, the other is to update a new BIOS. It only supports Windors 2000/XP.

#### ■ **EZ-Logo**

User can build their own BIOS image which will display a customized picture at the boot-up time. EZ-Logo only supports Windows 2000/XP which is an application to make a rom file.

## Résumé des caractéristiques

CPU	<ul style="list-style-type: none"><li>• Socket LGA775 pour processeur Intel Pentium/PentiumD Extreme Edition/ Pentium 4 Extreme Edition</li><li>• Prend en charge jusqu'au FSB 1066/800MHz</li><li>• Prise en charge de la Technologie Hyper-Threading</li></ul>
Chipset	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Mémoire	<ul style="list-style-type: none"><li>• Architecture mémoire DDR2 double canal</li><li>• 4 x sockets DIMM DDR2 240 broches prenant en charge jusqu'à 8 Go</li><li>• Prend en charge les DDR2 667/533</li><li>• DIMM DDR de 1,8V sans tampon, ECC &amp; Non-ECC</li><li>• Supporte Intel MPT (Memory Pipeline Technology)</li></ul>
Options d'extension	<ul style="list-style-type: none"><li>• 2 x PCI Express x16</li><li>• 1 x PCI Express x1</li><li>• 3 x logements PCI</li></ul>
Stockage	<ul style="list-style-type: none"><li>• Pris en charge par ICH7R</li><li>- 2 x périphériques Ultra DMA100/66</li><li>- 4 x périphériques SATAII avec Intel Matrix Storage</li><li>- Configuration RAID 0, RAID 1, RAID 10, RAID 5</li></ul>

	<ul style="list-style-type: none"><li>• Pris en charge par SiI3132</li><li>- 2 x périphériques SATAII</li><li>- Support RAID 0, RAID 1 &amp; e-SATA &amp; PM</li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Contrôleur VIA IEEE1394a</li><li>• Prend en charge 2 x ports IEEE1394a</li></ul>
Audio	<ul style="list-style-type: none"><li>• CODEC audio 8-canaux</li><li>• Conforme avec Intel HD (Haute définition) Audio</li></ul>
LAN Double	<ul style="list-style-type: none"><li>• Contrôleur LAN Giga LAN Intel PCI-E</li><li>• Contrôleur LAN Giga Realtek</li></ul>
E/S du panneau arrière	<ul style="list-style-type: none"><li>• 1 x connecteur de clavier PS/2</li><li>• 1 x connecteur souris PS/2</li><li>• 4 x ports USB</li><li>• 2 x connecteurs LAN RJ45</li><li>• 1 x port 1394a</li><li>• 1 x port Série (COM1)</li><li>• 1 x sortie SPDIF numérique</li><li>• 1 x entrée SPDIF numérique</li><li>• Connecteurs Sortie Ligne/Entrée Ligne/Microphone</li></ul>
Caractéristiques du BIOS	<ul style="list-style-type: none"><li>• AMI BIOS avec ROM Flash de 4Mb</li><li>• Prend en charge Plug &amp; Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Prend en charge les spécifications 1.0 révision ACPI</li></ul>

E/S interne	<ul style="list-style-type: none"><li>• 1 x Connecteur d'alimentation ATX 24 broches &amp; Connecteur 12 V 8 broches</li><li>• 1 x connecteur de lecteur de disquette- prenant en charge 360K ~ 2,88M octets, 3 Lecteurs de disquettes Modes ou LS120</li><li>• 1 x connecteur IDE</li><li>• 6 x connecteurs ATA Série</li><li>• 2 x embases USB 2.0 supportant 4 ports USB supplémentaires</li><li>• 1 x embase 1394a</li><li>• 1 x embase d'entrée CD</li><li>• 1 x embase de commutateur/LED de panneau avant</li><li>• 1 x embase audio de panneau avant</li><li>• 1 x embase LPT</li><li>• 1 x embase CHS1</li><li>• 1 x Connecteur auxiliaire 4 broches +12V</li><li>• 1 x Embase de haut-parleur</li><li>• 1 x Embase IrDA pour SIR</li><li>• 1 x connecteur CUFAN/1 x NBFAN/1 x SYSFAN</li></ul>
Facteur de Forme	<ul style="list-style-type: none"><li>• Taille ATX</li><li>• 305mm x 244mm</li></ul>

## Zusammenfassung der Merkmale

CPU	<ul style="list-style-type: none"> <li>LGA775 Sockel für Intel Pentium/PentiumD Extreme Edition/Pentium 4 Extreme Edition Prozessor</li> <li>Unterstützt bis zu 1066/800 MHz FSB</li> <li>Unterstützt Hyper-Threading Technologie</li> </ul>
Chipsatz	<ul style="list-style-type: none"> <li>Intel 955X &amp; ICH7R</li> <li>North Bridge: Intel 955X</li> <li>South Bridge: Intel ICH7R</li> </ul>
Arbeitsspeicher	<ul style="list-style-type: none"> <li>Dual-Kanal DDR2 Speicherarchitektur</li> <li>4 x 240-Pin DDR2 DIMM Sockel, unterstützt bis zu 8 GB</li> <li>Unterstützt DDR2 667/533</li> <li>ECC &amp; Nicht-ECC, ungepufferte 1.8V DDR DIMMs</li> <li>Unterstützt Intel MPT (Memory-Pipeline-Technologie)</li> </ul>
Erweiterungsmöglichkeiten	<ul style="list-style-type: none"> <li>2 x PCI Express x16</li> <li>1 x PCI Express x1</li> <li>3 x PCI Steckplätze</li> </ul>
Speicher	<ul style="list-style-type: none"> <li>Unterstützt durch einen ICH7R</li> <li>- 2 x Ultra DMA100/66 Geräte</li> <li>- 4 x SATAII-Geräte mit Intel Matrix Storage</li> <li>-RAID 0, RAID 1, RAID 10, RAID 5 Konfiguration</li> </ul>

	<ul style="list-style-type: none"> <li>Unterstützt durch einen SiI3132</li> <li>-2 x SATAII Geräte</li> <li>-Unterstützung für RAID 0, RAID 1 &amp; e-SATA &amp; PM</li> </ul>
IEEE 1394a	<ul style="list-style-type: none"> <li>VIA IEEE1394a Controller</li> <li>Unterstützt 2 x IEEE1394a Anschlüsse</li> </ul>
Audio	<ul style="list-style-type: none"> <li>8-Kanal Audio CODEC</li> <li>Entspricht Intel HD- (High Definition) Audio</li> </ul>
Dual LAN	<ul style="list-style-type: none"> <li>Intel PCI-E Giga LAN-Controller</li> <li>Realtek Giga LAN-Controller</li> </ul>
Rear panel I/O	<ul style="list-style-type: none"> <li>1 x PS/2 Tastaturanschluss</li> <li>1 x PS/2 Mausanschluss</li> <li>4 x USB Anschlüsse</li> <li>2 x RJ45 LAN Anschlüsse</li> <li>1 x 1394a-Anschluss</li> <li>1 x Seriellanschluss (COM1)</li> <li>1 x Digital SPDIF Ausgang</li> <li>1 x Digital SPDIF Eingang</li> <li>Line-out/Line-in/Microphone in Anschlüsse</li> </ul>
BIOS Merkmale	<ul style="list-style-type: none"> <li>AMI BIOS mit 4Mb Flash ROM</li> <li>Unterstützt Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li> <li>Unterstützt ACPI Revision 1.0 Spezifikation</li> </ul>

