TÜV CERT

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.

2F, No. 240, Sec. 1, Nei Hu Road, Taipei, Taiwan 114
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114
No. 20 & No. 26, Free Trade Zone, Shatoujiao, 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

TGA-ZM-30-96-00

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-R1-L

We hereby certify that

ECS MANUFACTURING (SHANZHEN) CO., LTD.

by reason of its

Environmental Management System
has been awarded this certificate for
compliance with the standard
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The Environmental Management System

applies in the following area:
**ECS MANUFACTURING (SHANZHEN) CO., LTD.
located at No. 20 & 26 (except 1F, 2F), Free Trade Zone,
Shatuojiao, 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.

Preface

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Version 3.0

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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 Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard   Describes features of the motherboard.

Go to   ⇨   page 1

Chapter 2

Installing the Motherboard   Describes installation of motherboard components.

Go to   ⇨   page 7

Chapter 3

Using BIOS   Provides information on using the BIOS Setup Utility.

Go to   ⇨   page 27

Chapter 4

Using the Motherboard Software   Describes the motherboard software

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA775 socket Intel Core™2 Duo / Pentium D/Pentium 4/Celeron D processors for high-end business or personal desktop markets.

The motherboard incorporates the 945G Northbridge (NB) and ICH7 Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 1066/800/533 MHz using a scalable FSB Vcc_CPU. The memory controller supports DDR2 memory DIMM frequencies of 667/533/400. It supports two DDR2 Sockets with up to maximum memory of 2 GB. DDR2 memory bandwidth of 5.3 GB/s in single-channel is supported, or 10.7 GB/s in dual-channel interleaved mode assuming DDR2 667 MHz. High resolution graphics via one PCI Express slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 1.0a.

The ICH7 Southbridge supports two PCI slots which are PCI 2.3 compliant. In addition, one PCI Express x1 slot is supported, fully compliant to the PCI Express Base Specification, Revision 1.0a. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for eight USB 2.0 ports, integrates Azalia codec supporting Azilia standard that features an 8-channel High Definition Audio output. One onboard IDE connector supports 2 IDE devices in Ultra ATA100/66/33 mode. The Southbridge integrates a Serial ATA host controller that is SATA II compliant, supporting four SATA ports with maximum transfer rate up to 3.0 Gb/s each.

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, LPT1, one VGA port, four USB ports, one optional LAN port, one optional 1394 port and audio jacks for microphone, line-in and 8-ch line out.

Feature

Processor

The motherboard uses an LGA775 type of Intel Core^{TM}2 Duo / Pentium D/Pentium 4/ Celeron D that carries the following features:

- Accommodates Intel Core^{TM}2 Duo/Pentium D/Pentium 4/Celeron D processors
- Supports a system bus (FSB) of 1066/800/533MHZ
- Supports "Hyper-Threading" technology CPU

"Hyper-Threading" technology enables the operating system into thinking it's hooked up to two processors, allowing two threads to be run in parallel, both on separate "logical" processors within the same physical processor.

Chipset

The 945G Northbridge (NB) and ICH7 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

945G (NB)	• Supports 32-bit host bus addressing, allowing the CPU to access the entire 4 GB of the memory address space.
	• 2 GB/s point-to-point Direct Media Interface (DMI) to ICH7 (1 GB/s)each direction.
	• Supports one PCI Express x16 for Graphics Interface, fully compliant to the PCI Express Base Specification revision 1.0a.
	• Supports 256-Mb, 512-Mb and 1-Gb DDR2 technologies for x8 and x16 devices
	• Supports high quality 3D setup, Render Engine and high-quality texture engine
ICH7 (SB)	• Enhanced DMA Controller, interrupt controller, and timer functions
	• Compliant with PCI Express Base Specification, Revision 1.0a
	• Compliant with PCI 2.3 specificaiton
	• Compliant with Serial ATA II specification
	• Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports
	• Integrated LAN controller
	• Compliant with AC'97/Intel High Definition Audio Codec(s) supporting 8-channel audio outputs
	• Integrated IDE controller supports Ultra ATA100/66/33

Memory

- Supports DDR2 667/533/400 DDR SDRAM with Dual-channel architecture
- Accommodates two unbuffered DIMMs
- Up to 1 GB per DIMM with maximum memory size up to 2 GB

Graphics

- 3D Setup and Render Engine
- Zone Rendering Support
- High Quality Texture Engine

1394a FireWire (Optional)

- Compliant with single chip hostcontroller for IEEE Std 1394-1995 and IEEE 1394a-2000
- Integrated 400 Mbit 2-Port PHY for the PCI BUS
- 3.3V Power Supply with 5V Tolerant Inputs

Onboard LAN (Optional)

The onboard LAN controller provides the following features:

- Integrated 10/100/1000 transceiver
- Supports PCI v2.3, 32-bit, 33/66MHz
- Supports fully with IEEE802.3, IEEE802.3u and IEEE802.3ab

- Supports 10/100 /Mb/s N-Way Auto negotiation operation
- Half/Full deplux capacity
- Supports wake-On-LAN(WOL)function and remote wake-up

Audio (Optional)

- 8-channels of DAC support 24/20/16-bit PCM format for 7.1 audio solution
- Support 192K/96K/48K/44.1KHz DAC sample rate
- Power support: Digital: 3.3V; Analog: 3.3V~5.25V
- Meets Micrsoft WHQL/WLP 2.0 audio requirements
- Direct Sound 3D™ compatible
- Dolby Digital Encorder output for consumer electronic application

- Compliant with Intel High Definition Audio, supporting 8-channel DACs with 95dB S/N ratio
- Compabilities: 192/96/48/44.1 KHz with 24/20/16 bits
- Power support: Digital: 3.3V; Analog: 3.3V/5.0V
- All analog jacks are stereo input and output re-tasking for analog plug & play
- Meets Micrsoft WHQL/WLP 2.0 audio requirements
- Direct Sound 3D™ compatible
- Dolby Digital Encorder output for consumer electronic application

- Compliant with the AC'97 v2.3 CODEC
- Supports 6-channel audio CODEC designed for PC multimedia systems
- Provides three analog line-evel stereo inputs with 5-bit volum control: Line-in ,CD,AUX
- Meets Micrsoft WHQL/WLP 2.0 audio requirements

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphic Interface
- One PCI Express x1 slot
- Two 32-bit PCI v2.3 compliant slots
- One 40-pin IDE low profile header that support two IDE devices
- One floppy disk drive interface
- Four 7-pin SATA connectors

The motherboard supports UDMA bus mastering with transfer rates of 100/66 MB/s.

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One serial port
- One parallel port
- One VGA port
- Four USB ports
- One 1394 port (optional)
- One LAN port (optional)
- Audio jacks for microphone in, line-in and 8-ch High Definition Audio output

BIOS Firmware

This motherboard uses Award BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memroy timing

The firmware can also be used to set parameters for different processor clock speeds.

Some hardware specifications and software items are subject to change with out prior notice.

Motherboard Components
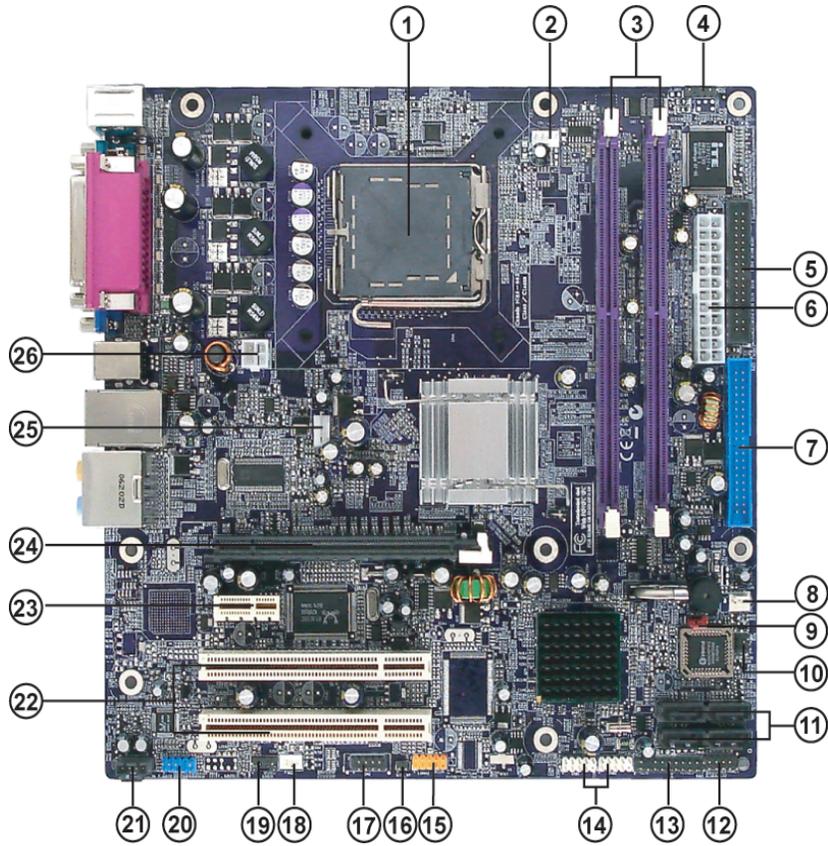
Table of Motherboard Components

LABEL	COMPONENT
1 CPU Socket	LGA775 socket for Intel Core^{TM}2 Duo/Pentium D/Pentium 4/Celeron D
2 CPU_FAN	CPU cooling fan connector
3 DIMM1~2	240-pin DDR2 SDRAM slots
4 IRDA	Infrared header
5 FDD	Floppy diskette drive connector
6 ATX1	Standard 24-pin ATX power connector
7 IDE1	Primary IDE channel
8 CHS_FAN	System cooling fan connector
9 CLR_CMOS	Clear CMOS jumper
10 EL**	LED header
11 SATA1~4	Serial ATA connectors
12 PANEL1	Front panel switch/LED header
13 JLPC**	Low pin count header
14 USB1~2	Front Panel USB headers
15 1394A2*	IEEE 1394a header
16 BIOS_WP	BIOS flash protect jumper
17 COM2*	Onboard Serial port header
18 WOL1*	Wake On LAN connector
19 SPDIFO or S/PDIF**	SPDIF out header
20 F_AUDIO	Front panel audio header
21 AUX_IN*	Auxiliary In connector
22 PCI1~2	32-bit add-on card slots
23 PCIE1	PCI Express x1 slot
24 PCIEX16	PCI Express slot for graphics interface
25 SYS_FAN	System cooling fan connector
26 ATX12V	Auxiliary 4-pin power connector

*   Stands for optional components

** Please be noted S/PDIF header is for special customers.

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Introducing the Motherboard

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. First, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports one or two floppy diskette drives and two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

This motherboard carries an Micro ATX form factor of 244 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.
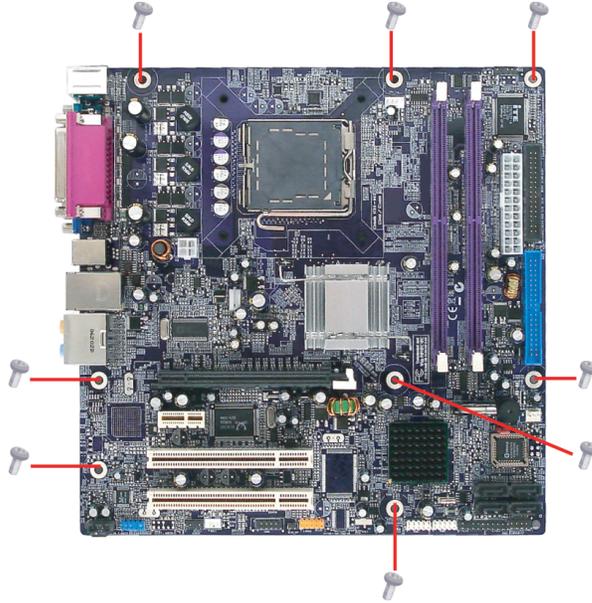
Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

SHORT   **OPEN**

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT

Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.
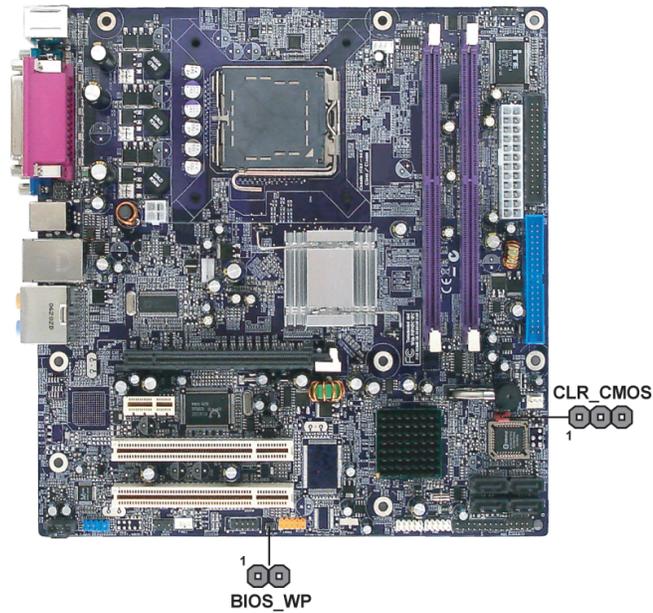
Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	CLR_CMOS	1-2: NORMAL 2-3: CLEAR CMOS Before clearing the CMOS, make sure to turn off the system.	1 CLR_CMOS
BIOS_WP	2-pin	FLASH PROTECT	OPEN : WRITE UNPROTECT SHORT:WRITE PROTECT	BIOS_WP

Installing the Motherboard

Connecting Case Components

After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1   Connect the CPU cooling fan cable to **CPU_FAN**.
2   Connect the system cooling fan connector to **SYS_FAN**.
3   Connect the case switches and indicator LEDs to the **PANEL1**.
4   Connect the standard power supply connector to **ATX1**.
5   Connect the auxiliary case power supply connector to **ATX12V**.
6   Connect the case cooling fan connector to **CHS_FAN .**
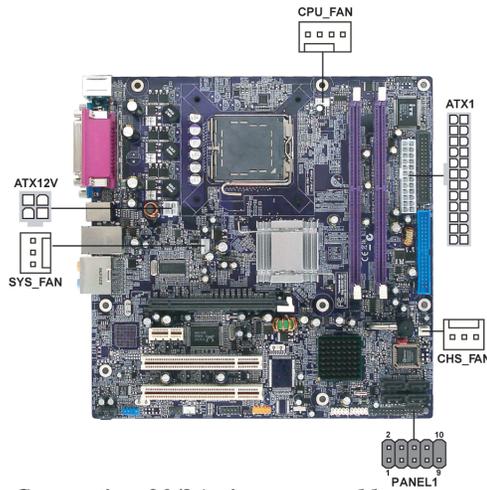
Connecting 20/24-pin power cable

Users please note that the 20-pin and 24-pin power cables can both be connected to the ATX1 connector. 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. A minimum power of 300W is recommended for a fully-configured system.
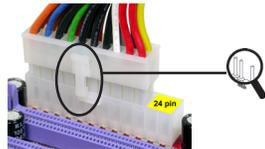
20-pin power cable

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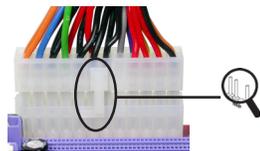
24-pin power cable

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.

Installing the Motherboard

CPU_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

SYS_FAN/CHS_FAN: FAN Power Connector(optional)

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX1: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

ATX12V: ATX 12V Power Connector

Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

Installing the Motherboard

Front Panel Header

The front panel header (PANEL1) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:
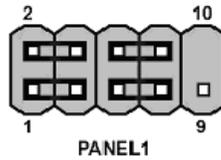
Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FP PWR/SLP	*MSG LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FP PWR/SLP	*MSG LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

* MSG LED (dual color or single color)

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the motherboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning: Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

This motherboard has a LGA775 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

The following illustration shows CPU installation components.

A. Read and follow the instructions shown on the sticker on the CPU cap.

B. 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.

C. 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.

D. Install the CPU on the socket
   · Orientate CPU package to the socket. Make sure you match triangle marker to pin 1 location.

E. Close the load plate
   · Slightly push down the load plate onto the tongue side, and hook the lever.
   · CPU is locked completely.

F. Apply thermal grease on top of the CPU.

G. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

H. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail 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 sup plied. The form and size of fan/heatsink may also vary.

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

3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with thecap on the LGA775 socket.

Installing the Motherboard

Installing Memory Modules

This motherboard accomodates four memory modules. It can support two 240-pin 1.8V DDR2 667/533/400. The total memory capacity is 2 GB.

DDR2 SDRAM memory module table

CPU FSB	Memory module	Memory Bus
533/800MHz	*DDR2 400*	*200 MHz*
533/800/1066MHz	*DDR2 533*	*266MHz*
800/1066MHz	*DDR2 667*	*333MHz*

You must install at least one module in any of the two slots. Each module can be installed with 256 MB to 1 GB of memory; total memory capacity is 2 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1   This motherboard supports unbuffered DDR2 SDRAM .
2   Push the latches on each side of the DIMM slot down.
3   Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4   Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5   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.
6   Install any remaining DIMM modules.

Installing the Motherboard

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

The following DDR2 400/533/667 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR2 400	**256MB**	Micron	MT8HTF3264AG-40EB3 CL3 SS
		Hynix	HYMP532U646-E3 AA
		Nanya	NT256T64UH4A0F-5A CL3
	512MB	Hynix	HYMP564U648-E3 AA
		Nanya	NT512T64U88A0F-5A CL3
		Samsung	M378T3253FG0-CCC
DDR2 533	**256MB**	Elixir	M2U25664TUH4A0F-37B CL4
		Infineon	HYS64T32000HU-3.7-A
		Kingston	KVR533D2N4
		Samsung	M378T3253FG0-CD5 CL4
	512MB	Elixir	M2U51264TU88A0F-37B
		Kingston	KVR533D2N4
		SAMSUNG	M378T6553BGO-CD5
	1GB	Infineon	HYS64T128020HU-3.7-A
DDR2 667	**256MB**	NANYA	NT512T64U88A0BY-3C
	512MB	ELPIDA	EBE52UC8AAFV-DF-E

Installing a Hard Dish Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your motherboard has one IDE channel interface. An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

> *You must orient the cable connector so that the pin1 (color) edge of the cable correspoinds to the pin 1 of the I/O port connector.*

IDE1: IDE Connector

This motherboard supports four high data transfer SATA ports with each runs up to 150 MB/s. To get better system performance, we recommend users connect the CD-ROM to the IDE channel, and set up the hard dives on the SATA ports.

IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features four SATA connectors supporting a total of four drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)   **SATA power cable (optional)**

Installing the Motherboard

Refer to the illustration below for proper installation:

1   Attach either cable end to the connector on the motherboard.
2   Attach the other cable end to the SATA hard drive.
3   Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard does not support the "Hot-Plug" function.

Installing a Floppy Diskette Drive

The motherboard has a floppy diskette drive (FDD) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch drive and another type of connector for a 3.5-inch drive.

