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**

Deutscher Akkreditierungs Rat
DAR
TGA-ZM-30-96-00

Essen, 04.03.2004

RWTÜV

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

ROC, FE1737, RC

ISO14001 CERTIFICATE

Certificate NO.: 05-2001-065

We hereby certify that

ECS Manufacturing(Shenzhen) Co.,Ltd

by reason of its

Environmental Management System

has been awarded this certificate for
compliance with the standard

ISO14001 :1996

The Environmental Management System
applies in the following area:

The manufacture of Mother Board and Peripheral Card and interrelated management activities of ECS Manufacturing(Shenzhen) Co.,Ltd. which is located in No.20,Free Trade Zone,Shatuojiao,Shenzhen, P. R.China.

Date of issue: 30th Dec 2001
Date of expiry: 29th Dec 2004
Signed by:

SHENZHEN ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION CENTER

Preface

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Version 1.0

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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
Go to ⇨ page 49

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the 915G-M5 motherboard. This motherboard is a high performance, enhanced function motherboard that supports LGA775 Socket for latest Intel Pentium 4/Celeron processors for high-end business or personal desktop markets.

The motherboard may support 915G Northbridge (NB) and ICH6 Southbridge (SB) chipsets. The 915G Northbridge on this motherboard supports a Front Side Bus (FSB) frequency of 800/533 MHz using a scalable FSB Vcc_CPU. The memory controller supports DDR memory DIMM frequencies of 333MHz and 400 MHz. It supports four DDR Sockets with up to maximum memory of 4 GB. DDR Maximum memory bandwidth of 3.2 GB/s in single-channel mode and 6.4 GB/s in dual-channel mode is supported. One 16-lane PCI Express port, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 1.0a.

The ICH6 Southbridge on this motherboard supports three PCI slots which are PCI 2.3 compliant. It implements an EHCI compliant interface that provides 480Mb/s bandwidth for eight USB 2.0 ports, AC'97 CODEC that features a 6-channel audio speaker out, One onboard IDE connector supports 2 IDE devices in ATA-100/66 mode. The Southbridge integrates a Serial ATA host controller that is SATA v1.0 compliant, supporting four SATA ports with maximum transfer rate up to 150 MB/s each.

The 915G-M5 motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, LPT, four USB ports, one VGA port, one optional LAN port, and audio jacks for microphone, line-in, and 8-channel line-out.

Feature

Processor

The 915G-M5 uses a LGA775 type of Pentium 4 that carries the following features:

- Accommodates Intel P4/Celeron processors
- Supports a system bus (FSB) of 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 915G Northbridge (NB) and ICH6 Southbridge (SB) chipset are based on an innovative and scalable architecture with proven reliability and performance.

915G (NB)

- Supports 32-bit host bus addressing, allowing the CPU to access the entire 4 GB of the memory address space.
- Has a 12-deep In-Order Queue to support up to twelve outstanding piplined address requests on the host bus.
- Supports 256-Mb, 512-Mb and 1-Gb DDR/DDR2 technologies for x8 and x16 devices
- Provides an integrated graphics device delivering cost competitive 3D, 2D and video capabilities.

915G chipset can only support 256-Mb, 512-Mb and 1-Gb DDR technologies for x8 and x16 device, NOT support 128-Mb DDR technology. That is, 256 MB Double Side Memory Module & 128 MB Single Side Memory Module are NOT support.

ICH6 (SB)

- Enhanced DMA Controller, interrupt controller, and timer functions
- Compliant with PCI 2.3 specificaiton
- Compliant with Serial ATA 1.0a specification
- Integrated USB 2.0 Host Controller supporting up to eight USB 2.0 ports
- Integrated LAN controller
- Integrated IDE controller supports Ultra ATA100/66/33

Memory

- Accommodates four unbuffered DIMMs
- Up to 1 GB per DIMM with maximum memory size up to 4 GB

Graphics

- Supports core frequency of 333 MHz
- Supports 3D Setup, Render Engine, and 3D Graphics Enhancements
- Supports High Quality Texture Engine
- Video DVD/PC-VCR

Onboard LAN (Optional)

This motherboard may support either of the following LAN chipset:

• Supports 100/10 Mb/s N-Way Auto negotiation operation • Half/Full duplex capability • Supports Wake-On-LAN(WOL) function and remote wake-up
• Integrate 10/100/1000 transceiver • Supports PCI v2.3, 32-bit, 33/66MHz • Supports fully with IEEE802.3, IEEE802.3u and IEEE802.3ab

Audio

This motherboard may support either of the following Audio chipset.

- Compliant with the AC'97 v2.3 CODEC
- Supports 6-channel audio CODEC designed for PC multimedia systems
- Provides three analog line-level stereo inputs with 5-bit volume control: Line-in, CD, AUX
- Supports S/PDIF output and input function

- Compliant with Azalia specification, supporting 8 channel DACs with SNR>95dB
- Capabilities: 192/96/48/44.1 KHz with 24/20/16 bits
- 8 Smart Jack I/O port support
- Extensive jack detection via RNM (resistors network method) that can be used to monitor the plugging status of each jack
- Digital S/PDIF OUT & IN support

Expansion Options

The motherboard comes with the following expansion options:

- One PIC Express x16 slot (optional)
- Three 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 that support four SATA devices

The 915G-M5 motherboard supports UltraDMA 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 and one parallel port
- Four USB ports
- One VGA port, one 1394 port (optional) and one LAN port (optional)
- Audio jacks for microphone in, line-in and line-out (Audio jack for microphone in, line-in and 8-ch High Definition Audio out if supports Azalia Audio CODEC.)