Internes I/O	<ul style="list-style-type: none"><li>• 1 x 24-Pin ATX Netzteilanschluss &amp; 8-Pin 12 V Anschluss</li><li>• 1 x Floppylaufwerkanschluss, unterstützt 360K ~ 2.88M Bytes, 3 Modus Festplatten oder LS120</li><li>• 1 x IDE Anschlüsse</li><li>• 6 x Seriell ATA Anschluss</li><li>• 2 x USB 2.0 Anschluss, unterstützt zusätzlich 4 USB Anschluss</li><li>• 1 x 1394a-Anschluss</li><li>• 1 x CD-in Header</li><li>• 1 x Schalter in der Frontabdeckung/LED-Anschluss</li><li>• 1 x Audioanschluss in der Frontabdeckung</li><li>• 1 x LPT Anschluss</li><li>• 1 x CHS1 Anschluss</li><li>• 1 x Zusätzlicher 4-Pin +12V Anschluss</li><li>• 1 x Lautsprecher-Header</li><li>• 1 x IrDA für SIR-Header</li><li>• 1 x CPUFAN/1- x NBFAN/1- x SYSFAN-Anschlüsse</li></ul>
Formfaktor	<ul style="list-style-type: none"><li>• ATX-Größe</li><li>• 305mm x 244mm</li></ul>

## Indice delle caratteristiche

CPU	<ul style="list-style-type: none"><li>• LGA775 Socket per processore Intel Pentium/Pentium D Extreme Edition/Pentium 4 Extreme Edition</li><li>• Supporto di FSB fino a 1066/800 MHz</li><li>• Supporto di Tecnologia Hyper-Threading</li></ul>
Chipset	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Memoria	<ul style="list-style-type: none"><li>• Dual-channel DDR2 memory architecture</li><li>• 4 240-pin DDR2 DIMM socket che supportano sino a 8 GB</li><li>• Supporta DDR2 667/533</li><li>• DIMM DDR a 1,8 V senza buffer, ECC e non ECC</li><li>• Supporto di MPT (Memory Pipeline Technology) Intel</li></ul>
Opzioni d'espansione	<ul style="list-style-type: none"><li>• 2 PCI Express x16</li><li>• 1 PCI Express x1</li><li>• 3 slots PCI</li></ul>
Deposito	<ul style="list-style-type: none"><li>• Supportato da ICH7R<ul style="list-style-type: none"><li>- 2 dispositivi Ultra DMA100/66</li><li>- 4 dispositivi SATAII con tecnologia Intel Matrix Storage</li><li>- Configurazione RAID 0, RAID 1, RAID 10, RAID 5</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• Supportato da SiI3132<ul style="list-style-type: none"><li>- 2 dispositivi SATA</li><li>- Supporto di RAID 0, RAID 1 e e-SATA e PM</li></ul></li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Controller VIA IEEE1394a</li><li>• Supporta 2 porte IEEE1394a</li></ul>
Audio	<ul style="list-style-type: none"><li>• 8-canale audio CODEC</li><li>• Conforme a Intel HD (High Definition) Audio</li></ul>
Doppia LAN	<ul style="list-style-type: none"><li>• Controller LAN PCI-E Giga Intel</li><li>• Controller LAN Giga Realtek</li></ul>
Pannello posteriore I/O	<ul style="list-style-type: none"><li>• 1 connettore tastiera PS/2</li><li>• 1 connettore mouse PS/2</li><li>• 4 porte USB</li><li>• 2 connettori RJ45 LAN</li><li>• 1 porta 1394a</li><li>• 1 porta Seriale (COM1)</li><li>• 1 output SPDIF digitale</li><li>• 1 input SPDIF digitale</li><li>• Connettori linea-out/linea-in/microfono in</li></ul>
Caratteristiche BIOS	<ul style="list-style-type: none"><li>• BIOS AMI con 4Mb Flash ROM</li><li>• Supporta Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Supporta specifiche di revisione ACPI 1.0</li></ul>

I/O interno	<ul style="list-style-type: none"><li>• 1 x connettore di alimentazione 24-pin ATX e connettore 8-pin da 12 V</li><li>• 1 connettore floppy - supporta 360K ~ 2,88M Byte, 3 Mode FDDs o LS120</li><li>• 1 connettore IDE</li><li>• 6 connettori Seriali ATA</li><li>• 2 supporti header USB 2.0 con 4 porte USB supplementari</li><li>• 1 1394a header</li><li>• 1 testata CD-In</li><li>• 1 interruttore del pannello frontale /LED header</li><li>• 1 pannello frontale header audio</li><li>• 1 LPT header</li><li>• 1 CHS1 header</li><li>• 1 connettore a +12 V a 4 pin ausiliario</li><li>• 1 testata altoparlanti</li><li>• 1 testata IrDA per SIR</li><li>• Connettori: 1 x CPUFAN / 1 x NBFAN / 1 x SYSFAN</li></ul>
Form Factor	<ul style="list-style-type: none"><li>• Dimensione -ATX</li><li>• 305mm x 244mm</li></ul>

## Resumen de Características

CPU	<ul style="list-style-type: none"><li>• LGA775 Socket para procesador Intel Pentium/Pentium D Extreme Edition/Pentium 4 Extreme Edition</li><li>• Soporta hasta 1066/800 MHz FSB</li><li>• Soporte Hyper-Threading Technology</li></ul>
Chipset	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Memoria	<ul style="list-style-type: none"><li>• Arquitectura de memoria DDR2 Canal Dual</li><li>• 4 x zócalos 240-pin DDR2 DIMM soporta hasta 8 GB</li><li>• Soporta DDR2 667/533</li><li>• ECC &amp; No-ECC, 1.8V DDR DIMMs sin buffer</li><li>• Soporta Intel MPT (Memory Pipeline Technology/ Tecnología de Tubos de Memoria)</li></ul>
Opciones de expansión	<ul style="list-style-type: none"><li>• 2 x PCI Express x16</li><li>• 1 x PCI Express x1</li><li>• 3 x ranuras PCI</li></ul>
Almacenaje	<ul style="list-style-type: none"><li>• Soportado por ICH7R<ul style="list-style-type: none"><li>- 2 x dispositivos Ultra DMA100/66</li><li>- 4 x dispositivos SATAII con Intel Matrix Storage (Almacenaje de Matriz Intel)</li><li>- Configuración RAID 0, RAID 1, RAID 10, RAID 5</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• Soportado por SiI3132<ul style="list-style-type: none"><li>- 2 x dispositivos SATAII</li><li>- Soporte RAID 0, RAID 1 &amp; e-SATA &amp; PM</li></ul></li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Controlador VIA IEEE1394a</li><li>• Soporta 2 x puertos IEEE1394a</li></ul>
Audio	<ul style="list-style-type: none"><li>• 8-canales audio CODEC</li><li>• Conformidad de Intel HD (Alta Definición) Audio</li></ul>
Dual LAN	<ul style="list-style-type: none"><li>• Controlador LAN Intel PCI-E Giga</li><li>• Controlador LAN Realtek Giga</li></ul>
I/O del panel trasero	<ul style="list-style-type: none"><li>• 1 x conector de teclado PS/2</li><li>• 1 x conector de ratón PS/2</li><li>• 4 x puertos USB</li><li>• 2 x conectores RJ45 LAN</li><li>• 1 x puerto 1394a</li><li>• 1 x puerto Serial (COM1)</li><li>• 1 x salida SPDIF Digital</li><li>• 1 x entrada SPDIF Digital</li><li>• Conectores Line-out/Line-in/Micrófono</li></ul>
Características de BIOS	<ul style="list-style-type: none"><li>• AMI BIOS con 4Mb Flash ROM</li><li>• Soporta Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Soporta especificación ACPI revisión 1.0</li></ul>