You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

FDD: Floppy Disk Connector

This connector supports the provided floppy drive ribbon cable. After connecting the single end to the onboard floppy connector, connect the remaining plugs on the other end to the floppy drives correspondingly.
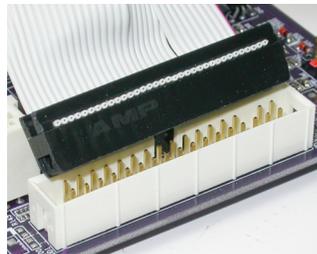
Installing the Motherboard

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.
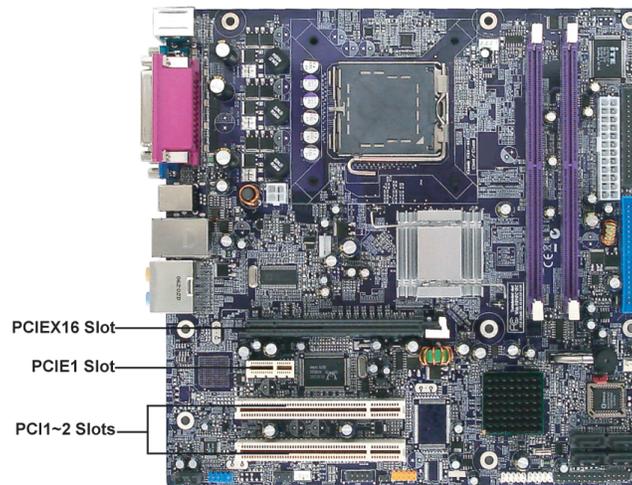
PCIEX16 slot	The one PCI Express x16 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well.
PCIE1 slot	The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well.
PCI 1/2 slots	This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1   Remove a blanking plate from the system case corresponding to the slot you are going to use.
2   Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3   Secure the metal bracket of the card to the system case with a screw.
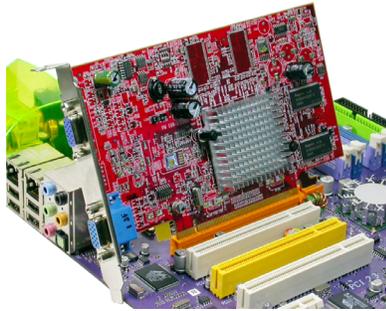
For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:
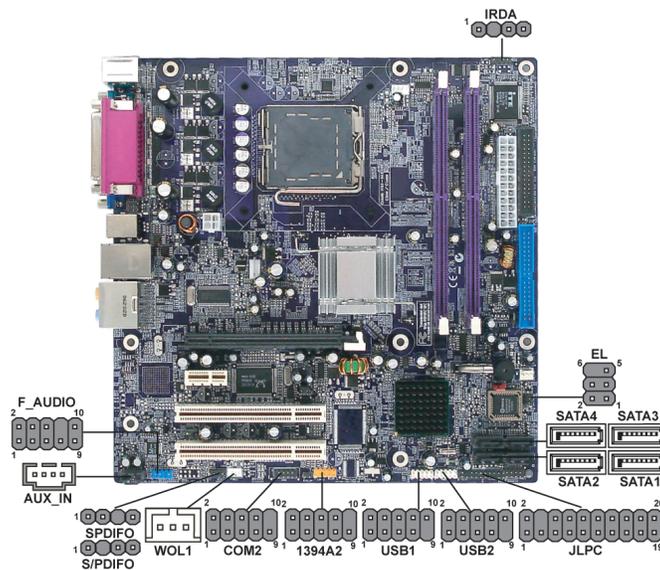
Installing the Motherboard

F_AUDIO: Front Panel Audio header for Azalia

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	Sense1_return
7	SENSE_SEND	8	KEY
9	PORT 2L	10	Sense2_return

SATA1/2/3/4: Serial ATA connectors

These connectors are use to support the new Serial ATA devices for the highest date transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

SPDIFO: SPDIF out header (optional)

This is an optional header that provides an SPDIFO (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coxial connector.

Pin	Signal Name
1	SPDIFOUT
2	+5V
3	Key
4	GND

S/PDIF: SPDIF out header (optional)

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coxial connector.

Pin	Signal Name
1	+5V
2	Key
3	SPDFOUT
4	GND

Installing the Motherboard

1394A2: IEEE 1394A header (optional)

Connect this header to any device with IEEE 1394a interface.

Pin	Signal Name	Pin	Signal Name
1	TPA1P	2	TPA1M
3	GND	4	GND
5	TPB1P	6	TPB1M
7	CPWR2	8	CPWR2
9	Key	10	GND

AUX_IN: Auxliary In header (optional)

Pin	Signal Name	Function
1	AUX_L	AUX In left channel
2	GND	Ground
3	GND	Ground
4	AUX_R	AUX In right channel

WOL1: Wake On LAN connector (optional)

If you have installed a LAN card, use the cable provided with the card to plug into the WOL connector onboard. This enables the Wake On LAN (WOL) feature. When your system is in a power-saving mode, any LAN signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility in the BIOS. See Chapter 3 for more information.

Pin	Signal Name	Function
1	5VSB	+5V stand by power
2	GND	Ground
3	Ring#	Wake up signal (low active)

IRDA: Infrared header

The motherboard supports an Infrared (IRDA) 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.

Pin	Signal Name
1	VCC
2	Key
3	IRRX
4	GND
5	IRTX

EL: LED headers (optional)

This is an optional header that is used to switch on and off SATA signal light.

Pin	Signal Name
1	GPIO26
2	GND
3	EL_GRN_LED
4	GND
5	EL_YLW_LED
6	KEY

USB1/2: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

COM2: Onboard serial port connector (optional)

Connect a serial port extension bracket to this header to add a second serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data Carrier Detect
2	SINB	Serial Input
3	SOUTB	UART B Serial Output
4	DTRB	UART B Data Terminal Ready
5	GND	Ground
6	DSRB	Data Set Ready
7	RTSB	RART B Request to Send
8	CTSB	Clear to Send
9	RI	Ring Indicator
10	Key	No pin

Installing the Motherboard

JLPC(Low pin count header) (optional)

Pin No.	Symbol	Pin No.	Symbol
1	CK_P_33M_JLPC	2	GND
3	FWH4	4	KEY
5	PCIRST_L1	6	SMBDATA
7	FWH3	8	FWH2
9	VCC3	10	FWH1
11	FWH0	12	GND
13	PENABLE	14	NC
15	3VSBY	16	SIRQ
17	GND	18	GND
19	LPCPD_L	20	SMBCLK

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:
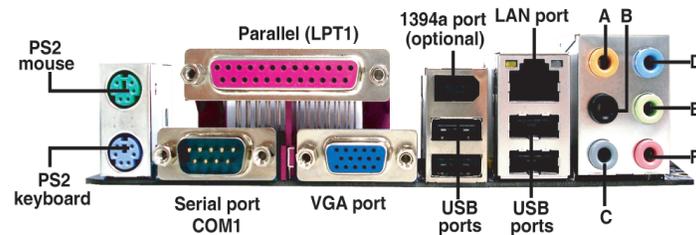
PS2 Mouse   Use the upper PS/2 port to connect a PS/2 pointing device.

PS2 Keyboard   Use the lower PS/2 port to connect a PS/2 keyboard.

Parallel Port (LPT1)   Use LPT1 to connect printers or other parallel communications devices.

Serial Port (COM1)   Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3.

VGA Port   Connect your monitor to the VGA port.

1394a Port (optional)   Use the 1394a port to connect to any firewire device.

LAN Port   Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

USB Ports   Use the USB ports to connect USB devices.

Audio Ports   Use the audio jacks to connect audio devices. The D port is for stereo line-in signal, while the F port is for microphone in signal. This motherboard supports 8-channel audio devices that corre-spond to the A, B, C, and E port respectively. In addition, all of the 3 ports, B, C, and E provide users with both right & left channels individually. Users please refer to the following note for specific port function definition.

A: Center & Woofer	D: Line-in
B: Back Surround	E: Front Out
C: Side Surround	F: Mic_in Rear

The above port definition can be changed to audio input or audio output by changing the driver utility setting.

This concludes Chapter 2. The next chapter covers the BIOS.

Installing the Motherboard

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest Award BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:
- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

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. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Pressing the delete key accesses the BIOS Setup Utility:

Phoenix-AwardBIOS CMOS Setup Utility:

▶ Standard CMOS Features	▶ Frequency/Voltage Control
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Advanced Chipset Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
▶ PC Health Status	
Esc: Quit F10: Save & Exit Setup	↑↓ → ← : Select Item
Time, Date, Hard Disk Type...	

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/-/PU/PD	Modifies the selected field's values
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions
F5	Loads previously saved values to CMOS
F6	Loads a minimum configuration for troubleshooting
F7	Loads an optimum set of values for peak performance

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1   If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2   If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.
3   Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4   Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
5   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.)
6   At the A:\ prompt, type the Flash Utility program name and press <Enter>.
7   Type the filename of the new BIOS in the "File Name to Program" text box. Follow the onscreen directions to update the motherboard BIOS.
8   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.

Using BIOS

When you start the Setup Utility, the main menu appears. 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>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

Standard CMOS Features

This option displays basic information about your system.

```
                    Phoenix-AwardBIOS CMOS Setup Utility
                          Standard CMOS Features
┌─────────────────────────────────────────────┬──────────────────────┐
│  Date (mm:dd:yy)    Wed, Jan 19 2005          │  Item Help           │
│  Time (hh:mm:ss)      9 : 33 : 26             │                      │
│  ▶ IDE Channel 0 Master                       │  Menu Level    ▶     │
│  ▶ IDE Channel 0 Slave                        │                      │
│  ▶ IDE Channel 1 Master                       │  Change the day, month,│
│  ▶ IDE Channel 1 Slave                        │  year and century    │
│                                               │                      │
│  Drive A               [1.44M, 3.5 in.]       │                      │
│  Floppy 3 Mode Support [Disabled]             │                      │
│                                               │                      │
│  Video                 [EGA/VGA]              │                      │
│  Halt On               [All Errors]           │                      │
│                                               │                      │
│  Base Memory           640K                   │                      │
│  Extended Memory       65535K                 │                      │
│  Total Memory          1024K                  │                      │
└─────────────────────────────────────────────┴──────────────────────┘
 ↑↓→←  : Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1: General Help
     F5:Previous Values      F6:Fail-Safe Defaults      F7:Optimized Defaults
```

Date and Time

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.

▶ IDE Devices (None)

Your computer has two IDE channels (Primary and Secondary) and each channel can be installed with one or two devices (Master and Slave). Use these items to configure each device on the IDE channel.

This motherboard features four SATA connectors supporting four SATA drives. SATA refers to Serial ATA (Advanced Technology Attachment), the standard interface for the IDE hard drives which are currently used in most PCs.

```
                    Phoenix-AwardBIOS CMOS Setup Utility
                          IDE Channel 0 Maser
┌─────────────────────────────────────────────┬──────────────────────┐
│  IDE HDD Auto-Detection   [Press Enter]       │  Item Help           │
│                                               │                      │
│  IDE Prinmary Master      [Auto]              │  Menu Level   ▶▶     │
│  Access Mode              [Auto]              │                      │
│                                               │  To auto-detect the  │
│  Capacity                 0MB                 │  HDD's size, head... on│
│                                               │  this channel        │
│  Cylinder                 0                   │                      │
│  Head                     0                   │                      │
│  Precomp                  0                   │                      │
│  Landing Zone             0                   │                      │
│  Sector                   0                   │                      │
│                                               │                      │
└─────────────────────────────────────────────┴──────────────────────┘
 ↑↓→←: Move  Enter: Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1: General Help
     F5:Previous Values      F6:Fail-Safe Defaults      F7:Optimized Defaults
```

IDE HDD Auto-Detection

Press <Enter> while this item is highlighted to prompt the Setup Utility to automatically detect and configure an IDE device on the IDE channel.

> *If you are setting up a new hard disk drive that supports LBA mode, more than one line will appear in the parameter box. Choose the line that lists LBA for an LBA drive.*

IDE Channel 0/1 Master/Slave IDE/Extended IDE Drives (Auto)

Leave this item at Auto to enable the system to automatically detect and configure IDE devices on the channel. If it fails to find a device, change the value to Manual and then manually configure the drive by entering the characteristics of the drive in the items described below. Please noted that if you choose IDE Channel 2/3 Master, the item may change to Extended IDE Drive.

Refer to your drive's documentation or look on the drive casing if you need to obtain this information. If no device is installed, change the value to None.

> *Before attempting to configure a hard disk drive, ensure that you have the configuration information supplied by the manufacturer of your hard drive. Incorrect settings can result in your system not recognizing the installed hard disk.*

Access Mode (Auto)

This item defines ways that can be used to access IDE hard disks such as LBA (Large Block Addressing). Leave this value at Auto and the system will automatically decide the fastest way to access the hard disk drive. If you choose IDE Channel 2/3 Master, the item only have Large and Auto.

Press <Esc> to return to the Standard CMOS Features page.

Drive A (1.44M, 3.5 in.)

The item defines the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Floppy 3 Mode Support (Disabled)

Floppy 3 mode refers to a 3.5-inch diskette with a capacity of 1.2 MB. Floppy 3 mode is sometimes used in Japan.

Video (EGA/VGA)

This item defines the video mode of the system. This motherboard has a built-in VGA graphics system; you must leave this item at the default value.

Halt On (All Errors)

This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

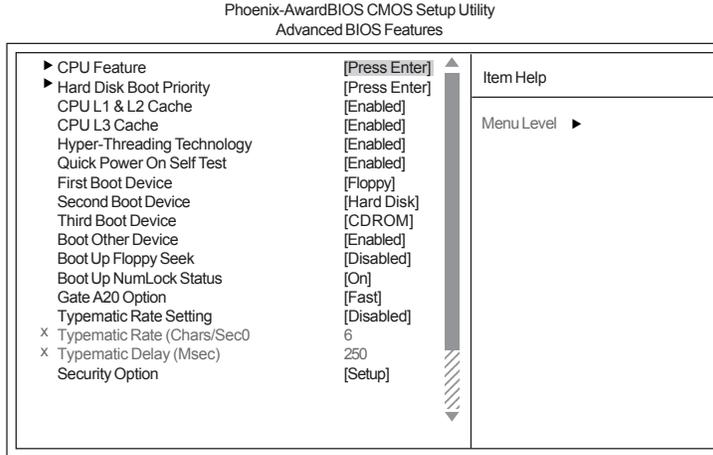### Base Memory, Extended Memory, and Total Memory

These items are automatically detected by the system at start up time. These are display-only fields. You cannot make changes to these fields.

Press <Esc> to return to AwardBIOS CMOS Setup Utility page.

Advanced BIOS Features

This option defines advanced information about your system.

Phoenix-AwardBIOS CMOS Setup Utility
Advanced BIOS Features

▶ CPU Feature	[Press Enter]	Item Help
▶ Hard Disk Boot Priority	[Press Enter]	
CPU L1 & L2 Cache	[Enabled]	Menu Level ▶
CPU L3 Cache	[Enabled]	
Hyper-Threading Technology	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Floppy]	
Second Boot Device	[Hard Disk]	
Third Boot Device	[CDROM]	
Boot Other Device	[Enabled]	
Boot Up Floppy Seek	[Disabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec0	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	

↑↓→← : Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

▶CPU Feature (Press Enter)

Users please note that this function is only available for Prescott CPUs. Scroll to this item and press <Enter> to view the following screen:
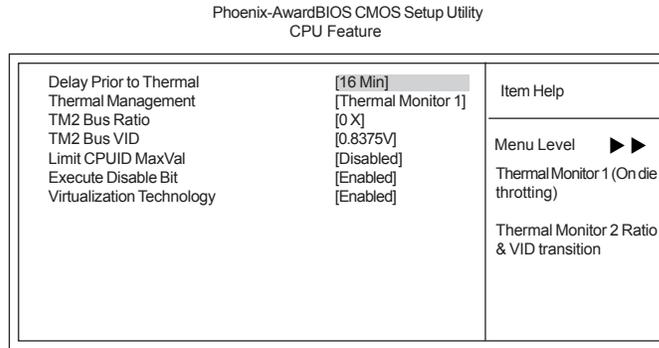
Phoenix-AwardBIOS CMOS Setup Utility
CPU Feature

Delay Prior to Thermal	[16 Min]	Item Help
Thermal Management	[Thermal Monitor 1]	
TM2 Bus Ratio	[0 X]	
TM2 Bus VID	[0.8375V]	Menu Level ▶ ▶
Limit CPUID MaxVal	[Disabled]	
Execute Disable Bit	[Enabled]	Thermal Monitor 1 (On die throtting)
Virtualization Technology	[Enabled]	
		Thermal Monitor 2 Ratio & VID transition

↑↓→←: Move   Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6"Fail-Safe Defaults   F7:Optimized

DelayPrior to Thermal (16 Min)

Enables you to set the delay time before the CPU enters auto thermal mode.

Thermal Management (Thermal Monitor 1)

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

TM2 Bus Ratio (0X)

This item represents the frequency (bus ratio) of the throttled performance state that will be initiated when the on-die sensor goes from not hot to hot).

Using BIOS

TM2 Bus VID (0.8375V)

This item represents the voltage of the throttled performance state that will be initiated when the on-die sensor goes from not hot to hot.

Limit CPUID MaxVal (Disabled)

This item can support Prescott CPUs for old OS. Users please note that under NT 4.0, it must be set "Enabled", while under WinXP, it must be set "Disabled".
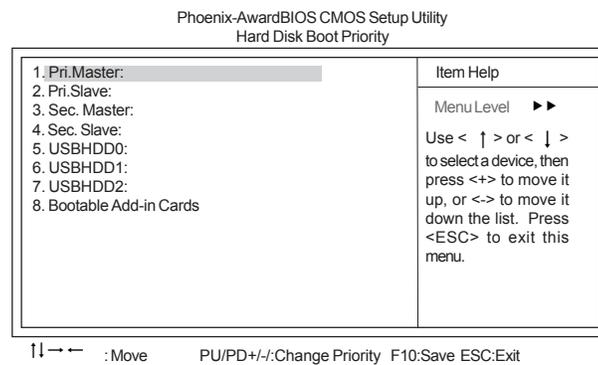
Execute Disable Bit (Enabled)

This item is a security feature that helps you protect your CPU and operating system against malicious software executing code. This item is available when CPU supports the feature.

Intel Virtualization Technology (Enabled)

When enabled, a VMM can utilize the additional hardware capabilities provided by Vandor pool Technology.

▶ **Hard Disk Boot Priority (Press Enter)**

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

```
                  Phoenix-AwardBIOS CMOS Setup Utility
                         Hard Disk Boot Priority
 ┌──────────────────────────────────────┬─────────────────────────┐
 │ 1. Pri.Master:                       │   Item Help             │
 │ 2. Pri.Slave:                        ├─────────────────────────┤
 │ 3. Sec. Master:                      │   Menu Level    ▶ ▶     │
 │ 4. Sec. Slave:                       │                         │
 │ 5. USBHDD0:                          │ Use < ↑ > or < ↓ >      │
 │ 6. USBHDD1:                          │ to select a device, then│
 │ 7. USBHDD2:                          │ press <+> to move it    │
 │ 8. Bootable Add-in Cards             │ up, or <-> to move it   │
 │                                      │ down the list. Press    │
 │                                      │ <ESC> to exit this      │
 │                                      │ menu.                   │
 │                                      │                         │
 └──────────────────────────────────────┴─────────────────────────┘
 ↑↓→←   : Move       PU/PD+/-/:Change Priority  F10:Save ESC:Exit
```

CPU L1&L2 Cache (Enabled)

All processors that can be installed in this mainboard use internal level 1 (L1) and external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

CPU L3 Cache (Enabled)

This item is only available when processors support L3. Some high-end processors support L3. If the CPU do support L3, you may set this item to enable or disable. Leave this item at the default value for better performance.