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 memory 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

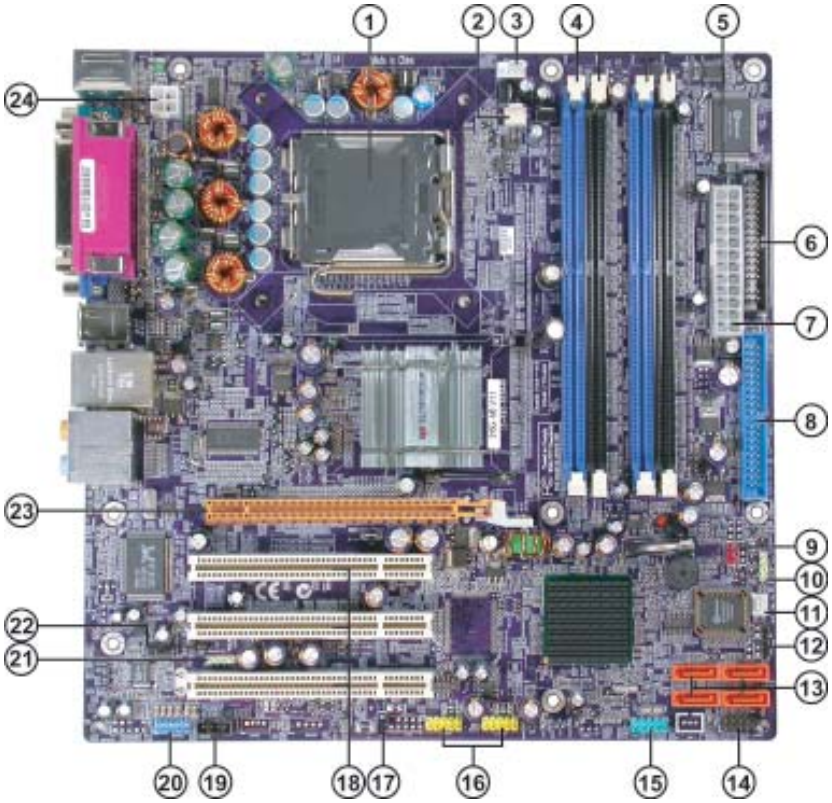


Table of Motherboard Components

LABEL	COMPONENT
1 CPU Socket	LGA775 socket for Pentium 4 CPUs
2 SYS_FAN	System fan connector
3 CPU_FAN	CPU cooling fan connector
4 DIMM1~4	Four 184-pin DDR SDRAM slots
5 CHS1	Chasis intrusion detection header
6 FDD	Floppy diskette drive connector
7 ATX1	Standard 24-pin ATX power connector
8 IDE1	Primary IDE channel
9 CLR_CMOS	Clear CMOS jumper
10 SPK1	Speaker header
11 PWR_FAN	Power fan connector
12 IRDA	Infrared header
13 SATA1~4	Four serial ATA connectors
14 F_PANEL	Front Panel switch/LED header
15 COM2	Onboard serial port header
16 F_USB1~F_USB2	Front Panel USB headers
17 BIOS_WP	BIOS flash protect jumper
18 PCI1~3	Three 32-bit add-on card slots
19 CDIN1	Primary CD-in connector
20 F_AUDIO1	Front panel audio header
21 SPDIF-O1	SPDIF out header
22 SPDIF-I1	SPDIF out header
23 PCIEX16	PCI Express X16 Graphics card slot
24 ATX12V	ATX12V power connector

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

Memo

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, 915G-M5 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.

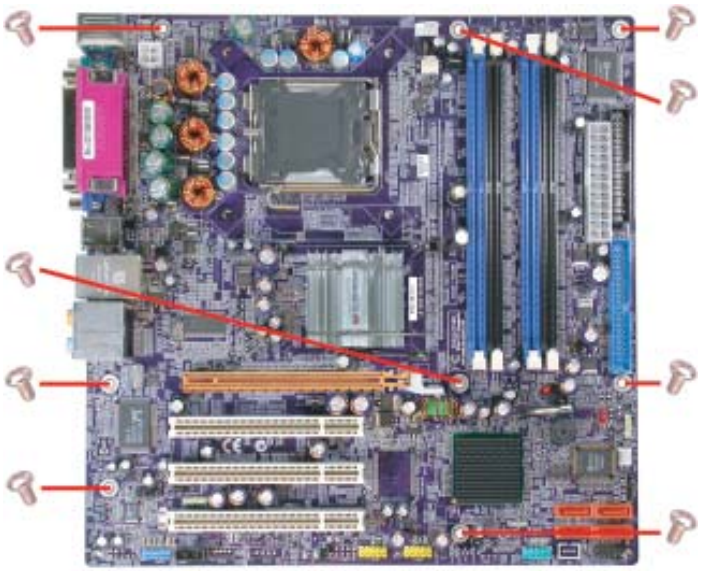
This motherboard carries a Micro ATX form factor of 244 x 244 mm. Choose a case that accommodates this form factor.

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.

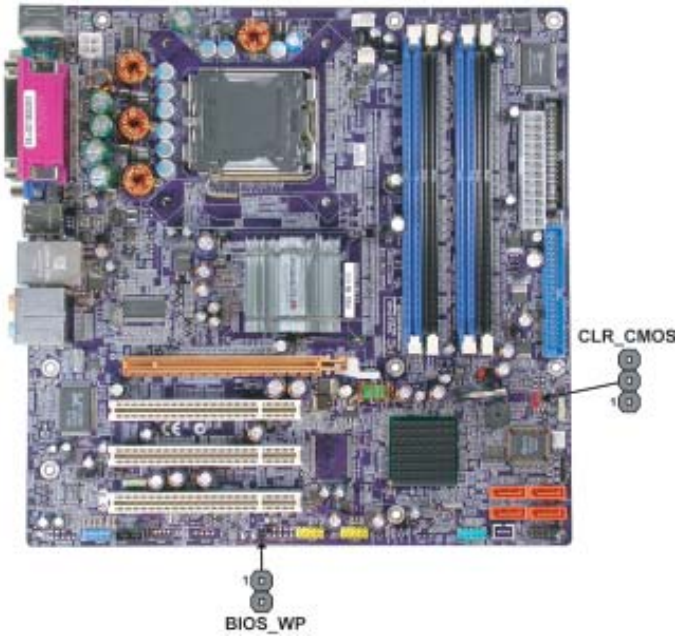
SHORT

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	Clear CMOS	1-2: CLEAR CMOS 2-3: NORMAL Before clearing the CMOS, make sure to turn off the system.	 1 CLR_CMOS
BIOS_WP	2-pin	BIOS_WP	OPEN: FLASH WRITE UNPROTECTED SHORT: FLASH WRITE PROTECTED	 BIOS_WP