I/O Interno	<ul style="list-style-type: none"><li>• 1 x Conector de Suministro 24-pin ATX &amp; Conector 8-pin 12 V</li><li>• 1 x conector Floppy - soporta 360K ~ 2.88M Bytes, FDD de 3 Modos o LS120</li><li>• 1 x conector IDE</li><li>• 6 x conectores Serial ATA</li><li>• 2 x cabezales USB 2.0 soporta 4 puertos USB adicionales</li><li>• 1 x cabezal 1394a</li><li>• 1 x cabezal CD</li><li>• 1 x interruptor del panel frontal/cabezal LED</li><li>• 1 x cabezal de audio del panel frontal</li><li>• 1 x cabezal LPT</li><li>• 1 x cabezal CHS1</li><li>• 1 x conector auxiliar 4-pin +12V</li><li>• 1 x cabezal de Altoparlante</li><li>• 1 x IrDA para cabezal SIR</li><li>• 1 x conectores CPUFAN/1 x NBFAN/1 x SYSFAN</li></ul>
Factor de Forma	<ul style="list-style-type: none"><li>• Tamaño de ATX</li><li>• 305mm x 244mm</li></ul>

## Sumário de Características

CPU	<ul style="list-style-type: none"><li>• Tomada de parede LGA775 para processador Intel Pentium/Pentium D Extreme Edition/ Pentium 4 Extreme Edition</li><li>• Suporta até 1066 /800 MHz FSB</li><li>• Suporta Tecnologia de Hyper-Threading</li></ul>
Chipset	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Memória	<ul style="list-style-type: none"><li>• Arquitetura de memória DDR2 bicanal</li><li>• 4 x Tomada de parede 240 pinos DDR DIMM suporta até 8 GB</li><li>• Suporta DDR2 667/533</li><li>• ECC &amp; Não-ECC, 1.8V DDR DIMMs sem buffers</li><li>• Suporta Intel MPT (Tecnologia de Ligação de Memória)</li></ul>
Opções de expansão	<ul style="list-style-type: none"><li>• 2 x PCI Express x 16</li><li>• 1 x PCI Express x 1</li><li>• 3 x Ranhuras PCI</li></ul>
Armazenamento	<ul style="list-style-type: none"><li>• Suportado por ICH7R<ul style="list-style-type: none"><li>- 2 x Dispositivos Ultra DMA100/66</li><li>- 4 x dispositivos SATAII com Armazenamento Intel Matrix</li><li>- Configuração RAID 0, RAID 1, RAID 10,RAID 5</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• Suportado por SiI3132<ul style="list-style-type: none"><li>- 2 x Dispositivos SATAII</li><li>- RAID 0, RAID 1 &amp; e-SATA &amp; suporte PM</li></ul></li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Controlador VIA IEEE1394a</li><li>• Suporta 2 x portas IEEE1394a</li></ul>
Áudio	<ul style="list-style-type: none"><li>• CODEC áudio 8-canais</li><li>• Compatível com Áudio Intel HD (Alta Definição)</li></ul>
LAN duplo	<ul style="list-style-type: none"><li>• Controlador Intel PCI-E Giga LAN</li><li>• Controlador Realtek Giga LAN</li></ul>
Painel traseiro I/O	<ul style="list-style-type: none"><li>• 1 x conector de teclado PS/2</li><li>• 1 x conector de rato PS/2</li><li>• 4 x portas USB</li><li>• 2 x conectores RJ45 LAN</li><li>• 1 x porta 1394a</li><li>• 1 x porta de Série (COM1)</li><li>• 1 x Saída digital SPDIF</li><li>• 1 x Entrada digital SPDIF</li><li>• Line-out/Line-in/Conectores com entrada para microfone</li></ul>
Características BIOS	<ul style="list-style-type: none"><li>• AMI BIOS com 4Mb Flash ROM</li><li>• Suporta dispositivo Plug e Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Suporta especificação da revisão 1.0 ACPI</li></ul>

I/O interno	<ul style="list-style-type: none"><li>• 1 x Conector de Fonte de Alimentação 24 pinos ATX &amp; Conector 8 pinos 12 V</li><li>• 1 x Conector flexível - suporta 360K ~ 2.88M Bytes, FDDs de 3 Modos ou LS120</li><li>• 1 x Conector IDE</li><li>• 6 x Conectores de Série ATA</li><li>• 2 x Colector USB 2.0 suporta 4 portas USB adicionais</li><li>• 1 x Colector 1394a</li><li>• 1 x CD no cabeçalho</li><li>• 1 x Colector com interruptor/LED do painel traseiro</li><li>• 1 x Colector de áudio do painel traseiro</li><li>• 1 x Colector LPT</li><li>• 1 x Colector CHS1</li><li>• 1 x 4 pinos Auxiliares + conector 12V</li><li>• 1 x Cabeçalho de Altifalante</li><li>• 1 x IrDA para cabeçalho SIR</li><li>• 1 x CPUFAN/1 x NBFAN/1 x conectores SYSFAN</li></ul>
Coeficiente de Forma	<ul style="list-style-type: none"><li>• Tamanho ATX</li><li>• 305mm x 244mm</li></ul>

## 特徴概要

プロセッサ	<ul style="list-style-type: none"> <li>Intel Pentium/PentiumD Extreme Edition/Pentium 4 Extreme Edition プロセッサ用のLGA775 ソケット</li> <li>FSBを1066/800 MHz までサポート</li> <li>Hyper-Threading 技術対応</li> </ul>
チップセット	<ul style="list-style-type: none"> <li>Intel 955X &amp; ICH7R</li> <li>North Bridge: Intel 955X</li> <li>South Bridge: Intel ICH7R</li> </ul>
メモリ	<ul style="list-style-type: none"> <li>デュアルチャネルDDR2メモリのアーキテクチャ</li> <li>4つの240ピンDDR2 DIMMソケットで最大8 GBまでサポート</li> <li>DDR2 667/533サポート</li> <li>ECC &amp; Non-ECC非バッファ1.8V DDR DIMM</li> <li>Intel MPT (メモリ・パイプライン技術)に対応</li> </ul>
拡張スロット	<ul style="list-style-type: none"> <li>2つのPCI Express x16スロット</li> <li>1つのPCI Express x1スロット</li> <li>3つのPCI スロット</li> </ul>
保存装置	<ul style="list-style-type: none"> <li>ICH7Rチップセットがサポートするのは               <ul style="list-style-type: none"> <li>- 2つのUltra DMA100/66 デバイス</li> <li>- 4 つの SATAIIデバイス、Intel Matrix Storage技術で対応</li> <li>- RAID 0、RAID 1、RAID 10、RAID 5 の 構成</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>Sil3132がサポートするのは           <ul style="list-style-type: none"> <li>- 2つのSATAII デバイス</li> <li>- RAID 0、RAID 1 &amp; e-SATA &amp; PM の構築可能</li> </ul> </li> </ul>
IEEE 1394a	<ul style="list-style-type: none"> <li>VIA IEEE1394a コントローラ</li> <li>2つのIEEE1394a ポートをサポート</li> </ul>
オーディオ	<ul style="list-style-type: none"> <li>8チャンネルオーディオCODEC</li> <li>Intel HD (High Definition) Audioに対応</li> </ul>
デュアルLAN	<ul style="list-style-type: none"> <li>Intel PCI-E Giga LAN コントロール</li> <li>Realtek Giga LAN コントロール</li> </ul>
背面パネル入出力	<ul style="list-style-type: none"> <li>1つのPS/2 キーボードコネクタ</li> <li>1つのPS/2 マウスコネクタ</li> <li>4つのUSBポート</li> <li>2つのRJ45 LAN コネクタ</li> <li>1つの1394a ポート</li> <li>1つのシリアルポート(COM1)</li> <li>1つのデジタルSPDIF出力</li> <li>1つのデジタルSPDIF入力</li> <li>ライン出力/ライン入力/マイクロホン入力のコネクタ</li> </ul>
BIOSの諸機能	<ul style="list-style-type: none"> <li>4 Mb Flash ROM のAMI BIOS</li> <li>Plug&amp;Play 1.0A、APM 1.2、Multi Boot、およびDMIをサポート</li> <li>ACPI revision 1.0 規格に準拠</li> </ul>