Hyper-Threading Technology (Enabled)

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

Quick Power On Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

First/Second/Third Boot Device (Floppy/Hard Disk/CDROM)

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

Boot Other Device (Enabled)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second, and Third boot devices.

Boot Up Floppy Seek (Disabled)

If this item is enabled, it checks the size of the floppy disk drives at start-up time. You don't need to enable this item unless you have a legacy diskette drive with 360K capacity.

Boot Up NumLock Status (On)

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

Gate A20 Option (Fast)

This item defines how the system handles legacy software that was written for an earlier generation of processors. Leave this item at the default value.

Typematic Rate Setting (Disabled)

If this item is enabled, you can use the following two items to set the typematic rate and the typematic delay settings for your keyboard.

- • **Typematic Rate (Chars/Sec)**: Use this item to define how many characters per second are generated by a held-down key.
- • **Typematic Delay (Msec):** Use this item to define how many milliseconds must elapse before a held-down key begins generating repeat characters.

Security Option (Setup)

If you have installed password protection, this item defines if the password is required at system start up, or if it is only required when a user tries to enter the Setup Utility.

APIC Mode (Enabled)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

OS Select For DRAM > 64 MB (Non-OS2)

This item is only required if you have installed more than 64 MB of memory and you are running the OS/2 operating system. Otherwise, leave this item at the default.

HDD S.M.A.R.T Capability (Disabled)

The S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

Report No FDD For WIN 95 (Yes)

Set this item to the default if your are running a system with no floppy drive and using Windows 95; this ensures compatibility with the Windown 95 logo certification.
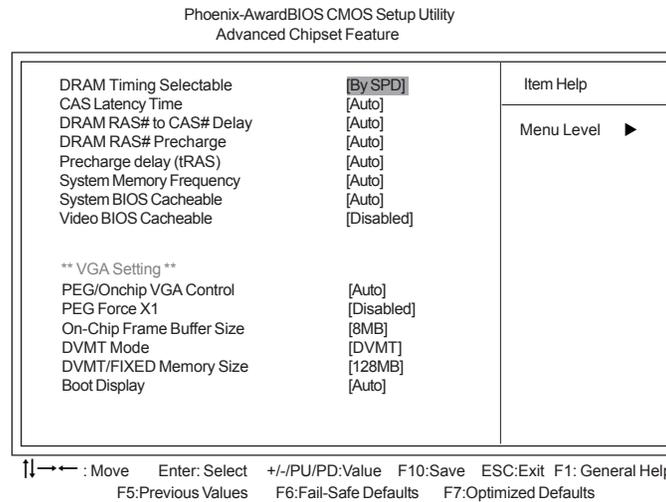
Small Logo (EPA) Show (Disabled)

This item enables or disables the display of the EPA logo during boot.

Press <Esc> to return to Advanced BIOS Features screen.

Using BIOS

Advanced Chipset Features

These items define critical timing parameters of the motherboard. You should leave the items on this page at their default values unless you are very familiar with the technical specifications of your system hardware. If you change the values incorrectly, you may introduce fatal errors or recurring instability into your system.

```
                          Phoenix-AwardBIOS CMOS Setup Utility
                                Advanced Chipset Feature

     ┌────────────────────────────────────────────────────┬──────────────────────┐
     │   DRAM Timing Selectable        [By SPD]            │    Item Help         │
     │   CAS Latency Time              [Auto]              │                      │
     │   DRAM RAS# to CAS# Delay       [Auto]              │    Menu Level    ▶   │
     │   DRAM RAS# Precharge           [Auto]              │                      │
     │   Precharge delay (tRAS)        [Auto]              │                      │
     │   System Memory Frequency       [Auto]              │                      │
     │   System BIOS Cacheable         [Auto]              │                      │
     │   Video BIOS Cacheable          [Disabled]          │                      │
     │                                                     │                      │
     │   ** VGA Setting **                                 │                      │
     │   PEG/Onchip VGA Control        [Auto]              │                      │
     │   PEG Force X1                  [Disabled]          │                      │
     │   On-Chip Frame Buffer Size     [8MB]               │                      │
     │   DVMT Mode                     [DVMT]              │                      │
     │   DVMT/FIXED Memory Size        [128MB]             │                      │
     │   Boot Display                  [Auto]              │                      │
     │                                                     │                      │
     └────────────────────────────────────────────────────┴──────────────────────┘
     ↑↓→←  : Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit  F1: General Help
                F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults
```

DRAM Timing Selectable (By SPD)

The value in this field depends on performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

CAS Latency Time (Auto)

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

DRAM RAS# to CAS# Delay (Auto)

This field allows you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Disabled gives faster performance; and Enabled gives more stable performance.

DRAM RAS# Precharge (Auto)

Select the number of CPU clocks allocated for the Row Address Strobe (RAS#) signal to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost.

Precharge delay (tRAS)

The precharge time is the number of cycles it takes for DRAM to accumulate its charge before refresh.

System Memory Frequency (Auto)

This item sets the main memory frequency. When you use an external graphics card, you can adjust this to enable the best performance for your system.

Using BIOS

System BIOS Cacheable (Disabled)
This item allows the system to be cached in memory for faster execution. Enable this item for better performance.

Video BIOS Cacheable (Disabled)
The item allows the video BIOS to be cached in memory for faster execution.

PEG/Onchip VGA Control (Auto)
This item allows you to choose the primary display card.

PEG Force X1 (Disabled)
This item is used to select PCI Express X1 forcedly.

On-chip Frame Buffer Size (8MB)
This allows you to set the VGA frame buffer size.

DVMT Mode (DVMT)
DVMT is Dynamic Video Memory Technology. This item helps you select video mode.

DVMT/FIXED Memory Size (128MB)
DVMT is Dynamic Video Memory Technology; this item allows you to select a maximum size of dynamic amount usage of video memory. The system would configure the video memory depends on your application.

Boot Display (Auto)
This item is for Intel define ADD card only.

Integrated Peripherals

These options display items that define the operation of peripheral components on the system's input/output ports.

Phoenix-AwardBIOS CMOS Setup Utility
Integrated Peripherals

▶ OnChip IDE Device	[Press Enter]	Item Help
▶ Onboard Device	[Press Enter]	
▶ SuperIO Device	[Press Enter]	Menu Level ▶▶

↑↓→← : Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

▶ OnChip IDE Device (Press Enter)

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

Phoenix-AwardBIOS CMOS Setup Utility
OnChip IDE Device

IDE HDD Block Mode	[Enabled]	Item Help
ATA 66/100 Cable Msg	[Enabled]	
IDE DMA transfer access	[Enabled]	Menu Level ▶▶
On-Chip Primary PCI IDe	[Enabled]	If your IDE hard drive sup-
IDE Primary Master PIO	[Auto]	ports block mode select
IDE Primary Slave PIO	[Auto]	Enabled for automatic detec-
IDE Primary Master UltraDMA	[Auto]	tion of the optimal number of
IDE Primary Slave UltraDMA	[Auto]	block read/writes per sec-
On-Chip Secondary PCI IDE	[Enabled]	tor the drive can support
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UltraDMA	[Auto]	
IDE Secondary Slave UltraDMA	[Auto]	
** On-Chip Serial ATA Setting**		
On-Chip Serial ATA	[Auto]	
SATA PORT Speed Settings	[Disabled]	
PATA IDE Mode	[Primary]	

↑↓→← : Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

IDE HDD Block Mode (Enabled)

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

ATA66/100 Cable Msg (Enabled)

This item enables or disables the display of the ATA 66/100 Cable MSG.

Using BIOS

IDE DMA transfer Access (Enabled)
This item allows you to enabled the transfer access of the IDE DMA.

On-Chip Primary/Secondary PCI IDE (Enabled)
The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel separately.

IDE Primary/Secondary Master/Slave PIO (Auto)
Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input/Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best, or select a PIO mode from 0-4.

IDE Primary/Secondary Master/Slave UltraDMA (Auto)
This mainboard supports UltraDMA technology, which provides faster access to IDE devices. If you install a device that supports UltraDMA, change the item on this list to Auto. You may have to install the UltraDMA driver supplied with this mainboard in order to use an UltraDMA device.

On-chip Serial ATA (Auto)
Enables and disables the built-in on-chip serial ATA.

SATA PORT Speed Settings (Disabled)
This item is used to select SATA I or SATA II device support forcedly.

PATA IDE Mode (Primary)
This item is used to set the PATA IDE mode. When set to Primary, P1 and P3 are Secondary; on the other hand, when set to Secondary, P0 and P2 are Primary.

Press <Esc> to return to the Integrated Peripherals page.

Using BIOS

► **Onboard Device (Press Enter)**
Scroll to this item and press <Enter> to view the following screen:

Phoenix-AwardBIOS CMOS Setup Utility
Onboard Device

		Item Help
USB Controller	[Enabled]	
USB 2.0 Supports	[Enabled]	
USB Keyboard Support	[Enabled]	Menu Level ► ►
USB Mouse Support	[Enabled]	
Azalia/AC97 Audio Select	[Auto]	
Onboard LAN Device	[Enabled]	
Onboard Lan Boot ROM	[Disabled]	
Onboard 1394 Device	[Enabled]	

↑↓ → ← : Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults
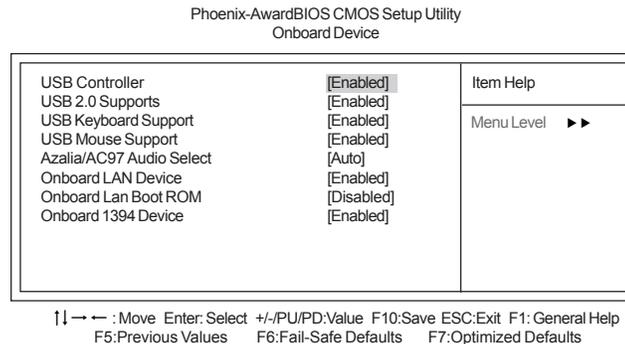
USB Controller (Enabled)
Enables or disables the onboard USB controller. We recommend users keep the dafault value. Disabling it might cause the USB devices not to work properly.

USB 2.0 Supports (Enabled)
This item enables or disables the onboard USB 2.0.

USB Keyboard Support (Enabled)
Enable this item if you plan to use a keyboard connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

USB Mouse Support (Enabled)
Enable this item if you plan to use a mouse connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

Azalia/AC97 Audio Select (Auto)
Enables or disables the onboard Azalia/AC 97 audio function. Disable this item if you are going to install a PCI audio add-on card.

Onboard LAN Device (Enabled)
Enables and disables the onboard LAN.

Onboard LAN BOOT ROM (Disabled)
This item allows you to enable or disable the onboard LAN Boot ROM function.

Onboard 1394 Device (Enabled)
Enable this item if you plan to use the 1394 device.

Press <Esc> to return to the Integrated Peripherals page.

Using BIOS

Power Management Setup

This option lets you control system power management. The system has various power-saving modes including powering down the hard disk, turning off the video, suspending to RAM, and software power down that allows the system to be automatically resumed by certain events.

Power Management Timeouts

The power-saving modes can be controlled by timeouts. If the system is inactive for a time, the timeouts begin counting. If the inactivity continues so that the timeout period elapses, the system enters a power-saving mode. If any item in the list of Reload Global Timer Events is Enabled, then any activity on that item will reset the timeout counters to zero.

Wake Up Calls

If the system is suspended or has been powered down by software, it can be resumed by a wake up call that is generated by incoming traffic to a modem, a LAN card, a PCI card, or a fixed alarm on the system realtime clock

```
                    Phoenix-AwardBIOS CMOS Setup Utility
                           Power Management Setup
┌─────────────────────────────────────────────────────────────────────────┐
│   ACPI Suspend Type              [S3(STR)]   ▲      Item Help             │
│   Run VGABIOS if S3 Resume       [Auto]                                   │
│   Video Off Method               [DPMS]                                   │
│   Video Off In Suspend           [Yes]             Menu Level   ▶         │
│   Suspend Type                   [Stop Grant]                             │
│   MODEM Use IRQ                  [3]                                      │
│   Soft-Off by PWR-BTTN           [Instant-Off]                           │
│   CPU THRM-Throttling            [50.0%]                                  │
│   Resume by PCI PME              [Enabled]                                │
│   Resume by Ring                 [Disabled]                              │
│   Resume by USB(S3)              [Disabled]                              │
│   Resume by Alarm                [Disabled]                              │
│ X Date (of Month) Alarm             0                                    │
│ X Time (hh:mm:ss)                 0 0 0                                  │
│                                                                          │
│   ** Reload Global Timer Events**                                        │
│   Primary IDE0                   [Disabled]                              │
│   Primary IDE 1                  [Disabled]                              │
│   Secondary IDE0                 [Disabled]   ▼                          │
└─────────────────────────────────────────────────────────────────────────┘
 ↑↓→← : Move   Enter: Select   +/-/PU/PD:Value   F10:Save   ESC:Exit  F1: General Help
         F5:Previous Values      F6:Fail-Safe Defaults    F7:Optimized Defaults
```

ACPI Suspend Type (S3(STR))

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

Run VGABIOS if S3 Resume (Auto)

This item allows the system to initialize the VGA BIOS from S3 (Suspend to RAM) sleep state.

Video Off Method (DPMS)

This item defines how the video is powered down to save power. This item is set to DPMS (Display Power Management Software) by default.

Video Off In Suspend (Yes)

This option defines if the video is powered down when the system is put into suspend mode.

Using BIOS

►SuperIO Device (Press Enter)

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

Phoenix-AwardBIOS CMOS Setup Utility
SuperIO Device

```
┌─────────────────────────────────────────────────────────────────┐
│  POWER ON Function            [Hot Key]  ┌──────────────────┐     │
│  Hot Key Power ON             [Ctrl-F12] │  Item Help       │     │
│  Onboard FDC Controller       [Enabled]  │                  │     │
│  Onboard Serial Port 1        [3F8/IRQ4] │                  │     │
│  Onboard Parallel Port        [378/IRQ7] │  Menu Level  ►►  │     │
│  Parallel Port Mode           [ECP]      │                  │     │
│  ECP Mode Use DMA             [3]        │                  │     │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
└─────────────────────────────────────────────────────────────────┘
```

↑↓→← :Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

POWER ON Function (Hot KEY)

This feature allows you to set the method by which your system can be turned on.

Hot Key Power On (Ctrl-F12)

When the POWER ON Function is set to Hot KEY, use this item to set the hot key combination that turns on the system.

Onboard FDC Controller (Enabled)

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

Onboard Serial Port 1 (3F8/IRQ4)

This option is used to assign the I/O address and interrupt request (IRQ) for onboard serial port 1 (COM1).

Onboard Parallel Port (378/IRQ7)

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

Parallel Port Mode (ECP)

Enables you to set the data transfer protocol for your parallel port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), and ECP+EPP.

SPP allows data output only. Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) are bi-directional modes, allowing both data input and output. ECP and EPP modes are only supported with EPP- and ECP-aware peripherals.

ECP Mode Use DMA (3)

When the onboard parallel port is set to ECP mode, the parallel port can use DMA3 or DMA1.

Press <Esc> to return to the Integrated Peripherals page.

Using BIOS

Suspend Type (Stop Grant)

If this item is set to the default Stop Grant, the CPU will go into Idle Mode during power saving mode.

MODEM Use IRQ (3)

If you want an incoming call on a modem to automatically resume the system from a power-saving mode, use this item to specify the interrupt request line (IRQ) that is used by the modem. You might have to connect the fax/modem to the motherboard Wake On Modem connector for this feature to work.

Soft-Off by PWR-BTTN (Instant-Off)

Under ACPI (Advanced Configuration and Power management Interface) you can create a software power down. In a software power down, the system can be resumed by Wake Up Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for four seconds to cause a software power down.

CPU THRM-Throttling (50.0%)

Use this item to specify the CPU speed (at percentage) to slow down the CPU when it reach the predetermined overheat temperature.

Resume by PCI PME (Enabled)

This item specifies whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume by Ring (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume by USB (S3)(Disabled)

This option allows the activity of the USB devices (keyboard and mouse) to wake-up the system from S3 sleep state.

Resume by Alarm (Disabled)

When set to Enabled, additional fields become available and you can set the date (day of the month), hour, minute and second to turn on your system. When set to 0 (zero) for the day of the month, the alarm will power on your system every day at the specified time.

** Reload Global Timer Events **

Global Timer (power management) events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything that occurs to a device that is configured as Enabled, even when the system is in a power-down mode.

Primary/Secondary IDE 1/0 (Disabled)

When these items are enabled, the system will restart the power-saving timeout counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels.

FDD, COM, LPT Port (Disabled)

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy disk drive, serial ports, or the parallel port.

Using BIOS

PCI PIRQ[A-D]# (Disabled)

When this item is enabled, any activity from one of the listed devices wakes up the system.

Power On After Power Fail (Off)

This item enables your computer to automatically restart or return to its last operating status after power returns from a power failure.

PNP/PCI Configurations

These options configure how PnP (Plug and Play) and PCI expansion cards operate in your system. Both the the ISA and PCI buses on the motherboard use system IRQs (Interrup ReQuests) and DMAs (Direct Memory Access). You must set up the IRQ and DMA assignments correctly through the PnP/PCI Configurations Setup utility for the motherboard to work properly. Selecting PnP/PCI Configurations on the main program screen displays this menu:

```
                    Phoenix-AwardBIOS CMOS Setup Utility
                           PnP/PCI Configurations
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│     Init Display First         [PCI Slot]        │   Item Help           │
│     Reset Configuration Data   [Disabled]        │                       │
│                                                  │                       │
│     Resources Controlled By    [Auto(ESCD)]      │   Menu Level    ► ►   │
│   x IRQ Resources              Press Enter       │                       │
│                                                  │                       │
│     PCI/VGA Palette Snoop      [Disabled]        │                       │
│     INT Pin 1 Assignment       [Auto]            │                       │
│     INT Pin 2 Assignment       [Auto]            │                       │
│     INT Pin 3 Assignment       [Auto]            │                       │
│     INT Pin 4 Assignment       [Auto]            │                       │
│     INT Pin 5 Assignment       [Auto]            │                       │
│     INT Pin 6 Assignment       [Auto]            │                       │
│     INT Pin 7 Assignment       [Auto]            │                       │
│     INT Pin 8 Assignment       [Auto]            │                       │
│                                                  │                       │
│     ** PCI Express relatvie items**              │                       │
│     Maximum Payload Size       [4096]            │                       │
└─────────────────────────────────────────────────────────────────────────┘
      ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save ESC:Exit  F1: General Help
         F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults
```

Init Display First (PCI Slot)

This item allows you to choose the primary display card.

Reset Configuration Data (Disabled)

If you enable this item and restart the system, any Plug and Play configuration data stored in the BIOS Setup is cleared from memory.

Resources Controlled By Auto (Auto(ESCD))

You should leave this item at the default Auto (ESCD). Under this setting, the system dynamically allocates resources to Plug and Play devices as they are required.

If you cannot get a legacy ISA (Industry Standard Architecture) expansion card to work properly, you might be able to solve the problem by changing this item to Manual, and then opening up the IRQ Resources submenu.