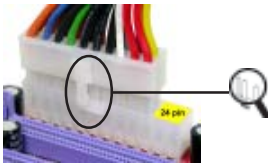
Connecting Case Components

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 case cooling fan connector to **SYS_FAN**.
3 Connect the auxiliary power supply cooling fan connector to **PWR_FAN**.
3 Connect the case speaker cable to **SPK1.**
4 Connect the case switches and indicator LEDs to the **F_PANEL**.
6 Connect the standard power supply connector to **ATX1**.
7 Connect the auxiliary case power supply connector to **ATX12V**.

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

Users please note that when installing 20-pin power cable, the latche of power cable clings to the left side of the ATX1 connector latch, just as the picture shows.

24-pin power cable

Users please note that when installing 24-pin power cable, the latches of power cable clings to right side of the ATX1 connector.

CPU_FAN: FAN Power Connector

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

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

PWR_FAN/SYS_FAN: FAN Power Connectors

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

SPK1: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NO
4	Signal

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	COM
4	+5V	16	PS_ON
5	Ground	17	COM
6	+5V	18	COM
7	Ground	19	COM
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	COM

ATX12V: ATX 12V Power Connector

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

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:

F_PANEL

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.

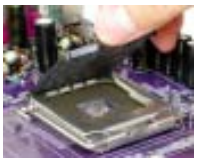
Warning: Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

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. Unload the cap
- Use thumb & forefinger to hold the lifting tab of the cap.
- Lift the cap up and remove the cap completely from the socket.



B. Open the load plate
- Use thumb & forefinger to hold the hook of the lever, pushing down and pulling aside unlock it.
- Lift up the lever.
- Use thumb to open the load plate. Be careful not to touch the contacts.

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

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

E. Apply thermal grease on top of the CPU.

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

G. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.

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

Installing Memory Modules

This motherboard accommodates four 184-pin 2.5V unbuffered DIMM and supports DDR 333/400. You must install at least one module in any of the four slots. Each module can be installed with 256MB to 1GB of memory; the total memory capacity is 4GB.

DDR SDRAM memory module table

Memory module	Memory Bus
DDR 333	***166MHz***
DDR 400	***200MHz***

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 DDR and 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.

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

The following DDR400 memory modules have been tested and qualified for use with this motherboard.

Size	Vendor	Model Name
256MB	GEIL	GE08L3264D1WL5NKT3H71
	Samsung	K4H560838D-TCCC
	Kingston	D3208DL2T-5 0323PT01
	HYNIX	HY5DU5656822BT-D43
	Apacer	AM3A568ACT-5A
	Samsung	K4H560838E-TCCC
	CORSAIR	CMX256 3200C2PT
	Kingston	K4H560838D-TCC4
	GEIL	G216L6464D2TG5NKT2L
	GEIL	GE08L3264D1WL5NKT3H71
	Samsung	K4H560838D-TCCC
	Kingston	D3208DL2T-5 0323PT01
	HYNIX	HY5DU5656822BT-D43
	Apacer	AM3A568ACT-5A
	GEIL	G208L364D1TG5NKT3C
	Ramaxel	MT-46V32M8 TG-5BC
	Samsung	K4H560838E-TCCC
	CORSAIR	CMX256 3200C2PT
	Kingston	K4H560838D-TCC4
	GEIL	G216L6464D2TG5NKT2L
512 MB	Kingston	SAMSUNG K4H560838D-TCC4
	Samsung	K4H560838E-TCCC
	GEIL	GE16L6464D2 WL5NKT3H66
	Kingston	SAMSUNG K4H560838D-TCC4
	Samsung	K4H560838E-TCCC
	GEIL	GE16L6464D2 WL5NKT3H66

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 , or 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)

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.

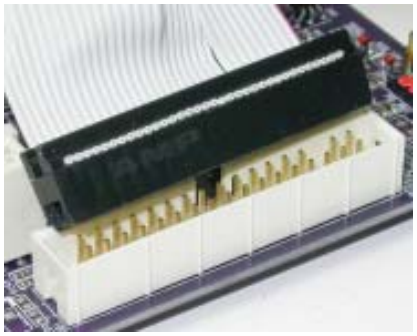
Installing a Floppy Diskette Drive

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.

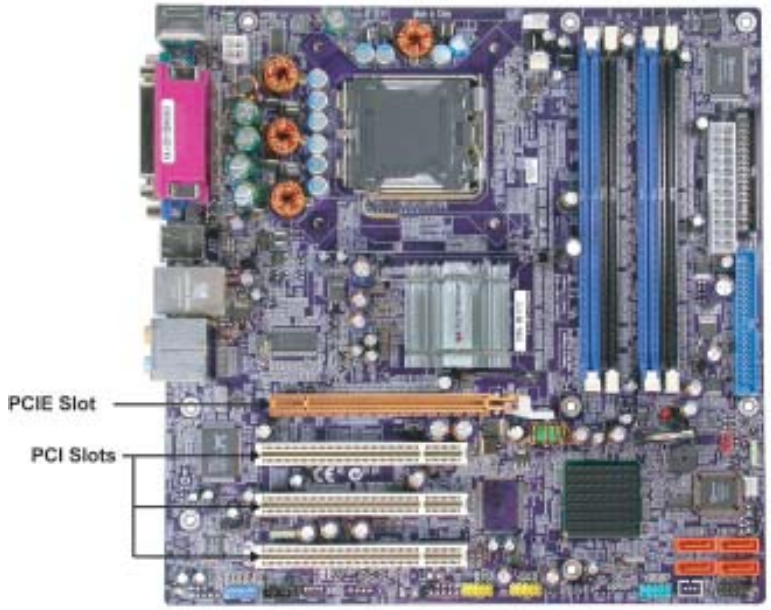
FDC1: Floppy Disk Connector

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 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 There is one PCI Express x16 slot onboard. The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a

PCI 1/2/3 Slots This motherboard is equipped with three 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.