内部入出力	<ul style="list-style-type: none"><li>• 1つの24ピンATX 電源サブライコネクタと8ピン12 V コネクタ</li><li>• 1つのフロッピーディスクドライブコネクタ、360Kから2.88M/バイトの3 Mode FDDとLS120をサポート</li><li>• 1つのIDEコネクタ</li><li>• 6つのシリアルATAコネクタ</li><li>• 2つのUSB 2.0ヘッダーでさらなる4つのUSBポートを増設可能</li><li>• 1つの1394a ヘッダー</li><li>• 1つのCD入力ヘッダー</li><li>• 1つの前面パネルスイッチ/LED ヘッダー</li><li>• 1つのフロントパネルオーディオヘッダー</li><li>• 1つのLPT ヘッダー</li><li>• 1つのCHS1ヘッダー</li><li>• 4ピン+12V の補助電源コネクタ</li><li>• 1つのスピーカーヘッダー</li><li>• 1つのSIR方式の IrDA ヘッダー</li><li>• CPUFAN/ NBFANのコネクタが各1つで、SYSFAN のが1つ</li></ul>
寸法	<ul style="list-style-type: none"><li>• ATXサイズ</li><li>• 305mm x 244mm</li></ul>

## 특성 요약

CPU	<ul style="list-style-type: none"> <li>인텔 펜티엄/펜티엄 D 프로세서를 위한 LGA775 소켓 Extreme Edition/펜티엄 4 Extreme Edition 프로세서</li> <li>최대 1066/800 MHz FSB 지원</li> <li>Hyper-Threading 기술 지원</li> </ul>
칩셋	<ul style="list-style-type: none"> <li>Intel 955X &amp; ICH7R</li> <li>North Bridge: Intel 955X</li> <li>South Bridge: Intel ICH7R</li> </ul>
메모리	<ul style="list-style-type: none"> <li>듀얼 채널 DDR2 메모리 아키텍처</li> <li>4 x 240 핀 DDR2 DIMM 소켓, 최대 8 GB 지원</li> <li>DDR2 667/533 지원</li> <li>ECC &amp; Non-ECC, unbuffered 1.8V DDR DIMMs</li> <li>인텔 MPT (Memory Pipeline Technology) 지원</li> </ul>
확장 옵션	<ul style="list-style-type: none"> <li>2 x PCI 익스프레스 x16</li> <li>1 x PCI 익스프레스 x1</li> <li>3 x PCI 슬롯</li> </ul>
저장	<ul style="list-style-type: none"> <li>ICH7R 지원</li> <li>- 2 x Ultra DMA100/66 장치</li> <li>- 4 x 인텔 매트릭스 스토리지를 지닌 SATAII 장치</li> <li>- RAID 0, RAID 1, RAID 10, RAID 5 구성</li> </ul>

	<ul style="list-style-type: none"> <li>SiI3132 지원</li> <li>- 2 x SATA 장치</li> <li>- RAID 0, RAID 1 &amp; e-SATA &amp; PM 지원</li> </ul>
IEEE 1394a	<ul style="list-style-type: none"> <li>VIA IEEE1394a 컨트롤러</li> <li>2 x IEEE1394a 포트 지원</li> </ul>
오디오	<ul style="list-style-type: none"> <li>8-채널 오디오 코덱</li> <li>인텔 HD (High Definition) 오디오 호환</li> </ul>
듀얼 랜	<ul style="list-style-type: none"> <li>인텔 PCI-E 기가 LAN 컨트롤러</li> <li>Realtek 기가 LAN 컨트롤러</li> </ul>
뒷 패널 I/O	<ul style="list-style-type: none"> <li>1 x PS/2 키보드 커넥터</li> <li>1 x PS/2 마우스 커넥터</li> <li>4 x USB 포트</li> <li>2 x RJ45 LAN 커넥터</li> <li>1 x 1394a 포트</li> <li>1 x 시리얼 포트 (COM1)</li> <li>1 x 디지털 SPDIF 출력</li> <li>1 x 디지털 SPDIF 입력</li> <li>라인 출력/라인 입력/마이크 폰 입력 커넥터</li> </ul>
BIOS 특성	<ul style="list-style-type: none"> <li>4Mb 플래시 ROM의 AMI BIOS</li> <li>플러그 앤 플레이 1.0A, APM 1.2, Multi Boot, DMI 지원</li> <li>ACPI 1.0 사양 지원.</li> </ul>

내부 I/O	<ul style="list-style-type: none"> <li>• 1 x 24 핀 ATX 파워 썬플라이 커넥터 및 8 핀 12 V 커넥터</li> <li>• 1 x 플로피 커넥터- 360K ~ 2.88M Bytes, 3 모드 FDD 또는 LS120 지원</li> <li>• 1 x IDE 커넥터</li> <li>• 6 x 시리얼 ATA 커넥터</li> <li>• 2 x USB 2.0 헤더, 추가적으로 4 개의 USB 포트 지원</li> <li>• 1 x 1394a 헤더</li> <li>• 1 x 헤더에 CD</li> <li>• 1 x 앞 패널 스위치/LED 헤더</li> <li>• 1 x 앞 패널 오디오 헤더</li> <li>• 1 x LPT 헤더</li> <li>• 1 x CHS1 헤더</li> <li>• Auxiliary 4 핀 1개+12V 커넥터</li> <li>• 1 x 스피커 헤더</li> <li>• 1 x SIR용 헤더용 IrDA</li> <li>• 1 x CPUFAN/1 x NBFAN/1 x SYSFAN 커넥터</li> </ul>
규격	<ul style="list-style-type: none"> <li>• ATX 사이즈</li> <li>• 305mm x 244mm</li> </ul>

## 功能摘要

中央處理器	<ul style="list-style-type: none"><li>Intel Pentium/Pentium D Extreme 版/Pentium 4 Extreme 版處理器的LGA775 插座</li><li>支援前端匯流排至1066/800 MHz</li><li>支援超執行緒(Hyper-Threading)技術</li></ul>
晶片組	<ul style="list-style-type: none"><li>Intel 955X &amp; ICH7R</li><li>北橋晶片: Intel 955X</li><li>南橋晶片: Intel ICH7R</li></ul>
記憶體	<ul style="list-style-type: none"><li>雙通道DDR2 記憶體架構</li><li>4個240針DDR2 DIMM 插槽支援至8 GB</li><li>支援DDR2 667/533</li><li>ECC &amp; Non-ECC非緩衝1.8V DDR DIMM</li><li>支援 Intel MPT (記憶體管線技術: Memory Pipeline Technology)</li></ul>
擴充槽	<ul style="list-style-type: none"><li>2個PCI Express x16槽</li><li>1個PCI Express x1槽</li><li>3個PCI槽</li></ul>
儲存裝置	<ul style="list-style-type: none"><li>以ICH7R晶片支援<ul style="list-style-type: none"><li>2個Ultra DMA100/66 裝置</li><li>4個 SATAII 裝置, 並提供Intel Matrix Storage(矩陣式儲存)技術</li><li>支援RAID 0、RAID 1、RAID 10、RAID 5 設定</li></ul></li><li>以 SiI3132支援</li></ul>