- **IRQ Resources**:In the IRQ Resources submenu, if you assign an IRQ to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press <Esc> to close the IRQ Resources submenu.
  In the Memory Resources submenu, use the first item Reserved Memory Baseto set the start address of the memory you want to reserve for the ISA

expansion card. Use the section item Reserved Memory Length to set the amount of reserved memory. Press <Esc> to close the Memory Resources submenu.

PCI/VGA Palette Snoop (Disabled)

This item is designed to overcome problems that can be caused by some non-standard VGA cards. This board includes a built-in VGA system that does not require palette snooping so you must leave this item disabled.

INT Pin 1-8 Assignment (Auto)

Identifies the interrupt request (IRQ) line assigned to a device connected to the PCI interface of your system.

Maximum Payload Size (4096)

This item specifies the maximum TLP payload size for the PCI Express devices. The unit is byte.

PC Health Status

On motherboards that support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.

Phoenix-AwardBIOS CMOS Setup Utility
PC Health Status

Shutdown Temperature [Disabled] CPU Warning Temperature [Disabled] Vcore (V) 5VSB (V) 3.3V 5.0V +12V VBT Current System Temperature Current CPU Temperature Current System Fan Speed Current CPU Fan Speed	Item Help Menu Level ▶

↑↓→← : Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Shutdown Temperature (Disabled)

Enables you to set the maximum temperature the system can reach before powering down.

CPU Warning Temperature (Disabled)

This item allows users to set the CPU warning temperature. The default setting is Disabled. Users may change it to 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F, or 80°C/176°F

System Component Characteristics

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

- Vcore
- 5VSB (V)
- +3.3V
- +5V
- +12V
- VBT (V)
- Current System Temperature
- Current CPU Temperature
- Current System FAN Speed
- Current CPU FAN Speed

Using BIOS

Frequency Control

This item enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.

```
                        Phoenix-AwardBIOS CMOS Setup Utility
                                 Frequency Control

    ┌──────────────────────────────────────────┬──────────────────────────┐
    │ CPU Clock Ratio              [16X]        │   Item Help              │
    │ Auto Detect PCI Clk          [Enabled]    │                          │
    │ Spread Spectrum              [Enabled]    │   Menu Level    ▶        │
    │ CPU Clock                    [200MHz]      │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    │                                            │                          │
    └──────────────────────────────────────────┴──────────────────────────┘
   ↑↓→← : Move    Enter: Select   +/-/PU/PD:Value  F10:Save  ESC:Exit F1: General Help
             F5:Previous Values    F6:Fail-Safe Defaults    F7:Optimized Defaults
```

CPU Clock Ratio (16X)

Enables you to set the CPU clock. The CPU clock ratio times the CPU Host/PCI Clock should equal the core speed of the installed processor.

Example:	*CPU Clock Ratio*	*16*
	CPU Frequency	*x 200*
	Installed CPU Clock Speed	*3200MHz*

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)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU Clock (200MHz)

This item allows you to adjust the CPU clock to 200MHz. You can key-in the numbers within the range to make a precise and ideal adjustment.

Load Fail-Safe Defaults Option

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility: Press <Y> and the <Enter> to install the defaults. Press <N> and then <Enter> to not install the defaults. The fail-safe defaults place no great demands on the system and are generally stable. If your system is not functioning correctly, try installing the fail-safe defaults as a first step in getting your system working properly again. If you only want to install fail-safe defaults for a specific option, select and display that option, and then press <F6>.

Load Optimized Defaults Option

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. You can cause fatal errors or instability if you install the optimized defaults when your hardware does not support them. 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.*

Set Password

When this function is selected, the following message appears at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter BIOS Setup freely.

PASSWORD DISABLED

If you have selected "**System**" in "Security Option" of "BIOS Features Setup" menu, you will be prompted for the password every time the system reboots or any time you try to enter BIOS Setup.

If you have selected "**Setup**" at "Security Option" from "BIOS Features Setup" menu, you will be prompted for the password only when you enter BIOS Setup.

Supervisor Password has higher priority than User Password. You can use Supervisor Password when booting the system or entering BIOS Setup to modify all settings. Also you can use User Password when booting the
system or entering BIOS Setup but can not modify any setting if Supervisor Password is enabled.

Save & Exit Setup

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 <Y> to save and exit, or press <N> to return to the main menu.

Exit Without Saving

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 <Y> to discard changes and exit, or press <N> to return to the main menu.

> *If you have made settings that you do not want to save, use the "Exit Without Saving" item and press <Y> to discard any changes you have made.*

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Memo

Chapter 4
Using the Motherboard Software

About the Software CD-ROM

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.

> *Intel HD Audio Installation (optional): 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.*

Auto-installing under Windows 2000/XP

The Auto-install CD-ROM makes it easy for you to install the drivers and software for your motherboard.

> *If the Auto-install CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.*

The support software CD-ROM disc loads automatically under Windows 2000/XP. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.
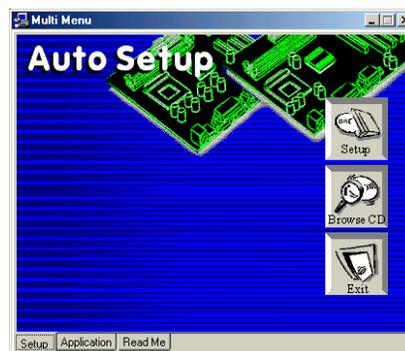
> *If the opening screen does not appear; double-click the file "setup.exe" in the root directory.*

Setup Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.
	Before installing the software from Windows Explorer, look for a file named README.TXT, INSTALL.TXT or something similar. This file may contain important information to help you install the software correctly.
	Some software is installed in separate folders for different operating systems, such as Windows 2000/XP. Always go to the correct folder for the kind of OS you are using.
	In install the software, execute a file named SETUP.EXE or INSTALL.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **EXIT** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

Read Me Tab

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

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

1. Click **Setup.** The installation program begins:
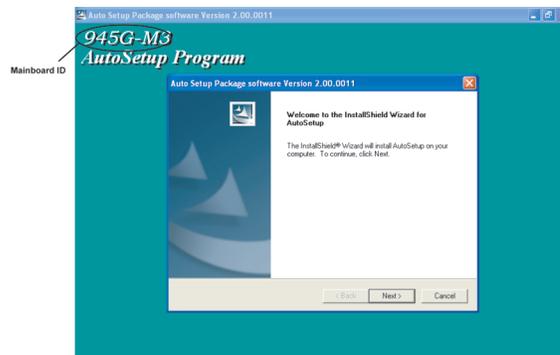
The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

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

Using the Motherboard Software

2. Click **Next.** *The following screen appears:*
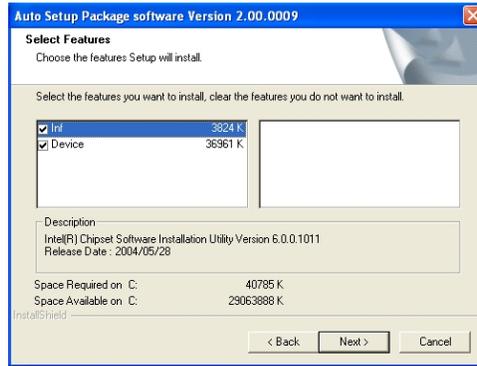
3. *Check the box next to the items you want to install. The default options are recommended.*

4. Click **Next** *run the Installation Wizard. An item installation screen appears:*
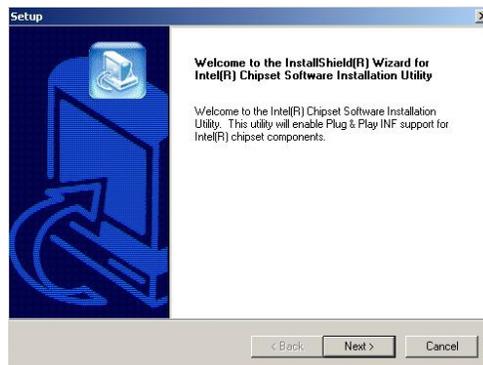
5. *Follow the instructions on the screen to install the items.*

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.

Manual Installation

Insert the CD in the CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support CD for available software.

This concludes Chapter 4.

Caractéristiques

Processeur

La carte mère utilise un type LGA775 d'Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D comportant les caractéristiques suivantes :

- Peut recevoir les processeurs Intel Core™ 2 Duo/Pentium D/ Pentium 4/ Celeron D
- Support un bus système (FSB) de 1066/800/533 MHz
- Supporte le CPU de technologie "Hyper-Threading"

La technologie "Hyper-Threading" permet au système d'exploitation de penser qu'il est connecté à deux processeurs, permettant d'exécuter deux threads en parallèle, à la fois sur des processeurs 'logiques' dans le même processeur physique.

Chipset

Le chipset 945G Northbridge (NB) Chipset et ICH7 Southbridge (SB) se base sur une architecture innovante et évolutive avec des performances et une fiabilité éprouvées.

945G (NB)
- Prend en charge l'adressage de bus hôte 32 bits, permettant au CPU d'accéder à l'espace de 4 Go complet d'adresse mémoire.
- Interface Direct Media (DMI) point à point de 2 Go/s vers chaque direction ICH7 (1 Go/s).
- Prend en charge un PCI Express x16 pour Interface Graphique, entièrement conforme à la Spécification de Base PCI Express révision 1.0a.
- Prend en charge les technologies DDR2 256-Mb, 512-Mb et 1-Gb pour x8 et x16 périphériques
- Prend en charge la Configuration 3D et moteur de Rendu et moteur de texture de haute qualité.

ICH7 (SB)
- Fonctions de Contrôleur DMA Amélioré, de contrôleur d'interruption, et de minuterie
- Conforme aux spécifications de base PCI Express, Révision 1.0a
- Conforme aux spécifications PCI 2.3.
- Conforme aux spécifications ATA II Série
- Contrôleur d'Hôte USB 2.0 intégré prenant en charge jusqu'à huit ports USB 2.0
- Contrôleur LAN intégré
- Conforme au(x) codec(s) audio de haute définition AC'97/Intel prenant en charge les sorties audio à 8 canaux
- Contrôleur IDE intégré prenant en charge Ultra ATA100/66/33

Mémoire

- SDRAM DDR 667/533/400 DDR2 avec architecture en double canal
- Reçoit deux DIMM sans tampon
- Jusqu'à 1 Go par DIMM avec une taille de mémoire maximum de 2 Go

Graphique

- Configuration 3D et moteur de rendu
- Prise en charge du rendu de zone
- Moteur de texture de haute qualité

1394a FireWire (Optionnel)

- Conforme au contrôleur d'hôte à puce simple pour IEEE 1394-1995 et IEEE1394a-2000
- PHY à 2 ports intégré de 400 Mbits pour le Bus PCI
- Alimentation 3,3V avec entrées tolérantes de 5V.

LAN sur carte (optionnel)

Le contrôleur LAN interne offre les caractéristiques suivantes:

• Emetteur-récepteur 10/100/1000 intégré • Prend en charge PCI v2.3, 32 bits, 33/66-MHz • Prise en charge totale avec IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• Fonctionnement en auto-négociation N-way 10/100 Mb/s • Prend en charge le fonctionnement en half/full duplex • Prise en charge de Réveil par LAN et réveil distant

Audio (optionnel)

• 8 canaux de format PCM 24/20/16-bits de support DAC pour solution audio 7.1 • Supporte la vitesse d'échantillonnage DAC de 192K/96K/48K/44,1KHz • Support d'alimentation : Numérique : 3,3V; Analogique : 3,5V~5,25V • Conforme aux exigences audio de Microsoft WHQL/WLP 2.0 • Compatible Direct Sound 3D™ • Sortie de codeur Dolby Digital pour application électronique consommateur
• Conforme à l'audio haute définition d'Intel, prenant en charge les DAC à 8 canaux avec rapport S/B de 95dB • Compatibilités: 192/96/48/44.1 KHz avec 24/20/16 bits • Support d'alimentation : Numérique : 3,3V; Analogique : 3,3V/5,0V • Toutes les prises analogiques sont des entrées et sorties stéréo avec réattribution des tâches pour plug & play analogique • Conforme aux exigences audio de Microsoft WHQL/WLP 2.0 • Compatible Direct Sound 3D™ • Sortie de codeur Dolby Digital pour application électronique consommateur
• Conforme aux spécifications AC'97 2.3 • Prend en charge le CODEC audio 6 canaux destiné aux systèmes multimédia PC • Offre trois entrées stéréo de niveau de ligne analogique avec contrôle de volume 5 bits: Ligne d'entrée, CD, AUX • Conforme aux exigences audio de Microsoft WHQL/WLP 2.0

Options d'extension

La carte mère comporte les options d'extension suivantes :

- Un logement PCI Express x16 pour interface graphique
- Un logement PCI Express x1
- Deux emplacements PCI v2.3 32bits
- Un en-têtes demi-hauteur IDE de 40 broches supportant deux canaux IDE
- Une interface lecteur de disquettes
- Quatre connecteurs SATA à 7 broches

La carte mère prenant en charge la maîtrise de bus UltraDMA avec vitesses de transfert de 100/66 Mo/s.

E/S intégrées

La carte mère comporte un ensemble complet de connecteurs et de ports E/S :

- Deux ports PS/2 pour souris et clavier
- Un port série
- Un port parallèle
- Un port VGA
- Quatre ports USB
- Un port 1394 (optionnel)
- Un port LAN (optionnel)
- Prises audio pour entrée microphone, entrée de ligne et Audio Haute Définition 8 ch.

Microprogramme BIOS

La carte mère utilise Award BIOS qui permet à l'utilisateur de configurer bon nombre de fonctions du système, dont :

- Gestion d'alimentation
- Alertes de réveil
- Paramètres de CPU
- Synchronisation de CPU et de mémoire

Le micro-programme peut également être utilisé pour définir les paramètres pour différentes vitesses d'horloge de processeur.

> *Certaines spécifications matérielles et certains éléments logiciels sont susceptibles de modification sans préavis.*

Features

Prozessor

Das Mainboard verwendet einen LGA775 Typ Intel Core™2 Duo/ Pentium D/Pentium 4/ Celeron D mit den folgenden Eigenschaften:

- Nimmt Intel Core™ 2 Duo/Pentium D/Pentium 4/ Celeron D Prozessoren auf
- Unterstützt einen Systembus (FSB) mit 1066/800/533 MHz.
- Unterstützt CPU mit "Hyper-Threading"-Technologie.

"Hyper-Threading"-Technologie läßt das Betriebssystem glauben, es sei an zwei Prozessoren angeschlossen, was zwei parallele Threads auf separaten 'logischen' Prozessoren im selben physischen Prozessor erlaubt.

Chipsatz

Die 945G Northbridge (NB) und ICH7 Southbridge (SB) Chipsätze basieren auf einer innovativen und skalierbaren Architektur mit bewiesener Zuverlässigkeit und Leistung.

945G (NB)	• Unterstützung einer 32-Bit Host-Bus-Adressierung, welche der CPU einen Zugriff zum kompletten Speicherplatz von 4 GB erlaubt.
	• 2 GB/s Punkt-zu-Punkt Direct Media Interface (DMI) zu ICH7 (1 GB/s) in jede Richtung.
	• Unterstützung von PCI Express x16 für die Grafikschnittstelle, gemäß den PCI Express-Base-Spezifikationen Revision 1.0a.
	• Unterstützung von 256-Mb, 512-Mb und 1-Gb DDR2-Technologien für x8 und x16 Zubehör.
	• Unterstützt 3D Setup, Render-Engine und qualitativ hochwertiger Texture-Engine
ICH7 (SB)	• Verbesserter DMA-Kontroller, Unterbrechungskontroller und Zeitfunktionen.
	• Gemäß PCI Express-Base-Spezifikationen, Revision1.0a.
	• Gemäß Spezifikationen von PCI 2.3.
	• Gemäß Serial ATA II Spezifikationen.
	• Integrierter USB 2.0 Host-Kontroller, welcher bis zu acht USB 2.0 Steckvorrichtungen unterstützt.
	• Integrierter LAN-Kontroller.
	• Entspricht AC'97/Intel High Definition Audio Codec(s), unterstützt 8-Kanal Audioausgabe
	• Integrierter IDE-Kontroller, welcher Ultra ATA100/66/33 unterstützt.

Arbeitsspeicher

- DDR2 667/533/400 DDR SDRAM mit Dualkanal Architektur
- Es können zwei ungepufferte DIMMs aufgenommen werden.
- Bis zu 1 GB pro DIMM mit maximaler Speicherkapazität von bis zu 2 GB.

Grafik

- 3D-Setup und Render Engine
- Unterstützt Zone Rendering
- Qualitativ hochwertiger Texture Engine

1394a FireWire (Optional)

- Kompatibel mit Singlechip-Host Controller für IEEE 1394-1995 und IEEE1394a-2000
- Integrierter 400 Mbit 2-Port PHY für den PCI-Bus
- 3.3V Stromversorgung mit 5V-toleranten Eingängen

Onboard LAN (Optional)

Der Onboard-LAN-Kontroller hat folgende Eigenschaften:

• Enthält 10/100/1000 Transceiver • Unterstützung von PCI v2.3, 32-Bit, 33/66-MHz • Volle Unterstützung mit IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• 10/100 Mb/s N-Way Auto-Negotiation-Betrieb • Unterstützt Halb-/Vollduplex • Unterstützung für Wake-on-LAN(WOL) und Remote Wake-up

Audio (Optional)

• 8-Kanal DAC Unterstützung 24/20/16-Bit PCM-Format für 7.1 Audio • Unterstützt 192K/96K/48K/44.1KHz DAC Abtastrate • Netzteilunterstützung: Digital: 3,3V; Analog: 3,5V~5,25V • Erfüllt Audioanforderungen für Microsoft WHQL/WLP 2.0 • Kompatibel mit Direct Sound 3D™ • Dolby Digital Encoder-Output für Unterhaltungselektronik
• Entspricht Intel High Definition Audio, unterstützt 8-Kanal DACs mit 95dB S/N Ratio • Kompatibilität: 192/96/48/44.1 KHz mit 24/20/16 Bits • Stromversorgung: Digital: 3.3V; Analog: 3.3V/5.0V • Alle analogen Buchsen mit Stereo-Input und Output-Retasking für analoges Plug & Play • Erfüllt Audioanforderungen für Microsoft WHQL/WLP 2.0 • Kompatibel mit Direct Sound 3D™ • Dolby Digital Encoder-Output für Unterhaltungselektronik
• Entspricht AC'97 v2.3 CODEC • Unterstützt 6-Kanal Audio CODEC, entwickelt für Multimedia PC-Systeme • Stellt drei analoge Line-Level Stereoeingänge mit 5-bit Lautstärkeregelung zur Verfügung: Line-in, CD, AUX • Erfüllt Audioanforderungen für Microsoft WHQL/WLP 2.0

Erweiterungsmöglichkeiten

Das Mainboard ist mit den folgenden Erweiterungsmöglichkeiten ausgestattet:

- Ein PCI Express-Slot x16 für Grafik-Interface
- Ein PCI Express x1 Slot
- Zwei 32-bit PCI v2.3-Steckplätze
- Einen 40-Pin IDE low profile-Stecker, die zwei IDE-Kanäle unterstützen
- Ein Diskettenlaufwerkanschluss
- Vier 7-Pin SATA Anschlüsse

Die Mainboard unterstützt UltraDMA Bus Mastering mit einer Übertragungsrate von 100/66 MB/Sek.