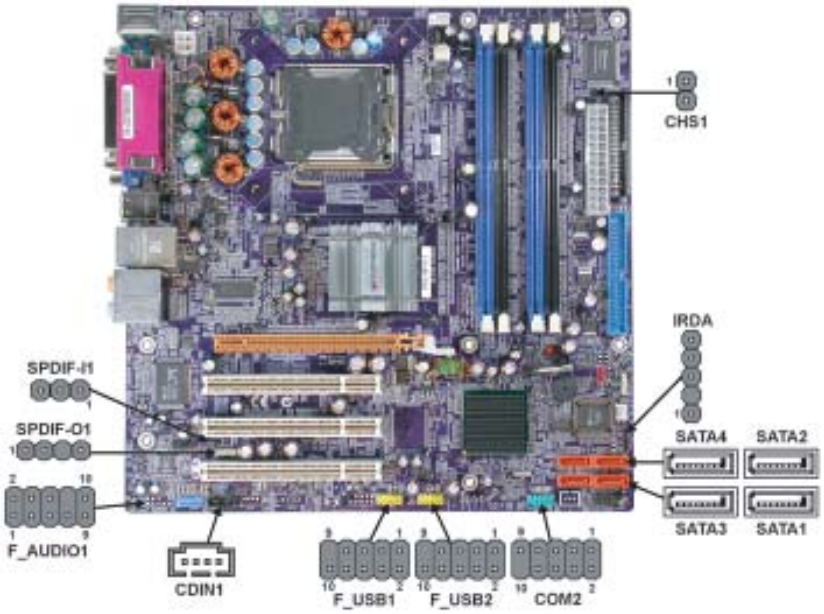
Follow these instructions to install an add-on card:

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:



F_USB1/F_USB2: 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 hand-up.

F_AUDIO1: Front Panel Audio header

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

Pin	Signal Name	Function
1	AUD_MIC	Front Panel Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	AUD_MIC_BIAS	Microphone Power
4	AUD_VCC	Filtered +5V used by Analog Audio Circuits
5	AUD_FPOUT_R	Right Channel audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	HP_ON	Reserved for future use to control Headphone Amplifier
8	Key	No Pin
9	AUD_F_L	Left Channel Audio signal to Front Panel
10	AUD_RET_L	Left Channel Audio signal to Return from Front Panel

F_AUDIO2: Front Panel Audio header for Azalia (optional)

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

Pin	Signal Name
1	PORT-FL
2	GND
3	PORT-FR
4	ACZ-DET
5	PORT-ER
6	AGND
7	SENSE B
8	Key
9	PORT-EL
10	GND

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

AUXIN1: Auxiliary-in connector

This connector is an additional line-in audio connector. It allows you to attach a line-in cable when your rear line-in jack is set as line out port for 4-channel function.

Pin	Signal Name	Function
1	AUXIN_L	AUX In left channel
2	AGND	Ground
3	AGND	Ground
4	AUXIN_R	AUX In right channel

CDIN1: Primary CD-in connector

Pin	Signal Name
1	CD _L
2	GND
3	GND
4	CD _R

SATA1/2/3/4: Serial ATA connectors

These connectors are use to support the new Serial ATA devices for the highest date transfer rates (150 MB/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	-	-

COM2: Onboard serial port header

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

Pin	Signal Name	Function
1	NDCDB	Data carry detect
2	NSINB	Serial Data In
3	NSOUTB	Serial Date Out
4	NDTRB	Data terminal ready
5	GND	Ground
6	NDSRB	Date set ready
7	NRTSB	Request to send
8	NCTSB	Clear to send
9	NRIB	Ring Indicator
10	Key	No pin

SPDIF1: SPDIF in header

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

Pin	Signal Name	Function
1	VCC3	Power
2	GND	Ground
3	SPDIF	SPDIF digital input

SPDIFO1: SPDIF out header

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.

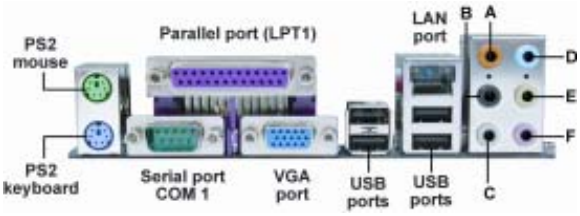
Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog power
3	Key	No pin
4	GND	Ground

CHS1: Chasis intrusion detection header

Pin 1~2	Function
Short	Case Open
Open	Case Close

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.

LAN Port (optional) 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 correspond 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.

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

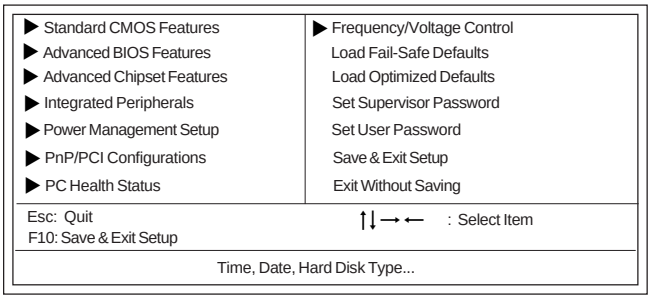
Entering the Setup Utility

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:



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>.