	<ul style="list-style-type: none"><li>2個 SATAII 裝置</li><li>支援RAID 0、RAID 1 &amp; e-SATA &amp; PM</li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>VIA IEEE1394a 控制器</li><li>支援2個IEEE1394a 埠</li></ul>
音訊	<ul style="list-style-type: none"><li>8聲道音訊CODEC</li><li>相容於Intel HD (High Definition; 高解析) 音訊規格</li></ul>
雙LAN	<ul style="list-style-type: none"><li>Intel PCI-E Giga LAN 控制器</li><li>Realtek Giga LAN 控制器</li></ul>
背面板 輸出入介面	<ul style="list-style-type: none"><li>1個PS/2 鍵盤連接器</li><li>1個PS/2 滑鼠連接器</li><li>4個USB埠</li><li>2個RJ45 LAN 插孔</li><li>1個1394a 埠</li><li>1個序列埠(COM1)</li><li>1個數位SPDIF輸出連接器</li><li>1個數位SPDIF輸入連接器</li><li>線級輸出/線級輸入/麥克風輸入連接器</li></ul>
BIOS功能	<ul style="list-style-type: none"><li>採4Mb Flash ROM的AMI BIOS</li><li>支援Plug and Play 1.0A、APM 1.2、Multi Boot、及 DMI</li><li>支援ACPI 修訂版1.0規格</li></ul>

內部輸出入  
介面

- 1 個 24針ATX 電源供應器連接器及8針12 V 連接器
- 1 個軟碟機連接器，可支援360K至2.88M位元組之3 Mode 軟碟機及LS120軟碟機
- 1 個 IDE連接器
- 6 個序列ATA 連接器
- 2 個 USB 2.0接頭，可支援4個額外的USB埠
- 1 個 1394a接頭
- 1 個 CD輸入接頭
- 1 個前面板開關及1 個 LED 接頭
- 1 個前面板音訊接頭
- 1 個 LPT接頭
- 1 個 CHS1接頭
- 1 個輔助 4針+12V連接器
- 1 個喇叭接頭
- 1 個 SIR級之 IrDA接頭
- 1 個 CPUFAN/1個 NBFAN/1個 SYSFAN 連接器

## 主機板尺寸

- ATX 尺寸
- 305mm x 244mm

## 功能摘要

CPU	<ul style="list-style-type: none"><li>• 用于 Intel Pentium4/PentiumD Extreme Edition/ Pentium 4 Extreme Edition 处理器的 LGA775 插座</li><li>• 支持 1066/800 MHz FSB</li><li>• 支持超线程(Hyper-Threading)技术</li></ul>
芯片组	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• 北桥: Intel 955X</li><li>• 南桥: Intel ICH7R</li></ul>
内存	<ul style="list-style-type: none"><li>• 双通道 DDR2 内存架构</li><li>• 4 个 240 线 DDR2 DIMM 插槽, 内存最大可支持 8 GB</li><li>• 支持 DDR2 667/533</li><li>• ECC &amp; 非 ECC, 非缓冲 1.8V DDR DIMM</li><li>• 支持 Intel MPT (内存管线技术)</li></ul>
扩展选项	<ul style="list-style-type: none"><li>• 2 个 PCI Express x16</li><li>• 1 个 PCI Express x1</li><li>• 3 个 PCI 插槽</li></ul>
存储	<ul style="list-style-type: none"><li>• 支持 ICH7R<ul style="list-style-type: none"><li>- 2 个 Ultra DMA100/66 设备</li><li>- 4 个 SATAII 设备, 带 Intel 矩阵存储功能</li><li>- RAID 0, RAID 1, RAID 10, RAID 5 配置</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• 支持 SiI3132<ul style="list-style-type: none"><li>- 2 个 SATAII 设备</li><li>- 支持 RAID 0, RAID 1 &amp; e-SATA &amp; PM</li></ul></li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• VIA IEEE1394a 控制器</li><li>• 支持 2 个 IEEE1394a 接口</li></ul>
音频	<ul style="list-style-type: none"><li>• 8 声道音频编解码器</li><li>• 符合 Intel HD (高清晰度) 音频</li></ul>
双 LAN	<ul style="list-style-type: none"><li>• Intel PCI-E 千兆 LAN 控制器</li><li>• Realtek 千兆 LAN 控制器</li></ul>
后面板 I/O	<ul style="list-style-type: none"><li>• 1 个 PS/2 键盘接口</li><li>• 1 个 PS/2 鼠标接口</li><li>• 4 个 USB 端口</li><li>• 2 个 RJ45 LAN 接口</li><li>• 1 个 1394a 端口</li><li>• 1 个串口 (COM1)</li><li>• 1 个数字量 SPDIF 输出</li><li>• 1 个数字量 SPDIF 输入</li><li>• 线出/线入/麦克风入接口</li></ul>
BIOS 功能	<ul style="list-style-type: none"><li>• AMI BIOS (4Mb Flash ROM)</li><li>• 支持即插即用 1.0A、APM 1.2、Multi Boot、DMI</li><li>• 支持 ACPI Revision 1.0 规格</li></ul>

集成 I/O	<ul style="list-style-type: none"><li>• 1 个 24 针 ATX 电源接口和 1 个 8 针 12 V 接口</li><li>• 1 个软驱接口- 支持 360K ~ 2.88M 字节, 3 Mode FDD 或 LS120</li><li>• 1 个 IDE 接口</li><li>• 6 个串行 ATA 接口</li><li>• 2 个 USB 2.0 接头, 支持另外 4 个 USB 端口</li><li>• 1 个 1394a 接头</li><li>• 1 个 CD 输入接头</li><li>• 1 个前面板开关/LED 接头</li><li>• 1 个前面板音频接头</li><li>• 1 个 LPT 接头</li><li>• 1 个 CHS1 接头</li><li>• 1 个 辅助 4 针 +12V 接口</li><li>• 1 个 扬声器接头</li><li>• 1 个 IrDA 用于 SIR 接头</li><li>• 1 x CPUFAN/1 x NBFAN/1 x SYSFAN 接口</li></ul>
外形	<ul style="list-style-type: none"><li>• ATX 尺寸</li><li>• 305mm x 244mm</li></ul>

## Характеристики

<b>CPU</b>	<ul style="list-style-type: none"><li>• Разъем LGA775 для процессоров типа Intel Pentium/PentiumD Extreme Edition/Pentium 4 Extreme Edition</li><li>• Поддержка FSB до 1066/800 МГц</li><li>• Поддержка технологии Hyper-Threading</li></ul>
<b>Чипсет</b>	<ul style="list-style-type: none"><li>• Intel 955X и ICH7R</li><li>• Северный мост: Intel 955X</li><li>• Южный мост: Intel ICH7R</li></ul>
<b>Память</b>	<ul style="list-style-type: none"><li>• Архитектура памяти Dual-channel DDR2</li><li>• Четыре 240-штырьковых сокета для DDR2 DIMM с поддержкой до 8 ГБ памяти</li><li>• Поддержка DDR2 667/533</li><li>• Небуферизируемая память 1.8V DDR DIMM, ECC и Non-ECC</li><li>• Поддержка технологии Intel MPТ</li></ul>
<b>Возможности расширения</b>	<ul style="list-style-type: none"><li>• 2 слот PCI Express x16</li><li>• 1 слот PCI Express x1</li><li>• 3 слота PCI</li></ul>
<b>Массовая память</b>	<ul style="list-style-type: none"><li>• Поддерживаемая ICH7R<ul style="list-style-type: none"><li>- 2 устройства Ultra DMA100/66</li><li>- 4 устройства SATAII для Intel Matrix Storage</li><li>- Конфигурации RAID 0, RAID 1, RAID 10, RAID 5</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• Поддерживаемая SiI3132<ul style="list-style-type: none"><li>- 2 устройства SATAII</li><li>- Поддержка RAID 0, RAID 1, e-SATA и PM</li></ul></li></ul>
<b>IEEE 1394a</b>	<ul style="list-style-type: none"><li>• Контроллер VIA IEEE1394a</li><li>• Поддержка 2 портов IEEE1394a</li></ul>
<b>Аудио</b>	<ul style="list-style-type: none"><li>• 8-канальный аудио CODEC</li><li>• Совместимость с аудио Intel HD</li></ul>
<b>Dual LAN</b>	<ul style="list-style-type: none"><li>• Контроллер Intel PCI-E Giga LAN</li><li>• Контроллер Realtek Giga LAN</li></ul>
<b>Гнезда входа/выхода на тыльной панели</b>	<ul style="list-style-type: none"><li>• 1 гнездо клавиатуры PS/2</li><li>• 1 гнездо мыши PS/2</li><li>• 4 порта USB</li><li>• 2 гнезда RJ45 LAN</li><li>• 1 порт 1394a</li><li>• 1 серийный порт (COM1)</li><li>• 1 гнездо выхода Digital SPDIF</li><li>• 1 гнездо входа Digital SPDIF</li><li>• Гнездо для подключения микрофона, гнезда аудио-входа и выхода</li></ul>
<b>Особенности BIOS'а</b>	<ul style="list-style-type: none"><li>• AMI BIOS с 4Мб Flash ROM</li><li>• Поддержка Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Поддержка ACPI вер.1.0</li></ul>