Integrierte I/O-Schnittstellen

Das Mainboard verfügt über einen kompletten Satz von I/O-Schnittstellen und Anschlüssen:

- Zwei PS/2-Anschlüsse für Maus und Tastatur
- Eine serielle Schnittstelle
- Eine parallele Schnittstelle
- Eine VGA Schnittstelle
- Vier USB Schnittstelle
- Ein 1394-Anschluss (optional)
- Ein LAN-Anschluss (optional)
- Audiostecker fur Mikrofoneingang, line-in und hoch definiertem Ton mit 8 Kanalen

BIOS-Firmware

Das Mainboard verwendet Award BIOS, das es Benutzern gestattet, viele Systemfunktionen inkl. der Folgenden zu konfigurieren:

- Energieverwaltung
- Aufweckfunktionen
- CPU-Parameter
- CPU- und Arbeitsspeicherfrequenz

Die Firmware kann auch zur Einstellung von Parametern für verschiedene Prozessortaktge-schwindigkeiten verwendet werden.

Manche Hardwarespezifikationen und Softwareelemente können ohne Ankün-digung geändert werden.

Caratteristiche

Processore

La scheda madre utilizza un tipo LGA775 di processore Intel Core™2 Duo / Pentium D/ Pentium 4 / Celeron D che offre le seguenti caratteristiche:

- Compatibile con processori Intel Core™ 2 Duo / Pentium D/Pentium 4 / Celeron D
- Supporta un bus di sistema (FSB) fino a 1066/800/533 Mhz
- Supporta CPU con tecnologia "Hyper Threading"

La tecnologia "Hyper-Threading" induce il sistema operativo a pensare di essere collegato a due processori, questo permette di eseguire due thread in parallelo, ambedue su processori "logicamente" separati all'interno dello stesso processore.

Chipset

I chipset Intel 945G Northbridge (NB) e ICH7 Southbridge (SB) sono basati su una architettura innovativa e scalabile dalle prestazioni e affidabilità garantite.

945G(NB)
- Supporta un indirizzamento host bus da 32 bit, consentendo alla CPU di accedere a tutti i 4 GB della memoria di sistema.
- Interfaccia DMI (Direct Media Interface) point-to-point da 2 GB/s in ciascuna direzione (1 GB/s) ICH7.
- Supporta un PCI Express x16 per interfaccia grafica, completamente compatibile con le specifiche di revisione 1.0a di PCI Express Base.
- Supporta tecnologie DDR2 da 256-Mb, 512-Mb e 1-Gb per dispositivi x8 e x16
- Supporto di setup 3D, motore di rendering e Motore di trama ad alta qualità.

ICH7 (SB)
- Controller DMA migliorato, controller interrupt e funzioni di timer
- Compatibile con le Specifiche di base del PCI Express, Revision1.0a
- Conforme alle specifiche PCI 2.3.
- Conforme alle specifiche Serial ATA II
- Host Controller USB 2.0 integratoin grado di supporare sino a 8 porte USB 2.0
- Controller LAN integrato
- Conforme a specifiche AC'97/Intel High Definition Audio con supporto di uscite audio a 8 canali
- Integrato con controller IDE supporta Ultra ATA100/66/33

Memoria

- Supporto di SDRAM DDR 667/533/400 DDR2 con architettura Dual Channel
- Alloggia 2 DIMM unbuffered
- Dimensione massima della DIMM pari ad 1 GB per un ammontare massimo di 2 GB di memoria

Grafica

- Setup 3D e motore di rendering
- Supporto di rendering delle aree
- Motore di trama ad alta qualità

FireWire 1394a (Opzionale)

- Conforme a host controller Single Chip per IEEE1394-1995 e IEEE1394a-2000
- PHY a 2 porte da 400 Mbit integrato per il bus PCI
- Alimentazione a 3,3 V con ingressi dotati di tolleranza di 5 V

Multi-Language Translation

LAN integrata (opzionale)

La funzionalità LAN integrata sulla scheda offre le seguenti caratteristiche:

• Transceiver 10/100/1000 integrato • Supporta PCI v2.3, 32-bit, 33/66-MHz • Completamente conforme con l'IEEE 802.3,IEEE 802.3u, IEEE 802.3ab
• Operazioni di auto-negoziazione N-way 10/100 Mb/s • Supporto di funzionalità half/full duplex • Supporto di funzionalità Wake-on-LAN e riattivazione remota

Audio (opzionale)

• 8 canali per formato PCM a 24/20/16 bit con supporto DAC per soluzioni audio 7.1 • Supporto di velocità di campionamento DAC a 192K/96K/48K/44,1 KHz • Supporto alimentazione: Digitale: 3,3 V; Analogico: 3,5 V ~ 5,25 V • Conforme ai requisiti per audio di WHQL e WLP 2.0 di Microsoft • Compatibile con Direct Sound 3D™ • Uscita Dolby Digital Encorder per apparecchiature elettroniche di largo consumo
• Conforme con Intel High Definition Audio e supporto di DAC a 8 canali con rapporto S/N di 95 dB • Compatibili: 192/96/48/44.1 KHz a 24/20/16 bit • Supporto alimentazione: Digitale: 3,3V; Analogico: 3,3 V / 5,0 V • Tutti i jack analogici offrono ingresso e uscita stereo con riassegnazione a plug & play analogico • Conforme ai requisiti per audio di WHQL e WLP 2.0 di Microsoft • Compatibile con Direct Sound 3D™ • Uscita Dolby Digital Encorder per apparecchiature elettroniche di largo consumo
• Conforme alle specifiche AC'97 2.3 • Supporto di CODEC audio a 6 canali per sistemi PC multimediali • Tre ingressi analogici stereo lineari con controllo volume a 5 bit: Line-In, CD, AUX • Conforme ai requisiti per audio di WHQL e WLP 2.0 di Microsoft

Opzioni di espansione

La scheda madre è dotata delle seguenti opzioni di espansione

- Uno slot PCI Express x16 per interfaccia grafica
- Uno slot PCI Express x1
- Due slot PCI v2.3 a 32 bit
- Una connettori IDE a 40 pin che supportano due canali IDE
- Un'interfaccia per unità disco floppy
- Quattro connettori SATA a 7 pin.

La scheda madre supporta bus master UltraDMA con tasso di trasferimento di 100/66 MB/s.

I/O integrati

La scheda madre è dotata di un set completo di connettori e porte I/O:

- Due porte PS/2 per mouse e tastiera
- Una porta seriale
- Una porta parallela
- Una porta VGA
- Quattro porte USB
- Una porta 1394 (opzionale)
- Una porta LAN (opzionale)
- Jack audio per microfono, line-in e 8 canali audio ad alta definizione.

Firmware BIOS

Questa scheda madre adotto un BIOS Award che permette agli utenti di configurare le caratteristiche principali del sistema, inclusi:

- Gestione dell'alimentazione
- Allarmi di attivazione
- Parametri CPU
- Sincronizzazione di CPU e memoria

Il firmware può anche essere usato per impostare i parametri per diverse velocità di clock.

Alcune specifiche hardware e software potrebbero essere soggette a cambiamenti senza preavviso.

Características

Procesador

La placa principal usa un tipo LGA775 de Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D que lleva las sigtes. características:

- Acomoda procesadores Intel Core™ 2 Duo/Pentium D/ Pentium 4/ Celeron D
- Soporta un sistema de bus (FSB) de 1066/800/533 MHz
- Soporta CPU de tecnología "Hyper-Threading"

La tecnología "Hyper-Threading" habilita el sistema operativo para que piense como si estuviera conectado a dos procesadores, que permite dos hilos a correr en paralelo, ambos en procesadores "lógicos" dentro del mismo procesador físico.

Chipset

Los chipsets Northbridge 945G (NB) y Southbridge ICH7 (SB) están basados en una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

945G (NB)
- Soporta la dirección de bus anfitrión 32-bit, que permite la CPU acceder a todos los 4 GB del espacio de dirección de memoria.
- Interfaz Direct Media (DMI) punto a punto de 2 GB/s a ICH7 (1 GB/s) cada dirección.
- Soporta un PCI Express x16 para la Interfaz de Gráficas, completamente conforme a la Especificación Base PCI Express revisión 1.0a.
- Soporta las tecnologías 256-Mb, 512-Mb y 1-Gb DDR2 para los dispositivos x8 y x16.
- Soporta 3D setup, motor de rendimiento y Motor de textura de alta calidad

ICH7 (SB)
- Controlador DMA reforzado, controlador de interrupción y funciones de cornometraje.
- Conforme con la Especificación Base PCI Express, Revisión1.0a.
- Conforme con la espec. PCI 2.3.
- Conforme con la espec. Serial ATA II
- Controlador Anfitrión USB 2.0 Integrado soporta hasta ocho puertos USB 2.0.
- Controlador LAN integrado .
- Conformidad con el Codec de Audio de Alta Definición Intel/AC'97 que soporta salidas de audio de 8 canales
- Controlador IDE integrado soporta Ultra ATA100/66/33.

Memoria

- DDR SDRAM DDR2 667/533/400 con arquitectura de canal dual
- Acomoda dos DIMMS sin buffer
- Hasta 1 GB por DIMM con el tamaño de memoria máximo hasta 2 GB

Gráficas

- 3D setup y motor de rendimiento
- Soporte de Rendimiento de Zona
- Motor de textura de alta calidad

1394a FireWire (opcional)

- Conformidad con un controlador anfitrión de un solo chip para IEEE 1394-1995 y IEEE1394a-2000
- 400 Mbit 2-Port PHY integrado para el Bus PCI
- Suministro de 3.3V con Entradas Tolerantes de 5V

Multi-Language Translation

LAN en placa (opcional)

El controlador LAN abordo provee las sigtes. características:

• Transceptor 10/100/1000 integrado • Soporta PCI v2.3, 32-bit, 33/66-MHz • Soporte completo con el IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• Operación de autonegociación N-way de 100/10 Mb/s • Soporta capacidad duplex medio/completo • Soporta la función Wake-On-LAN y despertar remoto

Audio (opcional)

• 8 canales de formato PCM de 24/20/16-bit de soporte DAC para la solución de audio 7.1 • Soporta índice de muestreo DAC 192K/96K/48K/44.1KHz • Soporte de suministro: Digital: 3.3V; Analógico: 3.V~5.25V • Obedece a los requisitos de audio de Microsoft WHQL/WLP 2.0. • Compatible con Direct Sound 3D™ • Salida de Decondificador Dolby Digital para la aplicación de electrónicos de consumidores
• Conforme con el Audio de Alta Definición de Intel, que soporta DACs de 8 canales con proporción 95dB S/N • Compatibilidades: 192/96/48/44.1 KHz con 24/20/16 bits • Soporte de suministro: Digital: 3.3V; Analógico: 3.3V/5.0V • Todas las clavijas analógicas son de retoma de entrada y salida de estéreo para el plug & play analógico • Obedece a los requisitos de audio de Microsoft WHQL/WLP 2.0. • Compatible con Direct Sound 3D™ • Salida de Decondificador Dolby Digital para la aplicación de electrónicos de consumidores
• Conformidad con las especificaciones AC'97 2.3 • Soporta CODEC de audio de 6 canales diseñaods para los sistemas multimedia • Provee tres entradas en estéreo a nivel de línea análogicas con control de volumen de 5-bit: LIne-in, CD, AUX • Obedece a los requisitos de audio de Microsoft WHQL/WLP 2.0.

Opciones de expansión

La placa base viene con las opciones siguientes de expansión:
- Una ranuras PCI Express x16 para la Interfaz de Gráficas
- Una ranura PCI Express x1
- Dos ranuras conforme con 32-bit PCI v2.3
- Una cabezal de perfil bajo 40-pin IDE soporta dos canales IDE
- Una interfaz para unidad de disquete
- Cuatro conectores 7-pin SATA

La placa principal soporta el mastering de bus UltraDMA con índices de transferencia de 100/66 MB/s.

I/O integrado

La placa base tiene un conjunto completo de puertos I/O y conectores:

- Dos puertos PS/2 para ratón y de teclado
- Un puerto serie
- Un puerto paralelo
- Un puerto VGA
- Cuatro puertos USB
- Un puerto 1394 (opcional)
- Un puerto LAN (opcional)
- Clavijas de sonido para entrada de microfono, entrada de linea y Sonido de Alta Definicion de 8 canales.

Firmware de BIOS

La placa base utiliza Award BIOS que permite a los usuarios configurar muchas funciones de sistema, incluyendo las siguientes:

- Administración de energía
- Alarmas de encendido
- Parámetros CPU
- Temporización de memoria y CPU

El firmware también puede utilizarse para ajustar los parámetros para diversas velocidades del reloj del procesador.

Algunas especificaciones de hardware y elementos de software están sujetos a cambios sin previo aviso.

Características

Processador

Esta motherboard usa um tipo de Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D LGA775 que possui as seguintes características:

- • Acomoda processadores Intel Core™ 2 Duo/ Pentium D/ Pentium 4/ Celeron D
- • Suporta um bus sistema (FSB) de 1066/800/533 MHz
- • Suporta CPU de tecnologia "Hyper-Threading"

A tecnologia "Hyper-Threading" permite que o sistema operativo "pense" que está ligado a dois processadores, permitindo que sejam executados dois threads em paralelo, ambos em processadores "lógicos" separados dentro do mesmo processador físico.

Chipset

Os chipsets da 945G Northbridge (NB) e ICH7 Southbridge (SB) são baseados em uma arquitetura inovativa e escalável com performance e confiabilidade comprovada.

945G (NB)
- • Suporta um endereçamento no host bus de 32-bit, permitindo que o CPU aceda completamente aos 4 GB de espaço de endereçamento da memória.
- • Interface Media Directo (DMI) ponto-para-ponto com 2 GB/seg. para ICH7 (1 GB/seg.) cada direcção.
- • Suporta um PCI Express x16 Interface de Gráficos, que cumpre inteiramente com a revisão de Especificação de Base 1.0a. do PCI Express.
- • Suporta 256-Mb, 512-Mb e tecnologias 1-Gb DDR2 para aparelhos x8 e x16
- • Suporta Disposição 3D, Motor de Distribuição e motor de textura de alta qualidade

ICH7 (SB)
- • Controlador DMA Melhorado, controlador de interruptor, e funções de temporizador
- • Cumpre com a Especificação de Base do PCI Express, Revisão 1.0a
- • Em conformidade com a especificação PCI 2.3
- • Compatível com Série ATA II
- • Controlador Host 2.0 USB integrado suportando até oito portas USB 2.0
- • Controlador LAN integrado
- • Compatível com a(s) Codec Áudio Alta Definição AC'97/Intel suportando saídas áudio com 8 canais
- • Controlador IDE integrado suporta Ultra ATA100/66/33

Memória

- • DDR2 667/533/400 DDR SDRAM com arquitectura bicanal
- • Acomoda duas DIMMs sem buffers
- • Até 1 GB por DIMM com tamanho de memória máxima de até 2 GB

Gráficos

- • Instalação 3D e dispositivo de distribuição
- • Suporte de Distribuição de Zona
- • Dispositivo de textura de elevada qualidade

1394a FireWire (opcional)

- • Compatível com controlador host de chip único para IEEE 1394-1995 e IEEE1394a-2000
- • PHY integrado de 2 portas de 400 Mbits para o PCI Bus
- • Fonte de alimentação de 3.3V com Entradas Tolerantes de 5V

Multi-Language Translation

Onboard LAN (opcional)

O controlador LAN onboard contém as seguintes características:

• Transreceptor integrado 10/100/1000 • Suporta PCI v2.3, 32-bit, 33/66-MHz • Suporta inteiramente com IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• Funcionamento de auto-negociação 10/100 Mb/s N-way • Suporta capacidade de duplex pela metade/ou na totalidade • Suporte Wake-on-LAN (WOL) e wake-up remoto

Áudio (opcional)

• Formato 24/20/16-bit PCM com suporte DAC de 8 canais para solução áudio 7.1 • Suporta taxa de amostragem DAC 192K/96K/48K/44.1KHz DAC • Suporte de potência: Digital: 3.3V; Analógica: 3.5V~ 5.25V • Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft. • Compatível com Direct Sound 3D™ • Saída Descodificador Digital Dolby para aplicação electrónica de consumo
• Compatível com Alta Definição Áudio da Intel, suportando DACs com 8 canais com rácio 95dB S/N • Compatibilidades: 192/96/48/44.1 KHz com 24/20/16 bits • Suporte de alimentação: Digital: 3.3V; Analógico: 3.3V/5.0V • Todas as fichas analógicas são entradas estéreo e redistribuição de saídas para ligar & reproduzir analógico • Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft. • Compatível com Direct Sound 3D™ • Saída Descodificador Digital Dolby para aplicação electrónica de consumo
• Cumpre com as especificações AC'97 2.3 • Suporta CODEC áudio com 6 canais concebido para sistemas multimédia para PC • Fornece três entradas estéreo nível de linha analógicas com controlo de volume de 5 bits: LIne-in, CD, AUX • Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft.

Opções de Expansão

A motherboard é fornecida com as seguintes opções de expansão:

- Uma ranhura x 16 PCI Express para Interface de Gráficos
- Uma ranhura x1 PCI Express
- Duas ranhuras compatíveis com PCI v2.3 de 32 bits
- Uma cabeçalhos de baixo perfil IDE 40 pinos, que suportam dois dispositivos IDE
- Uma interface para unidade de disquete
- Quatro conectores SATA de 7 pinos

A motherboard suporta um domínio bus UltraDMA bus com taxas de Transferência de 100/66 MB/s.

I/O Integrado

A motherboard possui um conjunto completo de portas I/O e conectores:

- Duas portas PS/2 para o rato e o teclado
- Uma porta de série
- Uma porta paralela
- Uma porta VGA
- Quatro portas USB
- Uma porta 1394 (opcional)
- Uma porta LAN (opcional)
- Fichas áudio para microfone, alinhadas e com Áudio de Elevada Definição 8-ch

Firmware do BIOS

A motherboard usa o Award BIOS que permite aos usuários configurar vários recusos do sistema, como:

- Gerenciamento de energia
- Alarmes de reativação
- Parâmetros da CPU
- Sincronização da CPU e memória

O firmware também pode ser usado para definir os parâmetros de diferentes velocidades de clock do processador.

Alguns itens de software e especificação de hardware estão sujeitos a alterações sem prévio aviso.