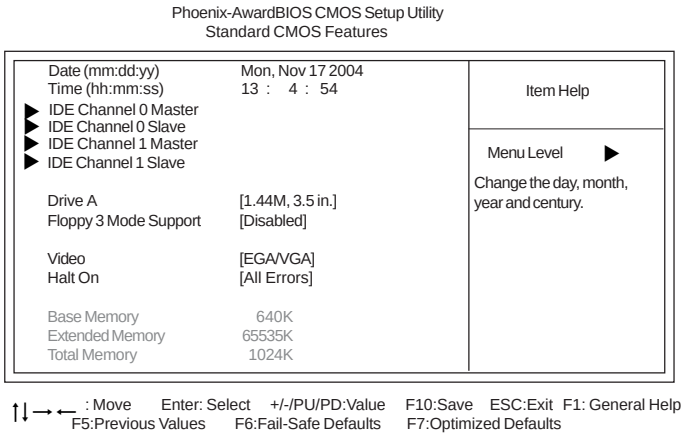
Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

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.



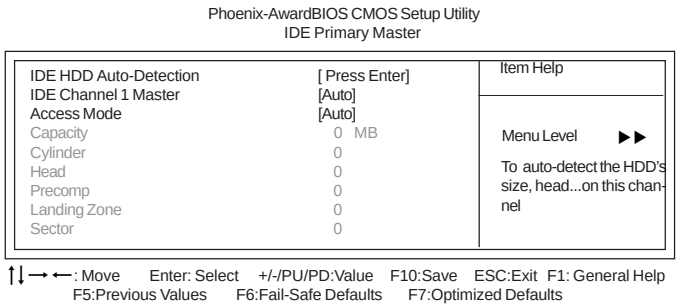
Date and Time

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). In addition, this motherboard supports two SATA channels (Primary and Secondary) and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.

Press <Enter> to display the IDE submenu:



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 (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.

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.

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

Drive A (1.44M, 3.5 in./None)

These items define 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.

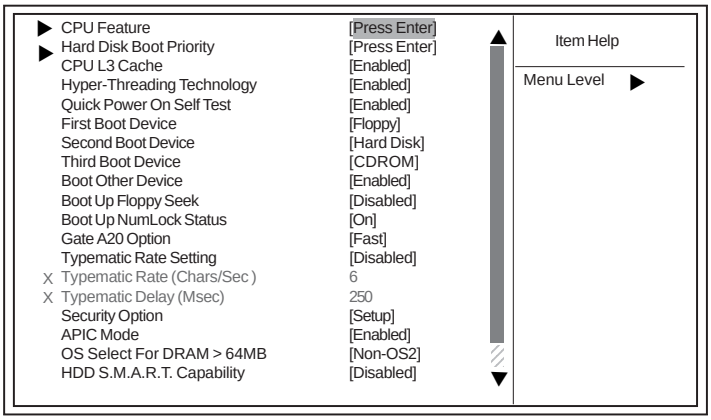
Base Memory, Extended Memory, and Total Memory

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

Advanced BIOS Features

This option defines advanced information about your system.

Phoenix-AwardBIOS CMOS Setup Utility
Advanced BIOS Features

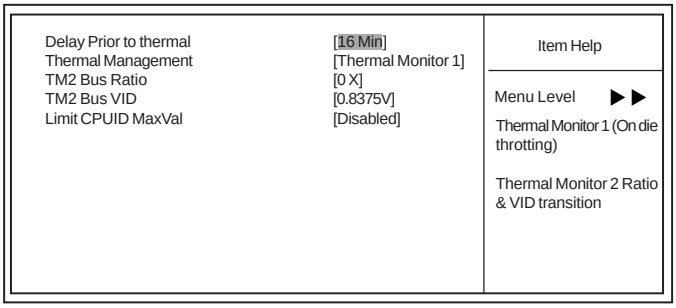


↑↓→←: Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

▶ 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



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

Delay Prior to Thermal (Thermal Monitor 1)

This item 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 helps you to set the frequency (bus ratio) of the throttled performance that will be initiated when the on-die sensor goes from not hot to hot. You may set the bus ratio number from 0-255. This feature is available when CPU supports Thermal Monitor 2.

TM2 Bus VID (0.8375V)

This item helps you to set the voltage of the throttled performance that will be initiated when the on-die sensor goes from not hot to hot. This feature is available when CPU supports Thermal Monitor 2.

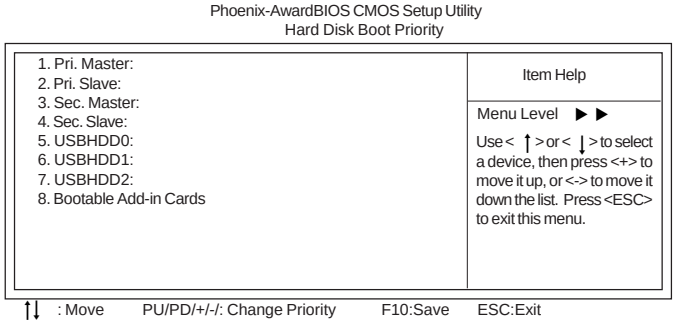
Limit CPUID MaxVal (Disabled)

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".

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

▶Hard Disk Boot Priority (Press Enter)

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



CPU L3 Cache (Enabled)

All Prescott processors that can be installed in this mainboard use Level 3 (L3) cache memory to improve performance. Leave this item at the default value for better performance. This item is only available when you use L3 cache supported CPU.

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)

This item determines whether the BIOS will report no FDD for Windows 95 OS.