Внутренние гнезда входа/выхода	<ul style="list-style-type: none"><li>• 1 24-штырьковое гнездо питания ATX и 8-штырьковое гнездо 12 V</li><li>• 1 гнездо подключения накопителя НГМД с поддержкой форматов 360К ~ 2.88МБ, 3 формата FDD или LS120</li><li>• 1 гнездо IDE</li><li>• 6 гнезд Serial ATA</li><li>• 2 гнезда USB 2.0 с поддержкой 4 дополнительных портов USB</li><li>• 1 гнездо 1394a</li><li>• 1 разъем CD in</li><li>• 1 гнездо выключателя/индикатора передней панели</li><li>• 1 аудио гнездо передней панели</li><li>• 1 гнездо LPT</li><li>• 1 гнездо CHS1</li><li>• 1 коннектор Auxiliary 4-pin +12V</li><li>• 1 разъем громкоговорителей</li><li>• 1 разъем IrDA для SIR</li><li>• 1 коннектор CPUFAN/1 коннектор NBFAN/1 коннектор SYSEAN</li></ul>
Габариты	<ul style="list-style-type: none"><li>• Стандарт ATX</li><li>• 305мм x 244мм</li></ul>

## Cechy

CPU	<ul style="list-style-type: none"><li>• Gniazdo LGA775 dla procesora Intel Pentium/Pentium D Extreme Edition /Pentium 4 Extreme Edition</li><li>• Obsługuje szynę FSB do 1066/800 MHz</li><li>• Obsługuje technologię Hyper-Threading</li></ul>
Chipset	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• Mostek północny: Intel 955X</li><li>• Mostek południowy: Intel ICH7R</li></ul>
Pamięć	<ul style="list-style-type: none"><li>• Architektura pamięci dwukanałowej DDR2</li><li>• Cztery 240-nóżkowe złącza DDR2 DIMM obsługujące do 8 GB pamięci</li><li>• Obsługuje DDR2 667/533</li><li>• Niebuforowana pamięć 1.8V DDR DIMM, ECC i Non-ECC</li><li>• Obsługuje technologię Intel MPT</li></ul>
Możliwości rozbudowy	<ul style="list-style-type: none"><li>• 2 złącza PCI Express x16</li><li>• 1 złącza PCI Express x1</li><li>• 3 złącza PCI</li></ul>
Urządzenia pamięć masowej	<ul style="list-style-type: none"><li>• Obsługiwane przez ICH7R</li><li>- 2 urządzenia Ultra DMA100/66</li><li>- 4 urządzenia SATAII dla Intel Matrix Storage</li><li>- Konfiguracje RAID 0, RAID 1, RAID 10,RAID 5</li></ul>

	<ul style="list-style-type: none"><li>• Obsługiwane przez SiI3132</li><li>- 2 urządzenia SATAII</li><li>- Obsługuje RAID 0, RAID 1, e-SATA i PM</li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Kontroler VIA IEEE1394a</li><li>• Obsługuje 2 złącza IEEE1394a</li></ul>
Audio	<ul style="list-style-type: none"><li>• 8-kanalowy audio CODEC</li><li>• Zgodność z Intel HD Audio</li></ul>
Dual LAN	<ul style="list-style-type: none"><li>• Kontroler Intel PCI-E Giga LAN</li><li>• Kontroler Realtek Giga LAN</li></ul>
Gniazda We/Wy na tylnym panelu	<ul style="list-style-type: none"><li>• 1 gniazdo klawiatury PS/2</li><li>• 1 gniazdo myszy PS/2</li><li>• 4 gniazda USB</li><li>• 2 złącza RJ45 LAN</li><li>• 1 port 1394a</li><li>• 1 port szeregowy (COM1)</li><li>• 1 gniazdo wyjścia Digital SPDIF</li><li>• 1 gniazdo wejścia Digital SPDIF</li><li>• Gniazda wejściowe i wyjściowe audio, gniazdo wejściowe mikrofonowe</li></ul>
Cechy BIOSu	<ul style="list-style-type: none"><li>• AMI BIOS, zaopatrzony w 4Mb Flash ROM</li><li>• Obsługuje technologie Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Obsługuje technologię ACPI w wersji 1.0</li></ul>

Wewnętrzne gniazda We/Wy	<ul style="list-style-type: none"><li>• 1 gniazdo 24-nóżkowe zasilacza ATX i 8-nóżkowe gniazdo zasilania 12 V</li><li>• 1 gniazdo napędu dyskietek, obsługuje formaty 360K ~ 2.88M Bajt, 3 Mode FDD lub LS120</li><li>• 1 złącze IDE</li><li>• 6 złącz Serial ATA</li><li>• 2 złącza USB 2.0 obsługujące 4 dodatkowe porty USB</li><li>• 1 złącze 1394a</li><li>• 1 gniazdo CD in</li><li>• 1 złącze włącznika / wskaźnika LED na panelu przednim</li><li>• 1 gniazdo audio na panelu przednim</li><li>• 1 złącze LPT</li><li>• 1 złącze CHS1</li><li>• 1 konektor Auxiliary 4-pin +12V</li><li>• 1 gniazdo głośników</li><li>• 1 gniazdo IrDA dla SIR</li><li>• 1 konektor CPUFAN/1 konektor NBFAN/1 konektor SYS-FAN</li></ul>
Wymiary	<ul style="list-style-type: none"><li>• Standard ATX</li><li>• 305mm x 244mm</li></ul>

## Souhrn vlastností

CPU	<ul style="list-style-type: none"><li>• Patice LGA775 pro procesory Intel Pentium/Pentium D Extreme Edition/Pentium 4 Extreme Edition</li><li>• Podpora až 1066/800 MHZ FSB</li><li>• Podpora technologie „Hyper-Threading“</li></ul>
Čipová sada	<ul style="list-style-type: none"><li>• Intel 955X a ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Paměť	<ul style="list-style-type: none"><li>• Dvojkanálová paměťová architektura DDR2</li><li>• 4 x 240kolíková patice DDR2 DIMM, podporující paměť do kapacity až 8 GB</li><li>• Podpora DDR2 667/533</li><li>• Podpora modulů ECC a Non-ECC 1,8 V DDR DIMM bez vyrovnávací paměti</li><li>• Podpora Intel MPT (technologie Memory Pipeline)</li></ul>
Rozšiřující sloty	<ul style="list-style-type: none"><li>• 2 x slot PCI Express x16</li><li>• 1 x slot PCI Express x1</li><li>• 3 x slot PCI</li></ul>
Disková zařízení	<ul style="list-style-type: none"><li>• Podporovaná ICH7R</li><li>- 2 x zařízení Ultra DMA100/66</li><li>- 4 x zařízení SATAII s Intel Matrix Storage</li><li>- Konfigurace RAID 0, RAID 1, RAID 10, RAID 5</li></ul>