機能

プロセッサ

本マザーボードは LGA775タイプのIntel Core™2 Duo/Pentium D/Pentium 4/ Celeron D
をサポートするもので、下記の特徴を持っています:
- Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D プロセッサの搭載が
可能
- 1066/800/533MHzのシステムバス(FSB)をサポート
- "ハイパースレッド技術対応のCPUを取り付け可能

ハイパースレッド(HT) 技術というのは、オペレーションシステムに2つのプロセッサが存在すると認識
させることで、実際には2つのスレッドを1つのプロセッサで同時に執行させ、平行利用を可能とする技
術です。

チップセット

945G Northbridge (NB)とICH7 Southbridge (SB)チップセットは、実証された信頼性
と性能を持つ革新的で拡張性のあるアーキテクチャに基づいています。

945G(NB)	• 32ビットホストバスアドレシング機能対応、これでCPUが4 GBのメモリアドレス空間すべてをアクセス可能
	• 2 GB/秒 point-to-point Direct Media Interface (DMI) でICH7とのデータやり取りを1 GB/秒の転送率で実現
	• グラフィックインターフェース用PCI Express x16 スロットを提供、これでPCI Express Base Specification revision 1.0aに完全対応
	• 8倍速または16倍速のデバイスの256-Mbや512-Mb、1-Gb の DDR2技術に対応
	• 3D Setup機能、Renderエンジン、及び高品質のテクスチャエンジンをサポート

ICH7(SB)	• 強化型DMAコントローラと、割り込みコントローラ、タイマー機能を提供
	• PCI Express Base Specification 1.0a版に完全対応
	• PCI 2.3仕様に準拠
	• シリアルATA II 仕様に準拠
	• 統合型USB 2.0ホストコントローラで、最大8つまでのUSB 2.0 ポートを対応可能
	• 統合型LANコントローラ
	• AC'97/Intel High Definition Audio Codec(s)規格に対応し、8チャネルのオーディオ出力可能
	• 統合型IDEコントローラで、Ultra ATA100/66/33サポート可能

メモリ
- DDR2 667/533/400 DDR SDRAM に対応し、デュアルチャネル 構成を実現
- 2つの非バッファーDIMMを搭載
- 各DIMMスロットに1 GBまで装着可能で、合計2GBまでをサポート

グラフィック
- 3Dセットアップ＆レンダーエンジンを導入
- ゾーンレンダリング機能をサポート
- 高品質テクスチャエンジンを導入

1394a Fire Wire(オプション)
- "IEEE 1394-1995 and IEEE1394a-2000"基準のシングル・チップ・ホスト・コントローラに対応
- PCI バスの400 Mbit 2-Port PHY を内蔵
- 3.3Vの電源サプライを採用し、許容入力5V

オンボードLAN (オプション)

オンボードLANコントローラで次の機能を実現:

・ 10/100/1000 トランシーバーを搭載済み ・ PCI v2.3, 32-bit, 33/66-MHzへの対応 ・ IEEE 802.3、IEEE 802.3u、IEEE 802.3abへの全面対応
・ 10/100 Mb/s Nウェイ自動折衝動作 ・ 半/全二重の機能をサポート ・ Wake-on-LAN と遠隔 wake-upとの機能をサポート

オーディオ (オプション)

・ 8チャネルのDACで、7.1オーディオソリューションの24/20/16-bit PCM形式をサポート ・ 192K/96K/48K/44.1KHz DAC サンプリング率をサポート ・ 電源サポート: 3.3V(デジタル方式の場合)、3.5V〜5.25V(アナログ方式の場合) ・ Microsoft WHQL/WLP 2.0 オーディオ規格に準拠 ・ Direct Sound 3D™ に対応 ・ 電化製品向けのDolby Digital Encorder出力機能を搭載
・ Intel High Definition Audio規格に準拠することで、95dB S/N率の8チャネル DACをサポート ・ 互換性: 24/20/16 ビットでの192/96/48/44.1 KHz ・ 電源サポート:デジタルの場合は 3.3V、アナログの場合は3.3V/5.0V ・ すべてのアナログ端子は、ステレオ入出力re-tasking機能によるアナログ plug & playが可能 ・ Microsoft WHQL/WLP 2.0 オーディオ規格に準拠 ・ Direct Sound 3D™ に対応 ・ 電化製品向けのDolby Digital Encorder出力機能を搭載
・ AC'97 2.3 規格に準拠 ・ PCマルチメディアシステムの6チャネルオーディオCODECをサポート ・ 5ビット音声コントロール可能のアナログラインレベルのステレオ入力が 3つ:ラインイン、CD、およびAUX ・ Microsoft WHQL/WLP 2.0 オーディオ規格に準拠

拡張オプション

本マザーボードでは、次の拡張機能が利用できます。

- グラフィックインターフェース用のPCI Express x16 スロットが1つ
- PCI Express x1 スロットが1つ
- 32ビットPCI v2.3 互換性スロットが2つ
- 40ピンIDEロープロフィルヘッダー(2つのIDEチャネルをサポート)が1つ
- フロッピーディスク ドライブ インターフェイス が1つ
- 7ピンSATAコネクタ が4つ

このマザーボードは、100/66 MB/秒の転送速度でのUltra DMAバスマスタリングをサポートします。

日本語

統合I/O

マザーボードには、次のI/Oポートやコネクタを揃えています。

- ・　マウスとキーボード用のPS/2ポート が2つ
- ・　シリアルポート が1つ
- ・　パラレルポート が1つ
- ・　VGAポート が1つ
- ・　USBポート が4つ
- ・　1394ポート が1つ(オプション)
- ・　LANポート が1つ(オプション)
- ・　さらに、マイクロホン入力と、ライン入力と、8チャネルHigh Definition Audio出力とを搭載。

BIOSファームウェア

本マザーボードはAward BIOSを採用し、次の機能を含めた多様なシステム構成を行えます。

- ・　電源管理
- ・　ウェークアップアラーム
- ・　CPUパラメータ
- ・　CPUおよびメモリのタイミング

さらに、所定のパラメータを設定することによって、プロセッサのクロック速度を変更することもできます。

> 一部のハードウェア仕様とソフトウェアアイテムは、予告なしに変更することがあります。

특징

프로세서

본 마더보드는 인텔 코어™2 듀오/팬티엄 D/팬티엄 4/ 셀러론 D 의 LGA775 타입을 사용하였으며 다음과 같은 특성을 지닌다.

- 인텔 코어™2 듀오/팬티엄 D/팬티엄 4/ 셀러론 D 프로세서 탑재
- 1066/800/533 MHz시스템 버스(FSB) 지원
- ”Hyper-Threading” 기술 CPU 지원

”Hyper-Threading” 기술은 운영체제를 두 개의 프로세서에 연결한 것처럼 두개의 트래드를 패러럴로 실행하여 같은 물리적 프로세서 안에서 각기 다른 논리적 프로세서를 실행할 수 있게 한다.

칩 셋

945G Northbridge (NB) 와 ICH7 Southbridge (SB) 칩셋은혁 신적이고 범위성을 지닌 아키텍쳐를 바탕으로 인정된 신뢰성과 성능을 지닌다.

945G (NB)	• 32 비트 호스트 버스 어드레싱 지원으로, CPU 가 총 4 GB 메모리 어드레스 공간에 액세스할 수 있다.
	• ICH7 (1 GB/s).에 각 방향으로 2 GB/s point-to-point Direct Media Interface (DMI)
	• 그래픽 인터페이스를 위해 1 개의 PCI Express x16 지원, PCI Express Base 1.0a 사양 완전 부합.
	• x8 및 x16 장치를 위해 256-Mb, 512-Mb, 1-Gb DDR2 기술 지원.
	• 고품질의 텍스쳐 엔진과 함께 3D 설정, 랜더 엔진

ICH7 (SB)	• 보강 DMA 컨트롤러, 인터럽트 컨트롤러, 및 타이머 기능
	• PCI Express Base 1.0a 사양 부합
	• PCI 2.3 사양 호환.
	• 시리얼 ATA II 사양 호환
	• 통합 LAN 컨트롤러
	• AC'97 부합/8 채널 오디오 출력을 지원하는 인텔 HD 오디오 코덱
	• 오디오 출력에 8 개 채널을 지원하는 Azalia 사양 부합
	• 통합 IDE 컨트롤러로 Ultra ATA100/66/33 지원

메모리

- 듀얼 채널 아키텍처를 지닌 DDR2 667/533/400 DDR SDRAM
- 2 개의 unbuffered DIMM 사용
- DIMM 당 최대 1 GB, 최대 메모리 2 GB

그래픽

- 3D 설정 및 랜더 엔진
- Zone 랜더링 지원
- 고품질 텍스쳐 엔진

1394a 파이어 와이어(선택 사항)

- IEEE 1394-1995 및 IEEE1394a-2000 용 싱글 칩 호스트 컨트롤러 호환
- PCI 버스 용 통합 400 Mbit 2 포트 PHY
- 3.3V 전원 공급 장치 (5V 허용오차)

보드 내장 LAN (선택 사항)

보드 내장 LAN 컨트롤러는 다음과 같은 특징을 제공한다:

• 통합 10/100/1000 트랜시버 • PCI v2.3, 32-bit, 33/66-MHz 지원 • IEEE 802.3, IEEE 802.3u, IEEE 802.3ab 전적으로 지원
• 10/100 Mb/s N-way 자동 감지 • Half/full 듀플렉스 지원. • Wake-on-LAN 및 원격 wake-up 지원

오디오 (선택 사항)

• 8 채널 DAC, 7.1 오디오 솔루션을 위해 24/20/16 비트 PCM 포맷 지원 • 192K/96K/48K/44.1KHz DAC 샘플 속도 지원 • 전원 지원: 디지털: 3.3V; 아날로그: 3.5V~5.25V • 마이크로소프트 WHQL/WLP 2.0 오디오 요구에 부합 • Direct Sound 3D™ 호환 • 소비자 전기 어플리케이션을 위한 돌비 디지털 인코더 출력
• 95dB S/N 비율로 8 채널 DAC를 지원하는 HD 오디오 부합 • 호환성: 24/20/16 비트의 192/96/48/44.1 KHz • 전원 지원: 디지털: 3.3V; 아날로그: 3.3V/5.0V • 모든 아날로그 잭은 스테레오 입력 및 출력, 아날로그 플러그 앤 플레이를 위한 re-tasking. • 마이크로소프트 WHQL/WLP 2.0 오디오 요구에 부합 • Direct Sound 3D™ 호환 • 소비자 전기 어플리케이션을 위한 돌비 디지털 인코더 출력
• AC'97 2.3 사양 부합 • PC 멀티미디어 시스템을 위해 디자인 된 6 채널 오디오 코덱 지원 • 5 비트 볼륨 컨트롤의 아날로그 라인 레벨 스테레오 입력 3개 : Line-in, CD, AUX • 마이크로소프트 WHQL/WLP 2.0 오디오 요구에 부합

확장 옵션

이 메인보드는 다음과 같은 확장 옵션이 있다

- 그래픽 인터페이스 용 PCI Express 16 개 x 슬롯 1 개
- PCI Express 1 개 x 슬롯 1 개
- 32 비트 PCI v2.3 호환 슬롯 2 개
- 2 개의 IDE 채널을 지원하는 40핀 IDE 로우 프로파일 해더 1 개
- 플로피 디스크 드라이브 인터페이스 1 개
- 7 핀 SATA 커넥터 4개

마더보드는 전송 속도 100/66 MB/s의 UltraDMA 버스 마스터링을 지원한다.

통합 I/O

이 메인보드에는 풀 세트의 I/O 포트와 커넥터가 있다

- 마우스와 키보드용 PS/2 포트 2 개
- 시리얼 포트1개
- 패러럴 포트 1 개
- VGA 포트 1 개
- USB 포트 4 개
- 1394 포트 1 개 (선택 사항)
- LAN 포트 1 개 (선택 사항)
- 마이크 폰 입력, 라인 입력 및 8 채널 고 재생음 오디오를 위한 오디오 잭

BIOS 펌웨어

본 메인보드는 Award BIOS 를 사용하여 사용자는 다음과 같은 시스템 기능을 구성
할 수 있다

- 전원 관리
- Wake-up 알람
- CPU 파라미터
- CPU 및 메모리 타이밍

펌웨어는 다른 프로세서의 클럭 속도를 설정하는 데도 사용될 수 있다

> *하드웨어 사양 및 소프트웨어 아이템은 사전 통보없이 변경될 수 있*
> *습니다*

功能

處理器

本主機板可安裝一個 LGA775型式之Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D，
並具有如下特色：

- 支援 Intel Core 2 ™ Duo/ Pentium D/Pentium 4/ Celeron D 處理器
- 支援高達 1066/800/533MHz之系統匯流排(FSB)
- 支援使用超執行緒(Hyper-Threading)技術之CPU

利用"超執行緒(HT)"技術，可使作業系統在相當於裝上了兩具處理器的狀態下運
作；利用一個"實體"處理器模擬出兩個獨立的"邏輯"處理器，同時執行兩個工作
緒。

晶片組

945G北橋(NB)及ICH7南橋(SB)晶片組在研發設計上採用了創新且具擴充性之架構，具備
優良的可靠性及性能。

945G (NB)
- 支援32位元主控匯流排定址，藉此CPU 可存取整個4 GB的記憶位址空間
- 提供對ICH7的2 GB/秒點對點Direct Media Interface (DMI)，雙向1 GB/秒
- 具有一個繪圖卡用之PCI Express x16 介面，完全符合PCI Express Base Specification 1.0a版
- 支援8倍速及16倍速之256-Mb、512-Mb、及1-Gb DDR2技術
- 支援高品質3D算圖引擎及高品質紋理引擎

ICH7 (SB)
- 增強型DMA控制器、中斷控制器、及計時功能
- 符合PCI Express Base Specification 1.0a版
- 符合PCI 2.3規格
- 符合SATA II 規格
- 內建式USB 2.0主控，可支援8個USB 2.0埠
- 內建式區域網路控制器
- 相容於支援8聲道音訊輸出功能之高傳真音效編碼解碼器(High Definition Audio Codec)規格
- 整合式IDE控制器，支援Ultra ATA100/66/33

記憶體

- 支援具有雙通道架構之DDR2 667/533/400 DDR SDRAM
- 具有2個非緩衝式DIMM
- 各DIMM可安裝1GB記憶體，共可支援高達2GB的記憶體容量

繪圖卡

- 3D Setup 及 Render引擎
- 支援區域繪圖成形(Zone Rendering)功能
- 高品質紋理引擎

1394a Fire Wire (選購)

- 相容於"IEEE 1394-1995 and IEEE1394a-2000"規格之單晶主控制器
- 內建PCI匯流排之 400 Mbit 雙埠 PHY
- 採3.3V 電源供應，5V之容限電壓輸入

內建區域網路 (選購)

內建區域網路控制器具有如下功能：

・ 整合有 10/100/1000 收發器 ・ 支援 PCI v2.3, 32 位元, 33/66MHz ・ 支援 IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
・ 10/100 Mb/s N 路自動協商動作 ・ 支援半/全雙工功能 ・ 支援區域網路喚醒(Wake-On-LAN)及遠端喚醒功能

音效(選購)

・ 配備 8 通道之 DAC，可支援 7.1 音訊解決方案之 24/20/16-bit PCM 格式 ・ 支援 192K/96K/48K/44.1KHz DAC 取樣率 ・ 電源支援： 3.3V(數位)、3.5V~5.25V(類比) ・ 符合 Microsoft WHQL/WLP 2.0 音訊規格 ・ Direct Sound 3D™ 相容 ・ 支援家用電子產品之杜比數位編碼輸出功能
・ 相容於 Intel High Definition Audio 規格，可支援 95dB S/N 比的 8 聲道 DAC ・ 相容性：24/20/16 位元下之 192/96/48/44.1 KHz； ・ 電源支援：3.3V(數位時)，3.3V/5.0V(類比時) ・ 所有類比插頭均具類比隨插即用的立體環場音訊輸入及輸出的重組態(re-tasking)功能 ・ 符合 Microsoft WHQL/WLP 2.0 音訊規格 ・ Direct Sound 3D™ 相容 ・ 支援家用電子產品之杜比數位編碼輸出功能
・ 相容於 AC'97 2.3 規格 ・ 支援為個人電腦多媒體系統設計的 6 聲道音訊 CODEC 功能 ・ 提供具有 5 位元音量控制功能的 3 種類比線級立體音效輸入：Lin-in、CD、及 AUX ・ 符合 Microsoft WHQL/WLP 2.0 音訊規格

擴充選項

本主機板包括下列擴充選項：
- 1 個繪圖介面用之 PCI Express x16 插槽
- 1 個 PCI Express x1 插槽
- 2 個 32 位元 PCIv2.3 插槽
- 1 個 40 針 IDE 接頭(支援 2 個 IDE 裝置)
- 1 個軟碟機介面
- 4 個 7 針 SATA 插頭

本主機板支援傳輸率 100/66 MB/秒下的 Ultra DMA 匯流排主控功能。

繁體中文

整合 I/O

主機板具有齊全的 I/O 連接埠及連接頭：
- 2個 PS/2 埠，供滑鼠與鍵盤使用
- 1個串列埠
- 1個平行埠
- 1個VGA埠
- 4個USB埠
- 1個1394埠(選購)
- 1個區域網路埠(選購)
- 具有麥克風輸入端子、Line級輸入端子、及 8聲道高傳真音效(High Definition Audio)輸出端子

BIOS 韌體

本主機板使用Award BIOS，使用者可以組態設定許多系統功能，包括如下：
- 電源管理
- 喚醒警鈴
- CPU參數
- CPU及記憶體的時脈定時

此外，也可藉由參數的設定，調整處理器的時脈速度。

> 部份硬體規格和軟體內容可能會在未經通知的情況下更動，敬請見諒。

功能

处理器

此主板使用 LGA775 型 Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D 处理器，具有以下特点：

- 支持 Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D 处理器
- 支持 1066/800/533 MHz 系统总线 (FSB)
- 支持"多线程"技术 CPU

"多线程"技术可以让操作系统认为自己连接了两个处理器，允许两个线程并行运行，每个线程位于同一处理器中的单独"逻辑"处理器中。

芯片组

945G北桥 (NB) 和 ICH7 南桥 (SB) 芯片组是基于一种新型的、可扩展的架构，能提供已经证明的可靠性和高性能。

945G (NB)
- 支持 32 位主机总线寻址，允许 CPU 访问 4 GB 的完整内存地址空间。
- 每个方向 2 GB/s 点到点直接媒体接口 (DMI) 到 ICH7 (1 GB/s)。
- 支持 1 个 PCI Express x16 用于图形接口，完全符合 PCI Express Base 规格 1.0a。
- 支持用于 x8 和 x16 设备的 256-Mb、512-Mb 和 1-Gb DDR2 技术
- 支持高性能 3D 设置，着色引擎和高性能纹理引擎

ICH7 (SB)
- 增强 DMA 控制器、中断控制器和定时器功能
- 符合 PCI Express Base 规格 1.0a
- 符合 PCI 2.3 规格
- 符合串行 ATA II 规格
- 集成 USB 2.0 主控器，最多支持 8 个 USB 2.0 端口
- 集成 LAN 控制器
- 符合支持 8 路音频输出的 AC'97/Intel 高精度音频编解码器规格
- 集成 IDE 控制器，支持 Ultra ATA100/66/33

内存

- DDR2 667/533/400 DDR SDRAM，双通道架构
- 支持 2 个非缓冲 DIMM
- 每个插槽支持 1 GB，总共最大可支持 2 GB

图形

- 3D 设置和着色引擎
- 支持区域着色
- 高性能纹理引擎

1394a 火线（可选）

- 符合用于 IEEE1394-1995 和 IEEE1394a-2000 的单芯片 PCI 主机控制器标准
- 集成用于 PCI 总线的 400 Mbit 2 端口 PHY
- 3.3V 电源，带 5V 容错输入

Multi-Language Translation

Onboard LAN (可选)

板上集成的 LAN 控制器提供以下功能：

- 集成 10/100/1000 收发器
- 支持 PCI v2.3，32-位，33/66-MHz
- 完全支持 IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