Full Screen LOGO Show (Enabled)

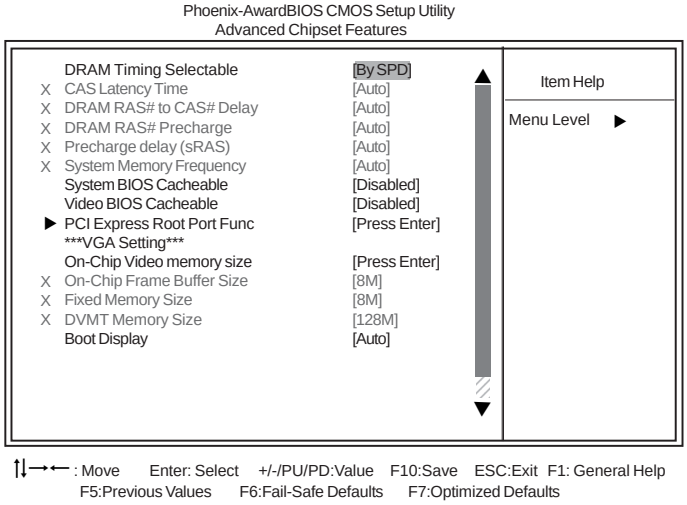
When enabled, this will show a full screen company logo on the boot up screen. Select disabled when you want to show POST messages during boot up.

Small Logo (EPA) Show (Disabled)

Enables or disables the display of the EPA logo during boot.

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.



DRAM Timing Selectable (By SPD)

Enables you to select the CAS latency time in HCLKs of 2, 2.5, or 3. The value is set at the factory depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU.

- **CAS Latency Time (Auto):** This item controls the timing delay (in clock cycles) before the DRAM starts a read command after receiving it.
- **DRAM RAS# to CAS# Delay (Auto):** This field lets 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 forthe Row Address Strobe (RAS#) signal to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incom plete and data lost.
- **Precharge delay (tRAS):** The precharge time is the number of cycles it takes for DRAM to accummulate charge before refresh.
- **System Memory Frequency (Auto):** This item sets the main memory fre quency. When you use an external graphics card, you can adjust this to enable the best performance for your system.

System BIOS Cacheable (Disabled)

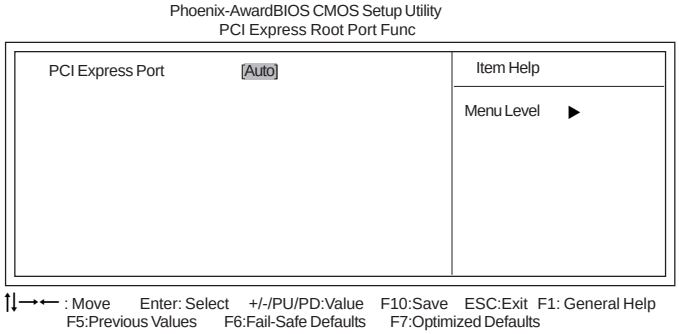
When this item is enabled, the System BIOS will be cached for faster execution.

Video BIOS Cacheable (Disabled)

When this is enabled, the Video RAM will be cached resulting to better performance. However, if any program was written to this memory area, this may result to system error.

►PCI Express Root Port Func (Press Enter)

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



PCI Express Port 1 (Auto)

This item enables PCI transmission to a higher level.

Press <Esc> to return to the Advanced Chipset Features screen.

O-chip Video memory size (Press Enter)

This item combines the following 3 items, which are On-Chip Frame Buffer Size, Fixed memory size, and DVMT memory size.

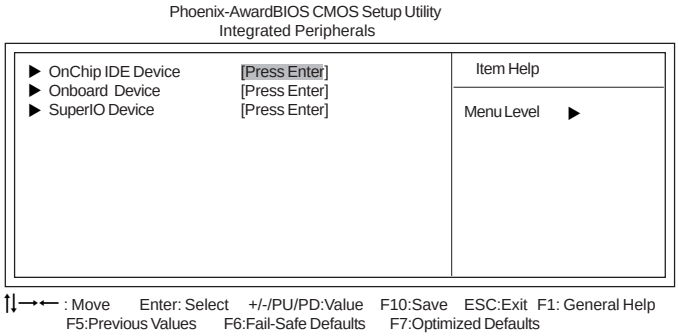
- **On-chip Frame Buffer Size (8M):** This item allows you to set the VGA frame buffer size.
- **Fixed memory size (8M):** This item allows you to select a static amount of page-locked graphics memory that is allocated during driver initialization. The item provides the total amount of graphics memory available to the system.
- **DVMT Momory size (128M):** 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 depending on your application.

Boot Display (Auto)

This item is for Intel define ADD card only.

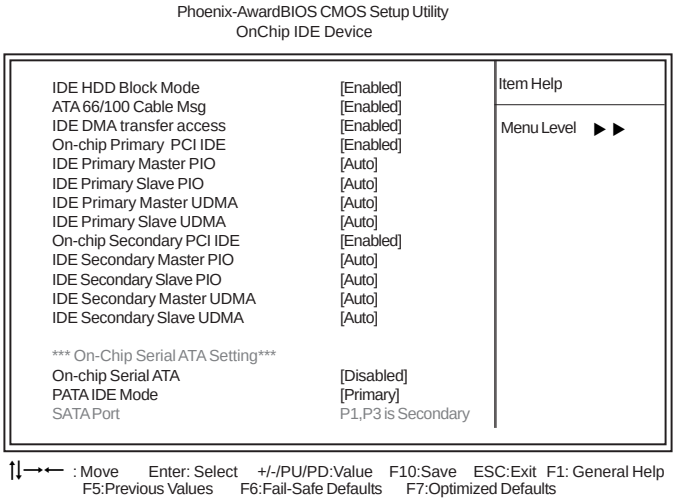
Integrated Peripherals

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



►OnChip IDE Device

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



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/write per sector the drive can support.

ATA 66/100 Cable Msg (Enabled)

This item enalbes or disabled the display of the ATA 66/100 Cable Msg. If you install a device that supports UDMA, change the appropriate item on this list to Auto. You may have to install the UDMA driver supplied with this motherboard in order to use an UDMA device.