	<ul style="list-style-type: none"><li>• Podporovaná SiI3132</li><li>- 2 x zařízení SATAII</li><li>- Podpora RAID 0, RAID 1 a e-SATA a PM</li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• Řadič VIA IEEE1394a</li><li>• Podpora 2 portů IEEE 1394a</li></ul>
Zvuk	<ul style="list-style-type: none"><li>• 8kanálový zvukový kodek</li><li>• Splňuje standard Intel HD (High Definition) Audio</li></ul>
Duální LAN	<ul style="list-style-type: none"><li>• Řadič Intel PCI-E Giga LAN</li><li>• Řadič Realtek Giga LAN</li></ul>
Vstupy/ výstupy na zadním panelu	<ul style="list-style-type: none"><li>• 1x konektor klávesnice PS/2</li><li>• 1x konektor myši PS/2</li><li>• 4x port USB</li><li>• 2x konektor LAN RJ45</li><li>• 1x port 1394a</li><li>• 1x sériový port (COM1)</li><li>• 1x digitální výstup SPDIF</li><li>• 1x digitální vstup SPDIF</li><li>• Konektory linkový vstup/linkový výstup/mikrofon</li></ul>
Vlastnosti BIOS	<ul style="list-style-type: none"><li>• AMI BIOS s 4 Mb Flash ROM</li><li>• Podpora Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• Podpora standardu ACPI verze 1.0</li></ul>

Interní vstupy/ výstupy	<ul style="list-style-type: none"><li>• 1x 24kolíkový napájecí konektor ATX a 8kolíkový konektor 12 V</li><li>• 1x konektor floppy diskových mechanik – podpora 360 kB až 2,88 MB, 3 režimy FDD nebo LS120</li><li>• 1x konektor IDE</li><li>• 6x konektor Serial ATA</li><li>• 2x rozhraní USB 2.0 s podporou dalších 4 USB portů</li><li>• 1x rozhraní 1394a</li><li>• 1x vstup CD</li><li>• 1x rozhraní pro spínač na předním panelu/LED</li><li>• 1x rozhraní pro zvukový vstup/výstup na předním panelu</li><li>• 1x rozhraní LPT</li><li>• 1x rozhraní CHS1</li><li>• 1x pomocný 4kolíkový konektor +12 V</li><li>• 1x konektor reproduktoru</li><li>• 1x IrDA pro konektor SIR</li><li>• 1x konektory CPUFAN/1 x NBFAN/1 x SYSFAN</li></ul>
Velikost	<ul style="list-style-type: none"><li>• Rozměry standardu ATX</li><li>• 305mm x 244mm</li></ul>

## Sumarul caracteristicilor

Unitatea centrală (CPU)	<ul style="list-style-type: none"> <li>Soclu LGA775 pentru procesoare Intel Pentium/PentiumD Extreme Edition/Pentium 4 Extreme Edition</li> <li>Suportă FSB cu până la 1066/800 MHz</li> <li>Compatibil cu tehnologia Hypre-Threading</li> </ul>
Set de chipuri	<ul style="list-style-type: none"> <li>Intel 955X și ICH7R</li> <li>North Bridge: Intel 955X</li> <li>South Bridge: Intel ICH7R</li> </ul>
Memorie	<ul style="list-style-type: none"> <li>Arhitectură cu module de memorie DDR2 cu canal dual</li> <li>Patru socluri DDR2 DIMM cu 240 de ace, capacitate maximă de 8 GB</li> <li>Funcționează cu module DDR2 de 667/533</li> <li>DIMM-uri netamponate ECC &amp; Non-ECC, 1.8V DDR</li> <li>Suport pentru tehnologie Intel MPT (Memory Pipeline Technology)</li> </ul>
Sloturi de extindere	<ul style="list-style-type: none"> <li>Două sloturi PCI Express de 16x</li> <li>Un slot PCI Express de 1x</li> <li>Trei sloturi PCI</li> </ul>
Stocare	<ul style="list-style-type: none"> <li>Compatibilă cu ICH7R</li> <li>- Două unități Ultra DMA100/66</li> <li>- Dispozitive 4 x SATAII cu stocare Intel Matrix Storage</li> <li>- Configurație RAID 0, RAID 1, RAID 10, RAID 5</li> </ul>

	<ul style="list-style-type: none"> <li>Compatibilă cu SiI3132</li> <li>- Două unități SATAII devices</li> <li>- Suport RAID 0, RAID 1 &amp; e-SATA &amp; PM</li> </ul>
IEEE 1394a	<ul style="list-style-type: none"> <li>Controler VIA IEEE1394a</li> <li>Permite două porturi IEEE1394a</li> </ul>
Audio	<ul style="list-style-type: none"> <li>CODEC audio cu 8 canale</li> <li>Compatibil cu Intel HD (High Definition) Audio</li> </ul>
LAN dual	<ul style="list-style-type: none"> <li>Regulator Intel PCI-E Giga LAN</li> <li>Regulator Realtek Giga LAN</li> </ul>
I/O de pe panoul din spate	<ul style="list-style-type: none"> <li>Un conector de tastatură PS/2</li> <li>Un conector de mouse PS/2</li> <li>Patru porturi USB</li> <li>Două conectoare LAN RJ45</li> <li>Un port 1394a</li> <li>Un port serial (COM1)</li> <li>O ieșire SPDIF digitală</li> <li>O intrare SPDIF digitală</li> <li>Conectoare pentru intrare/ieșire audio și microfon</li> </ul>
Caracteristici BIOS	<ul style="list-style-type: none"> <li>AMI BIOS cu Flash ROM de 4 Mb</li> <li>Compatibil cu Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li> <li>Compatibil cu ACPI, versiunea 1.0</li> </ul>

<b>I/O internă</b>	<ul style="list-style-type: none"><li>• Un conector cu 24 ace pentru alimentare cu energie și conector de 12 V cu 8 ace</li><li>• Un conector Floppy, pentru dischete de 360 KB–2,88 MB, FDD cu 3 moduri sau LS120</li><li>• Un conector IDE</li><li>• Șase conecitoare ATA seriale</li><li>• Două conecitoare USB 2.0, cu posibilitate pentru alte 4 porturi USB</li><li>• Un conector 1394a</li><li>• Header 1 x CD in</li><li>• Un comutator/header LED pe panoul frontal</li><li>• Un conector audio pe panoul frontal</li><li>• Header 1 x LPT</li><li>• Header 1 x CHS1</li><li>• Conector 1 x Auxiliary 4-pin +12V</li><li>• Header1 x Speaker</li><li>• Header1 x IrDA pentru SIR</li><li>• Conecitoare 1 x CPUFAN/1 x NBFAN/1 x SYSFAN</li></ul>
<b>Caracteristici externe</b>	<ul style="list-style-type: none"><li>• Dimensiuni ATX</li><li>• 305mm x 244mm</li></ul>

## Параметри

Процесор	<ul style="list-style-type: none"><li>• Сокет LGA775 за процесор Intel Pentium/Pentium D Extreme Edition/Pentium 4 Extreme Edition</li><li>• Поддръжка на процесорна шина до 1066/800 MHz FSB</li><li>• Поддръжка на технологията Hyper-Threading</li></ul>
Чипсет	<ul style="list-style-type: none"><li>• Intel 955X &amp; ICH7R</li><li>• Северен мост: Intel 955X</li><li>• Южен мост: Intel ICH7R</li></ul>
Памет	<ul style="list-style-type: none"><li>• двуканална архитектура на паметта DDR2</li><li>• 4 слота 240-pin за DDR2 DIMM с поддръжка на общ капацитет до 8 GB</li><li>• поддръжка на модули DDR2 667/533</li><li>• ECC &amp; Non-ECC, небуферирани модули памет 1.8V DDR DIMM</li><li>• Поддръжка на технологията Intel MPТ (Memory Pipeline Technology)</li></ul>
Слотове за разширяване	<ul style="list-style-type: none"><li>• 2 слот PCI Express x16</li><li>• 1 слот PCI Express x1</li><li>• 3 слота PCI</li></ul>
Възможности за съхраняване на данни	<ul style="list-style-type: none"><li>• поддържани от ICH7R</li><li>- 2 устройства Ultra DMA100/66</li><li>- 4 SATAII устройства с поддръжка на технологията Intel Matrix Storage</li><li>- RAID 0, RAID 1, RAID 10, RAID 5</li></ul>