- 10/100 Mb/s N 路自侦测运行
- 支持半双工/全双工工作
- 支持 LAN 唤醒 (WOL) 功能和远程唤醒功能

音频

- 8 通道 DAC，支持 24/20/16 位 PCM 格式用于 7.1 音频解决方案
- 支持 192K/96K/48K/44.1KHz DAC 采样速率
- 电源支持： 数字亮：3.3V；模拟量：3.5V~5.25V
- 符合 Microsoft WHQL/WLP 2.0 音频要求
- 符合 Direct Sound 3D™ 规格
- 用于消费类电子应用的杜比数字编码器

- 符合高精度音频规格，支持 8 通道 DAC，95dB 信噪比
- 兼容性：192/96/48/44.1 KHz，24/20/16 位
- 支持 8 个智能插孔 I/O 端口
- 电源支持：数字：3.3V；模拟：3.3V/5.0V
- 所有模拟插孔为立体声输入和输出并重新指定为模拟即插即用
- 符合 Microsoft WHQL/WLP 2.0 音频要求
- 符合 Direct Sound 3D™ 规格
- 用于消费类电子应用的杜比数字编码器

- 兼容 AC'97 v2.3 规格
- 支持为PC多媒体系统设计的 6 声道音频编解码器
- 提供 3 路带 5 位音量控制的模拟线路电平立体声输入：线入、CD 和 AUX
- 符合 Microsoft WHQL/WLP 2.0 音频要求

扩展选项

此主板提供如下扩展选项：
- 1 个用于图形接口的 PCI Express x16 插槽
- 1 个 PCI Express x1 插槽
- 2 个 32 位 PCI 扩展插槽
- 1 个 40-pin IDE 紧凑型接口，支持 2 个 IDE 通道
- 1 个软驱接口
- 4 个 7-pin SATA 接口

此主板支持 Ultra DMA 总线控制，传输速率可达 100/66 MB/sec。

集成 I/O

此主板具有完整的 I/O 端口和插孔：
- 2 个用于连接鼠标和键盘的 PS/2 端口
- 1 个串口
- 1 个并口
- 1 个 VGA 端口
- 4 个 USB 端口
- 1 个 1394 端口（可选）
- 1 个 LAN 端口（可选）
- 用于麦克风、线入和 8 声道高清晰度音频的音频插孔

BIOS

此主板使用 Award BIOS，可以让用户自己配置以下系统功能：

- 电源管理
- 唤醒报警
- CPU 参数
- CPU 和记忆定时

还可用于设置不同处理器时钟速度的参数。

> 某些硬件规格和软件项目若有更改恕不另行通知。

Характеристики

Процессор

Материнская плата построена для процессоров типа LGA775 Intel Core™2 Duo/Pentium D/ Pentium 4/Celeron D и обладает следующими свойствами:
- Размещает процессоры Intel Core™ 2 Duo/Pentium D/Pentium 4/Celeron D
- Поддерживает системные шины (FSB) с частотой 1066/800/533MHz
- Поддерживает технологию CPU "Hyper-Threading"

Технология "Hyper-Threading" «убеждает» операционную систему в том, что в машине имеется два процессора; это позволяет параллельно обслуживать два процесса, причем каждый из процессов обслуживается отдельным «логическим» процессором в пределах одного физического процессора.

Чипсет

Чипсеты 945G «Северный мост» (Northbridge, NB) и ICH7 «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

945G (NB)
- Поддерживает 32-битную адресацию хоста, обеспечивая для CPU адресацию памяти объемом 4ГБ .
- Интерфейс передачи данных Direct Media point-to-point со скоростью 2 ГБ/с (DMI) к ICH7 (1 ГБ/с) в каждом направлении.
- Имеет один разъем для подключения карты графики PCI Express x16; обеспечивает полную соместимость с PCI Express Base, rev. 1.0a.
- Поддерживает технологии 256-Мб, 512-Мб и 1-Гб DDR2 для устройств x8 и x16
- Процессор трехмерной графики (3D setup, render)и Процессор высококачественных текстур

ICH7 (SB)
- Расширенные функции контроллера DMA, контроллера прерываний, внутреннего таймера
- Совместимость с PCI Express Base, Rev. 1.0a
- Совместимость с PCI 2.3
- Совместимость с Serial ATA II
- Встроенный контроллер хоста USB 2.0 с поддержкой до восьми портов USB 2.0
- Встроенный контроллер LAN
- Совместимость с аудио КОДЕК AC'97/Intel High Definition и поддержка 8-канального аудио-выхода
- Встроенный контроллер IDE с поддержкой Ultra ATA100/66/33

Память
- DDR2 667/533/400 DDR SDRAM с двухканальной архитектурой
- Обслуживает 2 модуля небуферизованной памяти DIMM
- Обслуживает до 1 ГБ на модуль DIMM (максимально до 2 ГБ памяти)

Графика
- Процессор трехмерной графики (3D setup and render)
- Поддержка технологии Zone Rendering
- Процессор высококачественных текстур

Multi-Language Translation

1394a FireWire (опционально)

- Совместимость с одночипным контроллером хоста для IEEE 1394-1995 и IEEE1394a-2000
- Встроенный 400 Мбит 2-портовый PHY для шины PCI
- Питание 3.3 В при допустимости 5В на входе

Встроенный сетевой адаптер LAN (опционально)

Встроенный сетевой адаптер LAN обладает следующими характеристиками:

- Интегрированный трансивер 10/100/1000
- Поддержжа PCI v2.3, 32-бит, 33/66-МГц
- Полная совместимость с технологией IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

- Режим автовыбора 10/100 Mb/s N-way
- Поддержка режимов Half и Full Duplex
- Функция Wake-on-LAN и удаленного пробуждения

Аудио (опционально)

- Поддерживает 8-канальный DAC в 24/20/16-битном PCM формате для аудио вер. 7.1
- Поддерживает частоту сэмплирования DAC 192K/96K/48K/44.1 КГц
- Электропитание: цифровой режим: 3.3V; аналоговый режим: 3.5V~5.25V
- Соответствует нормам звуковых карт Microsoft WHQL/WLP 2.0
- Совместимость с Direct Sound 3D™
- Декодер цифрового выхода Dolby соместим с домашней электроникой

- Совместимость с аудио-технологией Intel High Definition, поддержка 8-канального DAC с соотношением сигнал/шум 95дБ
- Совместимость с 192/96/48/44.1 КГц для 24/20/16 бит
- Электропитание: цифровое: 3.3V; аналоговое: 3.3V/5.0V
- Все аналоговые гнезда аудио имеют стереовход и выхода и пригодны для аналогового plug & play
- Соответствует нормам звуковых карт Microsoft WHQL/WLP 2.0
- Совместимость с Direct Sound 3D™
- Декодер цифрового выхода Dolby соместим с домашней электроникой

- Совместимость со спецификацией AC'97 2.3
- Поддерживает 6-канальный аудио CODEC для мультимедиальных компьютерных систем
- Обеспечивает три аналоговых стереовхода с 5-битной регуляцией громкости: Line-in, CD, AUX
- Соответствует нормам звуковых карт Microsoft WHQL/WLP 2.0

Возможности расширения

Существуют следующие опции расширения данной материнской платы:

- Один слота PCI Express x16 для графического интерфейса
- Один слот PCI Express x1
- Два 32-битных слота PCI v2.3
- Один низкопрофильный 40-штырьковый слот IDE, обеспечивающий поддержку двух устройств IDE
- Один разъем для накопителя на гибких дисках
- Четыре 7-штырьковых разъема SATA

Плата поддерживает технологию захвата управления шиной UltraDMA bus mastering со скоростью передачи данных 100/66 МБ/сек.

Интегрированный вход/выход

Плата снабжена полным набором портов входа/выхода и разъемов:

- Два порта PS/2 для подключения мыши и клавиатуры
- Один серийный порт
- Один параллельный порт
- Один VGA порт
- Четыре порта USB
- Один порт 1394 (опционально)
- Один порт LAN (опционально)
- Гнездо для подключения микрофона, гнездо аудио-входа и 8-канального аудиовыхода

BIOS

Плата работает под Award BIOS, который позволяет пользователю конфигурировать различные характеристики системы:

- Управление питанием
- Сигналы пробуждения системы
- Параметры CPU
- Время доступа для CPU и памяти

BIOS допускает также установку параметров для различных частот процессора.

Некоторые параметры платы и характеристики ее программного обеспечения могут быть изменены без предварительного уведомления.

Cechy

Procesor

Płyta główna posiada podstawkę typu LGA775, która jest przystosowana do obsługi procesorów Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D i posiada następujące właściwości:

- Dostosowana do procesorów: Intel Core™ 2 Duo/Pentium D/ Pentium 4/ Celeron D
- Obsługuje szynę systemowa (FSB) 1066/800/533MHz
- Zabezpiecza technologię CPU "Hyper-Threading"

Technologia "Hyper-Threading" powoduje, że system "myśli", że posiada dwa procesory i wykonuje równolegle dwa procesy; za wykonanie każdego procesu odpowiedzialny jest jeden z dwuch "logicznych" procesorów w ramach jednego fizycznego procesora

Chipset

Mostek północny (NB) 945G i mostek południowy (SB) ICH7 chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalnoœci.

945G (NB)
- Obsługuje 32-bitowe adresowanie hosta pozwalając procesorowi zaadresować 4 GB pamięci
- Interfejs bezpośredniego połączenia (DMI) typu point-to-point 2 GB/s do ICH7 (1 GB/s) w każdym kierunku
- Obsługuje jedno złącze grafiki PCI Express x16; całkowicie zgodne z technologią PCI Express Base, w wersji 1.0a.
- Obsługuje pamięci 256-Mb, 512-Mb i 1-Gb w technologii DDR2 w urządzeniach x8 i x16
- Obsługuje procesor 3D setup, render i procesor tekstur wysokiej jakości

ICH7 (SB)
- Rozszerzony kontroler DMA, kontroler przerwań i funkcje zegara
- Zgodny z technologią PCI Express Base, Rev. 1.0a
- Zgodny z PCI w wersji 2.3
- Zgodny ze standardem Serial ATA II
- Wbudowany kontroler hosta USB 2.0 obsługuje do ośmiu portów USB
- Wbudowany kontroler LAN
- Zgodny z protokołem AC'97/Intel High Definition Audio Codec(s), obsługuje 8 kanałowe wyjście audio
- Wbudowany kontroler IDE obsługujący Ultra ATA100/66/33

Pamięć

- DDR2 667/533/400 DDR SDRAM z architekturą dwukanałową
- Zaopatrzony w dwa gniazda niebuforowanej pamięci typu DIMM
- Obsługuje pamięć DIMM do pojemności 1 GB każda; maksymalna możliwa pojemność pamięci do 2 GB

Grafika

- Procesor 3D setup i render
- Obsługuje technologię Zone Rendering
- Procesor tekstur wysokiej jakości

1394a FireWire (opcjonalnie)

- Zgodny z kontrolerem pojedynczego chipa IEEE 1394-1995 i IEEE1394a-2000
- Dwa 400 MB złącza PHY zintegrowane z szyną PCI
- Zasilacz -3,3 V z tolerancją wejścia 5 V

Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

•   Zintegrowany terminal nadawczo-odbiórczy 10/100/1000   •   Obsluguje 32 bitowe PCI w wersji 2.3 o częstotliwościach 33/66-MHz   •   Obsługuje wpełni standard IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
•   Możliwe operacje 10/100 Mb/s N-way Auto-negotiation   •   Zdolność Half/Full duplex   •   Obsługuje Wake-on-LAN (WOL) i zdalne wake-up

Audio (opcjonalnie)

•   Obsługuje 8 kanałów DAC w formacie 24/20/16-bit PCM w standardzie audio 7.1   •   Obsługuje częstotliwości próbkowania 192K/96K/48K/44.1KHz DAC   •   Zasilacz obsługuje odbiorniki 3.3V cyfrowe i 3.5V~5.25V analogowe   •   Spełnia wymagania audio według standardu Microsoft WHQL/WLP w wersji 2.0   •   Zgodny z Direct Sound 3D™   •   Dekoder cyfrowego wyjścia Dolby pozwalający na współpracę z domową elektroniką
•   Zgodny z protokołem Intel High Definition Audio, obsługuje 8 kanałowe DAC ze stosunkiem sygnał/szum równym 95dB   •   Zgodność: 192/96/48/44.1 KHz z 24/20/16 bitami   •   Zapewnia zasilanie: 3,3 V cyfrowe; 3.3 V/5.0 V analogowe   •   Wszystkie analogowe gniazda wejściowe i wyjściowe typu jack są stereofoniczne i przystosowane do analogowego plug & play   •   Spełnia wymagania audio według standardu Microsoft WHQL/WLP w wersji 2.0   •   Zgodny z Direct Sound 3D™   •   Dekoder cyfrowego wyjścia Dolby pozwalający na współpracę z domową elektroniką
•   Zgodne ze specyfikacją AC'97 w wersji 2.3   •   Obsługuje 6 kanałów audio CODEC dla komputerowych systemów multimedialnych   •   Zapewnia trzy wejściowe, analogowe linie stereo z 5 bitową regulacją głośności: Line-in, CD, AUX   •   Spełnia wymagania audio według standardu Microsoft WHQL/WLP w wersji 2.0

Możliwości rozbudowy

Płyta głwna wyposażona jest w następujące gniazda:
- Jedno gniazdo PCI Express x 16 dla kart graficznych
- Jedno gniazdo PCI Express x1
- Dwa 32-bitowych gniazda zgodnych z PCI w wersji 2.3
- Jedno 40-nóżkowe złącze niskoprofilowe obsługujące dwa urządzenia IDE
- Jedno złącze obsługujące stacje dyskietek
- Cztery 7-nóżkowe złącza SATA

Płyta główna obsługuje szynę UltraDMA z szybkością transferu 100/66 MB/s.

Zintegrowane We/Wy

Płyta głwna wyposażona jest w pełny zestaw gniazd i złączy We/Wy:
- Dwa gniazda PS/2 dla myszy i klawiatury
- Jedno gniazdo szeregowe
- Jedno gniazdo równoległe
- Jedno gniazdo VGA
- Cztery gniazda USB
- Jedno gniazdo 1394 (opcjonalnie)
- Jedno gniazdo LAN (opcjonalnie)
- Wejście mikrofonowe, wejście audio i 8-kanałowe wyjście High Definition Audio

Firmowy BIOS

Płyta głwna wyposażona jest w BIOS firmy Award, który pozwala użytkownikowi konfigurować wiele cech systemu włączając w to następujące właściwości:
- Zarządzanie poborem mocy
- Alarmy typu Wake-up
- Parametry pracy procesora
- Ustalenia szybkoœci pracy procesora i pamiêci

BIOS może być używany do ustalania parametrów wpływających na szybkości pracy zegara procesora.

Niektóre parametry dotyczące płyty i jej oprogramowania mogą ulec zmianie bez uprzedniego powiadomienia.

Vlastnosti

Procesor

Tato základní deska používá typ LGA775 Intel Core™ 2 Duo/Pentium D/Pentium 4/Celeron D , který má následující vlastnosti:

- Určená pro procesory Intel Core™ 2 Duo//Pentium D/Pentium 4/ Celeron D
- Podporuje taktování systémové sběrnice (FSB) na frekvenci 1066/800/533 MHz
- Podporuje technologii CPU „Hyper-Threading"

Technologie „Hyper-Threading" umožňuje operačnímu systému pracovat tak, jako by byl připojen ke dvěma procesorům, protože je možné pracovat se dvěma toky programového kódu (vlákny) paralelně najednou, přičemž jsou k dispozici samostatné „logické" procesory umístěné v rámci jednoho fyzického procesoru.

Čipová sada

Čipy northbridge (NB) 945G a southbridge (SB) ICH7 jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

945G (NB)
- Podporuje 32bitové adresování, umožòující CPU pøistupovat k celému adresovému prostoru pamìti 4 GB.
- 2 GB/s přímé rozhraní DMI (Direct Media Interface) pro ICH7 (1 GB/s) v obou směrech.
- Podpora jednoho rozhraní PCI Express x16 pro grafiku, zcela splòující základní požadavky standardu PCI Express, revize 1.0a.
- Podpora 256 MB, 512 MB a 1 Gb DDR2 technologií pro zařízení x8 a x16
- Podpora 3D nastavení a vykreslovacího jádra s Jádro pro zobrazování textur ve vysoké kvalitě

ICH7 (SB)
- Vylepšený řadič DMA, řadič přerušení a funkcí časovače
- Splňuje základní požadavky standardu PCI Express, revize 1.0a
- Splňuje požadavky standardu PCI 2.3
- Splňuje požadavky standardu Serial ATA II
- Integrované hostitelské řadiče USB 2.0 podporující až osm portů
- Integrovaný řadič LAN
- Splňuje požadavky standardu Hi–Fi audiokodeku AC'97/Intel s podporou 8kánlových zvukových výstupů
- Integrovaný řadič IDE podporující Ultra ATA100/66/33

Paměť

- Paměti DDR2 667/533/400 DDR SDRAM s dvoukanálovou architekturou
- Instalovat je možné až dvě DIMM moduly bez vyrovnávací pamìti
- Až 1 GB pamìti na jeden modul DIMM s maximální velikostí pamìti do 2 GB

Grafika

- Renderovací grafické jádro 3D
- Podpora zónového renderování
- Jádro pro zobrazování textur ve vysoké kvalitě

Multi-Language Translation

1394a FireWire (volitelné)

- Shoda se standardem jednočipového řadiče IEEE 1394-1995 a IEEE1394a-2000
- 2 integrované porty 400 Mbit PHY pro sběrnici PCI
- Podporuje napájení 3,3 V s tolerancí vstupu 5 V

Vestavění síťové rozhraní LAN (volitelně)

Vestavěné síťové rozhraní LAN nabízí následující možnosti:

• Integrovaný transceiver 10/100/1000 • Podpora rozhraní PCI v2.3, 32bitové, 33/66MHz • Plná podpora rozhraní IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• 10/100 Mb/s Ncestné automatické přepínání provozu • Podpora plného/polovičního duplexního provozu • Podpora funkce Wake–on–LAN (WOL) a vzdálené aktivace

Zvuk (volitelně)

• 8 kanálů převodníku DAC podporuje 24/20/16bitový formát PCM pro zvukový výstup 7.1 • Podpora vzorkovací frekvence převodníku DAC 192k/96k/48k/44,1kHz • Podpora napájení: Digitální: 3,3 V; Analogové: 3,5 V ~ 5,25 V • Splňuje požadavky standardu Microsoft WHQL/WLP 2.0 • Kompatibilita s Direct Sound 3D™ • Výstup enkodéru Dolby Digital pro použití ve spojení se spotřební elektronikou
• Splňuje požadavky standardu Hi–Fi audiokodeku Intel, s podporou 8kanálového D/A převodníku s odstupem šumu od zvuku 95 dB • Kompatibilita: 192/96/48/44,1 kHz s 24/20/16bitovým vzorkováním • Napájení: Digitální: 3,3 V; Analogové: 3,3 V / 5,0 V • Všechny analogové vstupní a výstupní konektory jsou stereo, plug & play • Splňuje požadavky standardu Microsoft WHQL/WLP 2.0 • Kompatibilita s Direct Sound 3D™ • Výstup enkodéru Dolby Digital pro použití ve spojení se spotřební elektronikou
• Splňuje požadavky standardu AC'97 2.3 • Podpora 6kanálového zvukového kodeku určeného pro multimediální PC systémy • Nabízí tří analogové linkové stereo vstupy s 5bitovým řízení hlasitosti: LINE-IN, CD, AUX • Splňuje požadavky standardu Microsoft WHQL/WLP 2.0

Možnosti rozšíření

Základní deska je dodávána s následujícími možnostmi rozšíření
- Jedna patice PCI Express x 16 pro grafickou kartu
- Jedna patice PCI Express x1
- Dvě 32bitové patice PCI v2.3
- Jeden nízkoprofilový 40kolíkový konektor IDE podporující připojení dvou zařízení standardu IDE
- Jedno rozhraní pro disketovou mechaniku
- Čtyři 7kolíkové konektory SATA

Základní deska podporuje sběrnici Ultra DMA s přenosovými rychlostmi 100/66 MB/s.