IDE DMA transfer access (Enabled)

This item allows you to enable the transfer access of the IDE DMA.

On-Chip Primary/Secondary PCI IDE (Enabled)

This integrated peripheral controller contains an IDE interface with support for two IDE channels. Select Enabled to activate each channel seperately.

IDE Primary/Secondary Master/Slave PIO (Auto)

Each IDE channel supports a master device and a slave device. These four items let you assign the kind of PIO (Programmed Input/Output) was used by the 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 UDMA (Auto)

Each IDE channel supports a master device and a slave device. This mainboard supports UltraDMA technology, which provides faster access to IDE devices. If you install a device that supports UltraDMA, change the appropriate 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 (Disabled)

When set to disabled, then the SATA controller is disabled; when set to Auto, then it will be automatically arranged by BIOS; when set to combined mode, then PATA and SATA are combined. Maximum of 2 IDE drives in each channel. When set to enhanced mode, then bothe SATA and PATA will be enabled. Maximum of 6 IDE drives are supported. When set to SATA only, then SATA is operating in legacy mode.

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 screen.

►Onboard Device

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

Phoenix-AwardBIOS CMOS Setup Utility
Onboard Device

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

↑↓→← : 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)

This item enables the USB controller. Leave this at the default “Enabled” if you want to connect USB devices to your computer.

USB 2.0 Controller (Enabled)

Enable this item if want to use the USB 2.0.

USB Keyboard Support (Enabled)

This item allows the BIOS to interact with a USB keyboard or mouse to work with MS-DOS based utilities and non-Windows modes.

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 (Enabled)

This option allows you to enable or disable the onboard audio. Disable this item if you are going to install a PCI audio add-on card.

Onboard LAN Device (Enabled)

This option allows you to enable or disable the onboard LAN.

Onboard LAN Boot ROM (Disabled)

Use this item to enable and disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

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

►SuperIO Device

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

Phoenix-AwardBIOS CMOS Setup Utility
SuperIO Device

POWER ON Function	[Hot Key]	Item Help
KB Power ON Password(S3)	[Enter]	
Hot key Power ON(S3)	[Ctrl-F12]	Menu Level ▶▶
Onboard FDC Controller	[Enabled]	
Onboard Serial Port1	[3F8/IRQ4]	
UART 2 Mode Controller	[Disabled]	
UART 2 Select	[Normal]	
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Use IR Pins	[IR-Rx2Tx2]	
Onboard Parallel Port	[378/IRQ7]	
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.

KB Power ON Password(S3) (Enter)

When the POWER ON Function is set to Password, use this item to set the passowrd.

Hot Key Power On(S3) (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 Port1 (3F8/IRQ4)

This option is used to assign the I/O address and interrupt request (IRQ) for onboard serial port1 (COM1).

UART 2 Mode Control (Disabled)

This item allows users to enable or disable the onboard UART2 mode control.

UART 2 Select (Normal)

This field is available if the "Onboard Serial Port 2" is set to any option but Disabled. UART Mode Select enables you to select the infrared communication protocol-Normal (default), IrDA, or ASKIR. IrDA is an infrared communication protocol with a maximum baud rate up to 115.2K bps. ASKIR is Sharp's infrared communication protocol with a maximum baud rate up to 57.6K bps.

RxD , TxD Active (Hi, Lo)

This feature enables you to set the IR reception/transmission polarity as High or Low

IR Transmission Delay (Enabled)

This field enables you to set the whether the IR transmission rate will be delayed while converting to receiving mode.

UR2 Duplex Mode (Half)

This field is available when UART 2 Mode is set to either ASKIR or IrDA. This item enables you to determine the infrared function of the onboard infrared chip. The options are Full and Half (default). Full-duplex means you can transmit and receive data simultaneously. Half-duplex is the transmission of data in either transmitting or receiving, only one direction at a time.

Use IR Pins (IR-Rx2Tx2)

Please consult your IR peripheral documentation to select the correct setting of the TxD and RxD signals.

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 tp ECP mode, the parallel port can use DMA3 or DMA1.

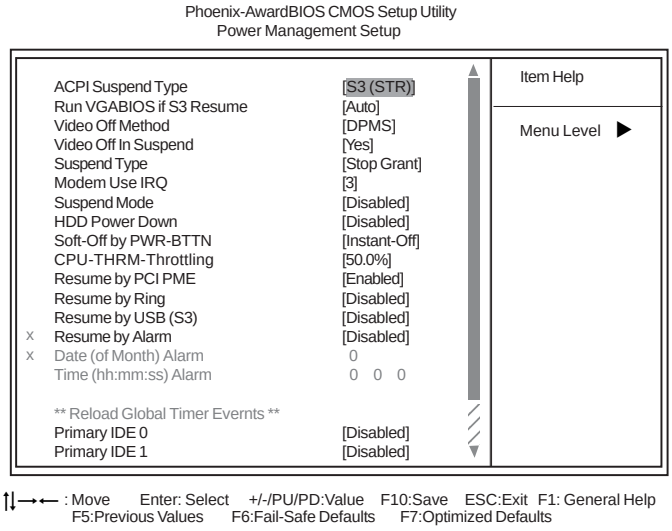
Press <Esc> to return to the Integrated Peripherals screen.

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.

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.

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



ACPI Suspend Type (S3(STR))

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

Run VGABIOS if S3 Resume (Auto)

Use this item 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.

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 (AUTO)

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.

Suspend Mode (Disabled)

The CPU clock will be stopped and the video signal will be suspended if no Power Management events occur for a specified length of time. Full power function will return when a Power Management event is detected. Options are from 1 Min to 1 Hour and Disabled.

HDD Power Down (Disabled)

The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

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 reaches 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, and incoming call on the modem) awakens the system from a soft off state.