	<ul style="list-style-type: none"><li>• поддържани от Si3132</li><li>- 2 устройства SATAII</li><li>- Поддръжка на RAID 0, RAID 1 &amp; e-SATA &amp; PM</li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• контролер VIA IEEE1394a</li><li>• поддръжка на 2 порта IEEE1394a</li></ul>
Аудио	<ul style="list-style-type: none"><li>• 8-канален аудио CODEC</li><li>• Съвместимост с спецификацията Intel HD (High Definition) Audio</li></ul>
Dual LAN	<ul style="list-style-type: none"><li>• Мрежов контролер Intel PCI-E Giga LAN</li><li>• Мрежов контролер Realtek Giga LAN</li></ul>
Портове Вход/Изход на задния панел	<ul style="list-style-type: none"><li>• 1 порт PS/2 за клавиатура</li><li>• 1 порт PS/2 за мишка</li><li>• 4 порта USB</li><li>• 2 конектора RJ45 LAN</li><li>• 1 порт 1394a</li><li>• 1 сериен порт (COM1)</li><li>• 1 цифров изход SPDIF</li><li>• 1 цифров вход SPDIF</li><li>• Линеен вход/линеен изход/вход за микрофон</li></ul>
Параметри на BIOS	<ul style="list-style-type: none"><li>• AMI BIOS с 4Mb Flash ROM</li><li>• поддръжка на спецификацията Plug and Play 1.0A, APM 1.2, Multi Boot, DMI</li><li>• поддръжка на спецификацията ACPI revision 1.0</li></ul>

Интегриран Вход/  
Изход контролер

- 1 конектор 24-pin ATX Power Supply и конектор 8-pin 12 V
- 1 конектор за флопидисково устройство с поддръжка на устройства 360K ~ 2.88M Bytes, 3 Mode FDD или LS120
- 1 конектор IDE
- 6 конектора Serial ATA
- 2 колектора USB 2.0 с поддръжка на 4 допълнителни USB порта
- 1 колектор 1394a
- 1 конектор за CD in
- 1 колектор за бутоните и LED-индикацията на предния панел
- 1 колектор за аудио предния панел
- 1 колектор LPT
- 1 колектор CHS1
- 1 спомагателен 4-pin +12V конектор
- 1 конектор за високоговорители
- 1 IrDA конектор за серийна инфрачервена връзка (SIR)
- конектори за вентилатори CPUFAN / NBFAN (по 1 бр.) / 1 SYSFAN

Размери

- ATX
- 305mm x 244mm

## Jellemzők összefoglalása

Központi egység(CPU)	<ul style="list-style-type: none"><li>• LGA775 foglalat Intel Pentium/PentiumD Extreme Edition/Pentium 4 Extreme Edition processzoroknak</li><li>• Az FSB maximum 1066/800 MHz-es</li><li>• Támogatja a Hyper-Threading technológiát</li></ul>
Lapkakészlet	<ul style="list-style-type: none"><li>• Intel 955X és ICH7R</li><li>• North Bridge: Intel 955X</li><li>• South Bridge: Intel ICH7R</li></ul>
Memória	<ul style="list-style-type: none"><li>• Duál csatornás DDR2 memória kiépítés</li><li>• Négy 240 tűs DDR2 DIMM foglalat, maximum 8 GB-os kapacitással</li><li>• 667/533-as DDR2 egységekkel működik</li><li>• ECC &amp; Non-ECC, nem pufferelt 1.8V DDR DIMM-ek</li><li>• Megfelel Intel MPT (Memory Pipeline Technology) memória csatorna technológiának</li></ul>
Bővítési foglalatok	<ul style="list-style-type: none"><li>• 2 x 16-szoros PCI Express</li><li>• 1 x egyszeres PCI Express</li><li>• 3 x PCI foglalat</li></ul>
Tárolás	<ul style="list-style-type: none"><li>• Az ICH7R által támogatott<ul style="list-style-type: none"><li>- 2 x Ultra DMA 100/66 eszköz</li><li>- 4 x SATAII berendezések Intel Matrix Storage tárolással</li><li>- RAID 0, RAID 1, RAID 10, RAID 5 konfiguráció</li></ul></li></ul>

	<ul style="list-style-type: none"><li>• A SiI3132 által támogatot<ul style="list-style-type: none"><li>- 2 x SATAII eszköz</li><li>- RAID 0, RAID 1 &amp; e-SATA &amp; PM biztosítás</li></ul></li></ul>
IEEE 1394a	<ul style="list-style-type: none"><li>• VIA IEEE1394a vezérlő</li><li>• Két IEEE1394 portot támogat</li></ul>
Audio	<ul style="list-style-type: none"><li>• 8 csatornás audio CODEC</li><li>• Megfelel az Intel HD (High Definition) Audio hangnak</li></ul>
Duál LAN	<ul style="list-style-type: none"><li>• Intel PCI-E Giga LAN vezérlő</li><li>• Realtek Giga LAN vezérlő</li></ul>
Hátsó panelen levő I/O	<ul style="list-style-type: none"><li>• 1 x PS/2 billentyűzet csatlakozó</li><li>• 1 x PS/2 egérsatlakozó</li><li>• 4 x USB port</li><li>• 2 x RJ45 LAN csatlakozó</li><li>• 1 x 1394a port</li><li>• 1 x soros port (COM1)</li><li>• 1 x digitális SPDIF kimenet</li><li>• 1 x digitális SPDIF bemenet</li><li>• Audio kiemelt/bemenet/mikrofon csatlakozó</li></ul>
BIOS jellemzők	<ul style="list-style-type: none"><li>• AMI BIOS 4 Mb Flash ROM-mal</li><li>• 1.0A Plug and Play, APM 1.2, Multi Boot, DMI támogatása</li><li>• Kompatibilis az ACPI 1.0 változatával</li></ul>

Belső I/O	<ul style="list-style-type: none"> <li>• 1 x 24 tűs ATX tápforrás csatlakozó és 8-tűs 12 V-os csatlakozó</li> <li>• 1 x floppy meghajtó 360 kB–2,88 MB lemezeknek, 3 üzemmódú FDD meghajtók vagy LS120</li> <li>• 1 x IDE foglalat</li> <li>• Hat soros ATA csatlakozó</li> <li>• Két USB 2.0 csatlakozó, és további 4 USB porttal tud működni</li> <li>• 1 x 1394a csatlakozó</li> <li>• 1 x CD in fejléc</li> <li>• Egy elülső panelen levő kapcsoló/LED csatlakozó</li> <li>• Az elülső panelen levő audio csatlakozó</li> <li>• 1 x LPT csatlakozó</li> <li>• 1 x CHS1 csatlakozó</li> <li>• 1 x Auxiliary 4-tűs +12V csatlakozó</li> <li>• 1 x handszóró fejléc</li> <li>• 1 x IrDA for SIR fejléc</li> <li>• 1 x CPUFAN/1 x NBFAN/1 x SYSFAN csatlakozók</li> </ul>
Alaki jellemzők	<ul style="list-style-type: none"> <li>• ATX méret</li> <li>• 305mm x 244mm</li> </ul>

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### **Federal Communications Commission (FCC)**

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

**Declaration of Conformity**

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

**Canadian Department of Communications**

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.