Integrovaný vstup/výstup

Základní deska je vybavena kompletní sadou vstupních portů a konektorů I/O:
- Dva porty PS/2 pro myš a klávesnici
- Jeden sériový port
- Jeden paralelní port
- Jeden port VGA
- Čtyři porty USB
- Jeden port 1394 (volitelně)
- Jeden port LAN (volitelně)
- Zvukové konektory pro mikrofon, zvukový vstup a 8kanálový Hi-Fi zvukový výstup

Firmware BIOS

Základní deska využívá BIOS formy Award, který uživateli umožňuje nakonfigurovat mnoho systémových parametrů, včetně následujících:
- Řízení spotřeby
- Alarmy při spouštění systému
- Parametry CPU
- Časování CPU a paměti

Firmware může být rovněž použit k nastavení parametrů pro různé taktovací frekvence procesoru.

> *Některé technické parametry hardware a software se mohou měnit bez předchozího upozornění.*

Caracteristici

Procesorul

Placa de bază utilizează Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D de tip LGA775 cu următoarele caracteristici:

- Acomodează procesoare Intel Core™2 Duo/Pentium D/ Pentium 4/ Celeron D
- Funcționează cu bus sistem (FSB) de 1066/800/533 MHz
- Este compatibilă cu unități centrale dotate cu tehnologia „Hyper-Threading"

Tehnologia „Hyper-Threading" permite sistemului de operare să funcționeze ca și cum ar exista două procesoare, putând fi rulate în paralel două fire, fiecare pe câte un procesor „logic" separat, aflate pe același procesor fizic.

Setul de chipuri

Seturile de chipuri 945G Northbridge (NB) și ICH7 Southbridge (SB) se bazează pe o arhitectură inovatoare și scalabilă, care s-a impus deja prin fiabilitate și performanță.

945G (NB)
- Sprijină adresarea host bus (bus gazdă) de 32 biți, permițând unității centrale să acceseze întreaga cantitate de memorie de 4 GB.
- Interfață Direct Media (DMI) punct la punct pe 2 GB/s pentru ICH7 (1 GB/s) în ambele direcții.
- Sprijină PCI Express de 16x pentru interfața grafică, este pe deplin compatibil cu versiunea 1.0a a specificației de bază PCI Express.
- Este compatibil cu tehnologiile de 256-Mb, 512-Mb și 1-Gb DDR2, pentru unități de viteza 8x sau 16x
- Suport pentru motor de configurare și procesare 3D, precum și motor de texturare de cea mai bună

ICH7 (SB)
- Controler DMA îmbunătățit, controler de întreruperi și funcții de temporizare
- Compatibil cu specificația de bază PCI Express, versiunea 1.0a
- Compatibil cu specificația PCI 2.3
- Compatibil cu specificație Serial ATA II
- Controler gazdă USB 2.0 integrat, care suportă cel mult opt porturi USB 2.0
- Controler LAN integrat
- Compatibilitate cu specificațiile AC'97/Intel High Definition Audio Codec, suportând ieșiri audio pe 8 canale
- Controler IDE integrat, suportând Ultra ATA100/66/33

Memoria

- Module DDR SDRAM DDR2 667/533/400 cu arhitectură cu canal dual
- Poate funcționa cu două module DIMM fără zonă tampon
- Poate funcționa cu module DIMM de cel mult 1 GB, iar cantitatea maximă de memorie este de 2 GB

Grafică

- Motor de configurare și randare 3D
- Permite randare de zone
- Motor de texturare de înaltă calitate

1394a Fire Wire (opțional)

- compatibil cu un host controller cu un singur chip pentru IEEE 1394-1995 și IEEE1394a-2000
- 400 Mbit 2-Port PHY integrat pentru PCI Bus
- sursă de alimentare 3.3V cu input de 5V toleranță

Onboard LAN (opţional)

Onboard LAN are următoarele caracteristici:

• Unitate de emisie/recepţie 10/100/1000 integrat • Suportă PCI, versiunea 2.3, de 32 biţi, la 33/66 MHz • compatibil pe deplin cu standardul IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• Operare10/100 Mb/s N-way Auto-negotiation • Suportă modul de operare duplex total/semi-duplex • Suport pentru funcţiile Wake-on-LAN (WOL) şi trezire la distanţă

Audio (opţional)

• Suport DAC 8 canale format PCM 24/20/16-bit pentru soluţii audio 7.1 • Suport 192K/96K/48K/44.1KHz DAC sample rate • Suport curent: Digital: 3.3V; Analog: 3.5V~5.25V • Corespunde cerinţelor audio Microsoft WHQL/WLP 2.0 • Compatibil cu Direct Sound 3D™ • Ieşire codificator Dolby Digital pentru aparate electronice de larg consum
• Compatibilitate cu specificaţia Intel High Definition Audio, suportând DAC pe 8 canale cu raport sunet/paraziţi de 95 dB • Compatibil cu: 192/96/48/44,1 kHz, la 24/20/16 biţi • Sursă de alimentare: digitală: 3,3 V; analoagă: 3,3 V / 5,0 V • Toate mufele analoage sunt cu redistribuire intrare şi ieşire stereo pentru configurare automată analoagă • Corespunde cerinţelor audio Microsoft WHQL/WLP 2.0 • Compatibil cu Direct Sound 3D™ • Ieşire codificator Dolby Digital pentru aparate electronice de larg consum
• Compatibil cu specificaţia AC'97 2.3 • Suportă CODEC cu şase canale audio destinate sistemelor multimedia ale calculatoarelor • Oferă trei intrări audio analoge stereo, cu un control al volumului sonor de 5 biţi: Intrare audio, CD, AUX • Corespunde cerinţelor audio Microsoft WHQL/WLP 2.0

Opţiuni de extindere

Placa de bază este dotată următoarele posibilităţi de extindere:
- Un slot PCI Express x16 pentru interfaţa grafică
- Un slot PCI Express x1
- Două sloturi de 32 biţi compatibile PCI, versiunea 2.3
- O interfaţă IDE 40 cu profil plat care poate deservi două unităţi IDE
- O interfaţă pentru unitate floppy
- Patru conectoare SATA 7

Placa de bază suportă bus mastering UltraDMA cu viteze de transfer de 100/66 MB/s

I/O integrată

Placa de bază este dotată cu un set complet de porturi şi conectoare I/O:

- Două porturi PS/2, pentru mouse şi tastatură
- Un port serial
- Un port paralel
- Un port VGA
- Patru porturi USB
- Un port 1394 (opţional)
- Un port LAN (opţional)
- Mufe audio pentru microfon, intrare audio şi pentru 8 canale audio de ieşire de înaltă fidelitate

Firmware BIOS

Placa de bază utilizează Award BIOS, care permite utilizatorului să configureze mai mulţi parametri ai sistemului, cum ar fi:

- Gestionarea energiei
- Alarme de trezire
- Parametri CPU
- Temporizare CPU şi memorie

Acest firmware poate fi utilizat şi pentru a seta parametrii diferitelor frecvenţe de comandă ale procesorului.

Anumite specificaţii hardware şi elemente de software pot fi modificate fără înştiinţare prealabilă.

Română

Спецификация

Процесор

Тази дънна платка използва сокет LGA775 за процесори Intel Core™2 Duo/ Pentium D/Pentium 4/ Celeron D и поддържа следните спецификации:

- поддръжка на процесори Intel Core™ 2 Duo/Pentium D/ Pentium 4/ Celeron D
- поддръжка на системна шина със скорост 1066/800/533MHz
- поддръжка на процесори с технология "Hyper-Threading"

Технологията "Hyper-Threading" позволява да се "излъже" операционната система, че работи на два процесора, което дава възможност за паралелното изпълнение на две задачи на два отделни "логически" процесора в един и същ физически процесор.

Чипсет

Чипсетът със северен мост 945G (NB) и южен мост ICH7 (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

945G (NB)
- 32-bit адресация на шината, което позволява на процесора достъп към пълното адресно пространство на паметта 4GB.
- Директен медиа интерфейс (DMI) 2 GB/s point-to-point към ICH7, (1 GB/s във всяка посока).
- поддръжка на шина PCI Express x16 за графичен интерфейс, напълно съвместима с шината PCI Express Base ревизия 1.0a.
- поддръжка на технологии 256-Mb, 512-Mb и 1-Gb DDR2 за x8 и x16 устройства
- Поддръжка на 3D setup, render engine и висококачествено ядро за текстури.

ICH7 (SB)
- подобрен DMA Контролер, контролер на прекъсванията и часовник
- поддръжка на шината PCI Express Base, ревизия 1.0a
- поддръжка на шината PCI 2.3
- съвместимост със спецификацията Serial ATA II
- интегриран контролер USB 2.0 с поддръжка на до осем порта USB 2.0
- интегриран мрежов контролер
- Съвместимост с AC'97/Intel High Definition Audio Codec(s) с поддръжка на 8-канални аудио изходи
- интегриран контролер IDE с поддръжка на Ultra ATA100/66/33

Памет

- Дву-канална архитектура на паметта DDR2 667/533/400 DDR SDRAM
- поддръжка на до два небуферирани DIMM слота
- до 1 GB памет на 1 DIMM канал с максимален капацитет 2 GB

Графичен чип

- 3D setup и render engine
- поддръжка на Zone Rendering
- висококачествено ядро за текстури

1394a FireWire контролер (опция)

- host контролер на един чип за поддръжка на интерфейси IEEE 1394-1995 и IEEE1394a-2000
- Интегриран 400-мегабитов PHY интерфейс с два порт за PCI шината
- Захранване 3.3V с толеранс 5V

Интегриран мрежов контролер (опция)

Спецификация на интегрирания мрежов контролер:

• Интегриран 10/100/1000 контролер • Поддръжка на PCI v2.3, 32-bit, 33/66-MHz • Пълна поддръжка на IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
• режими на работа 10/100 Mb/s N-way с автоматично съгласуване • Поддръжка на режими half/full duplex • поддръжка на функция за "събуждане" Wake-On-LAN и дистанционен wake-up

Аудио (опция)

• 8-канален цифрово-аналогов преобразовател с поддръжка на 24/20/16-bit PCM формат за 7.1 канален звук. • Поддръжка на честота 192K/96K/48K/44.1KHz • Захранване: цифрово: 3.3V; аналогово: 3.5V~5.25V • Съвместим със спецификацията Microsoft WHQL/WLP 2.0 • съвместимост с Direct Sound 3D™ • Изход с вграден Dolby Digital Encoder
• Съвместимост с Intel High Definition Audio, с поддръжка на 8-канални цифрово-аналогови преобразователи със съотношение звук/шум 95dB • съвместимост с: 192/96/48/44.1 KHz на 24/20/16 bits • Захранване: Цифрово: 3.3V; Аналогово: 3.3V/5.0V • Всички аналогови гнезда са стерео, с възможност за аналогов режим plug & play • Съвместим със спецификацията Microsoft WHQL/WLP 2.0 • съвместимост с Direct Sound 3D™ • Изход с вграден Dolby Digital Encoder
• Аудио Кодек съвместим с AC'97 v2.3 • Поддръжка на 6-канален аудио кодек за мултимедийни компютърни системи • Три аналогови линейни стерео входа с 5-битов контрол на силата на звука: Line-in, CD, AUX • Съвместим със спецификацията Microsoft WHQL/WLP 2.0

Възможности за разширяване

Дънната платка има следните разширителни възможности:
- Един слот PCI Express x16 за графичен интерфейс
- Един слот PCI Express x1
- Два слота 32-bit PCI v2.3
- Един нископрофилен 40-pin IDE колектор с поддръжка на две IDE устройства
- Един конектор за флопидисково устройство
- Четири 7-pin SATA конектора

Дънната платка поддържа шина UltraDMA 100/66 MB/s

Интегриран Вход/Изход контролер

Дънната платка има пълен набор от I/O портове и конектори:

- два PS/2 порта за мишка и клавиатура
- един сериен порт
- един паралелен порт
- един VGA порт
- четири USB порта
- един 1394 порт (опция)
- един LAN порт (опция)
- аудио жак за микрофон (вход), линеен вход, линеен изход и изход за 8-канално High Definition аудио

BIOS Firmware

Дънната платка използва Award BIOS с възможност за различни системни настройки, включително

- управление на захранването
- Wake-up аларми
- параметри на процесора
- синхронизиране на процесора и паметта

настройка на скоростта на часовника на процесора

> *Хардуерните и софтуерни спецификации и параметри могат да бъдат изменени без предупреждение.*

Jellemző

Processzor

Az alaplap LGA775 típusú Intel Core™2 Duo/Pentium D/Pentium 4/ Celeron D processzort használ, a következő tulajdonságokkal:

- Intel Core™ 2 Duo/ Pentium D/Pentium 4/ Celeron D processzort akkomodál
- 1066/800/533 MHz sebességű rendszerbuszt (FSB) támogat
- Támogatja a „Hyper-Threading" technológiát használó központi egységeket

A „Hyper-Threading" technológia által az operációs rendszer úgy működik, mintha két processzorral rendelkezne, ami két szál párhuzamos futását teszi lehetővé két független, ugyanazon fizikai processzoron található „logikai" processzoron.

Lapkakészlet

A 945G Northbridge (NB) és ICH7 Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

945G (NB)	• 32 bites host bus addressing-et (gazdabusz címzést) tesz lehetővé, ami által a központi egység a teljes 4 GB-os címzési tárhelyhez hozzáfér.
	• 2 GB/s pontról-pontra adatátvitelű Direct Media interfész (DMI) az ICH7 (1 GB/s) számára mindkét irányban.
	• Egy 16-szoros Express PCI-vel rendelkezik a grafikus interfész számára, amely teljesen kompatibilis a PCI Express alapspecifikáció 1.0a változatával.
	• 256 Mb-os, 512 Mb-os és 1 Gb-os DDR2 technológiát támogat 8- és 16-szoros eszközök esetében
	• 3D beállító, megjelenítő motort és Kiváló minőségű mintázómotor .
ICH7 (SB)	• Fejlett DMA vezérlő, megszakításvezérlő és időzítő funkciók
	• Kompatibilis a PCI Express alapspecifikáció 1.0a változatával
	• Kompatibilis a PCI 2.3-as specifikációjával
	• Kompatibilis a soros ATA II specifikációval
	• Beépített USB 2.0 gazda vezérlő, legtöbb nyolc USB 2.0 portot támogat
	• Beépített LAN vezérlő
	• Kompatibilis az AC'97/Intel High Definition Audio Codec előírásokkal, 8 csatornás audio kimenetet támogatva
	• Beépített IDE vezérlő, amely az Ultra ATA100/66/33 technológiát támogatja

Memória

- DDR2 667/533/400 DDR SDRAM modulok kétcsatornás kiépítésben
- Két puffermentes DIMM egységgel működik
- Maximum 1 GB-os DIMM egységeket támogat, maximális memória 2 GB

Grafika

- 3D beállító és megjelenítő motor
- Zónamegjelenítés támogatása
- Kiváló minőségű mintázómotor

1394a FireWire (választható)

- Megfelel az egy csipes host vezérlőnek, az IEEE 1394-1995 és IEEE1394a-2000 specifikációknak
- Integrált 400 Mbit 2-Port PHY a PCI buszhoz
- 3.3V áramforrás 5V toleráns beadással

Alaplapon levő LAN (választható)

Az alaplapon levő LAN jellemzői:

• Integrált 10/100/1000 adó-vevő • Támogatja a 32 bites, 33/66 MHz-es PCI 2.3-as változatát • Teljesen kompatibilis az IEEE 802.3, IEEE 802.3u, IEEE 802.3ab szabvánnyal
• 10/100 Mb/s N-útú Auto-negotiation operáció • Fél-/teljes duplex • A Wake-on-LAN és a távoli ébresztés funkciók támogatása

Audio (választható)

• 8 csatornás DAC támogatás 24/20/16-bit PCM formátum 7.1 hangberendezésre • 192K/96K/48K/44.1KHz DAC sample rate támogatással • Áramellátás: Digitális: 3.3V; Analóg: 3.5V~5.25V • Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeinek • Kompatibilis a Direct Sound 3D™ technológiával • Dolby Digital kódoló kimenet fogyasztói elektronikai cikkekhez
• Kompatibilis az Intel High Definition Audio előírásokkal, 8 csatornás DAC támogatásával, 95 dB jel-zaj aránnyal • Kompatibilitás: 192/96/48/44,1 KHz, 24/20/16 biten • Tápforrás: digitális: 3,3 V; analóg: 3,3 V / 5,0V • Az összes analóg csatlakozó sztereó bemenetű és kimenetű analóg azonnali felismerés támogatására • Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeinek • Kompatibilis a Direct Sound 3D™ technológiával • Dolby Digital kódoló kimenet fogyasztói elektronikai cikkekhez
• Megfelel az AC'97 2.3-as specifikációnak • A számítógép multimédiás rendszereinek szánt hat csatornás audio CODEC-et támogat • Három analóg sztereo bemenetet biztosít 5 bites hangerő vezérléssel: bemenet, CD, AUX • Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeinek

Bővítési lehetőségek

Az alaplap a következő bővítési lehetőségekkel rendelkezik:

- Egy 16-szeres Express foglalat a grafikus interfész számára
- Egy 1-szeres PCI Express foglalat
- Két 32 bites, a PCI 2.3-as változatával kompatibilis foglalat
- Egy 40 tűs lapos IDE foglalat, amely két IDE eszközt képes kiszolgálni
- Egy hajlékonylemez meghajtó interfész
- Négy 7 tűs SATA csatlakozó

A alaplap támogatja az UltraDMA bus mastering megoldást, 100/66 MB/s sebességen

Beépített I/O

Az alaplapot az I/O portok és csatlakozók teljes készletével szerelték fel:

- Két PS/2 port az egér és a billentyűzet számára
- Egy soros port
- Egy párhuzamos port
- Egy VGA port
- Négy USB port
- Egy 1394 port (választható)
- Egy LAN port (választható)
- Csatlakozók mikrofon bemenethez, audio bemenethez és 8 csatornás, nagy hűségű audio kimenethez

BIOS Firmware

Az alaplapon levő AWARD BIOS segítségével a felhasználó a rendszer sok paraméterét állíthatja be, például:

- Energiagazdálkodás
- Ébresztési riasztások
- CPU paraméterek
- CPU és memória időzítés

A firmware segítségével a processzor órajel-frekvenciáinak paramétereit is beállíthatják.

> *Bizonyos hardverjellemzők és szoftverelemek előzetes bejelentés nélkül módosulhatnak.*