Resume by USB (S3)

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 ****

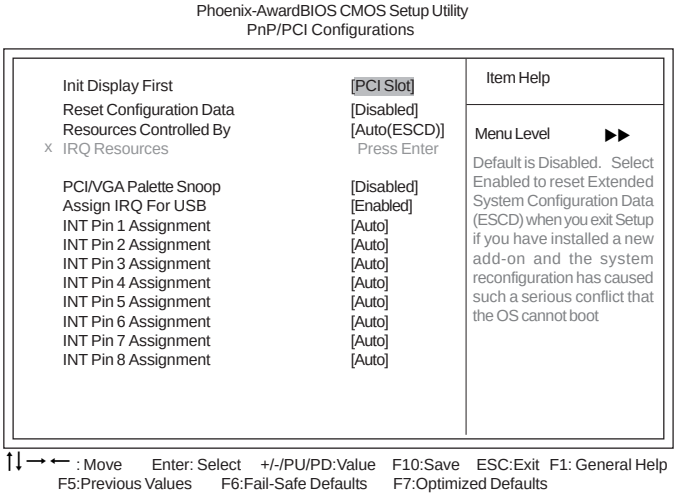
This field indicates which events waken the system from power saving mode.

Primary/Secondary IDE (Disabled)

When this item is enabled, the system power will resume the system from a power saving mode if there is any activity on primary or secondary IDE channel 0 or 1.

PNP/PCI Configurations

This section describes configuring the PCI bus system. PCI (Peripheral Component Interconnect) is a system, which allows I/O devices to operate at speeds nearing CPU's when they communicate with own special components. All the options describes in this section are important and technical and it is strongly recommended that only experienced users should make any changes to the default settings.



Init Display First (PCI Slot)

Use this item to specify the initial display to be the PCI slot or the graphics chip integrated on the motherboard.

Reset Configuration Data (Disabled)

When 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(ECSD))

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.

- 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.

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.

Assign IRQ For USB (Enabled)

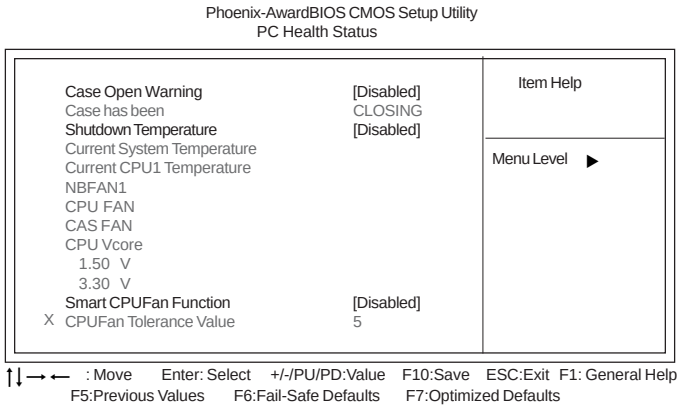
"Enable" or "Disable" this item when users are to assign IRQ for the USB interface onboard.

INT Pin1~8 Assignment (Enabled)

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

PC Health Status

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



Case Open Warning (Disabled)

This item enables or disabled the warning if the case is opened up, and the item below indicates the current status of the case.

Shutdown Temperature (Disabled)

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

System Component Characteristics

These items allow end users and technicians to monitor data provided by the BIOS on this motherboard. You cannot make changes to these fields.

- Current CPU/System Temperature
- NB FAN Speed
- CPU Fan Speed
- CAS FAN Speed
- CPU Vcore
- 1.5V
- 3.3V

Smart CPUFan Function (Disabled)

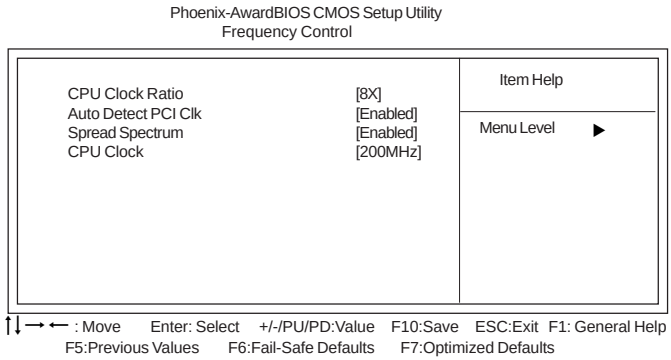
This item enables users to set to which Celsius degree when the Smart Fan2 start functioning. The default value is 40 to 104 Celsius degree.

CPUFan Tolerance Value (5)

This item helps you to adjust the frequency of Smart Fan.

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.



CPU Clock Ratio (8X)

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. (For unlock Ratio CPU only.)

Example:	***CPU Clock Ratio***	***8***
	CPU Frequency	***X200***
	Installed CPU Clock Speed	***1600 MHz***

Auto Detect DIMM/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)

Use the CPU Host Clock to set the frontside bus frequency for the installed processor. You can key in the number 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 then <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>.

Set Supervisor/User 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 Option

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.

Never try to install all software from folfer that is not specified for use with your motherboard.

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.

Auto-installing under Windows 98/ME/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 98/ME/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 DOS, WIN NT, or WIN98/95. 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.

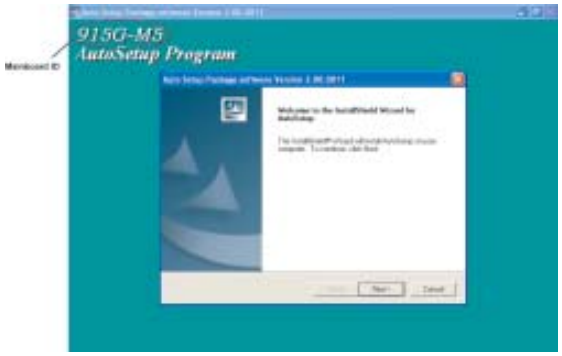
Read Me Tab

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:

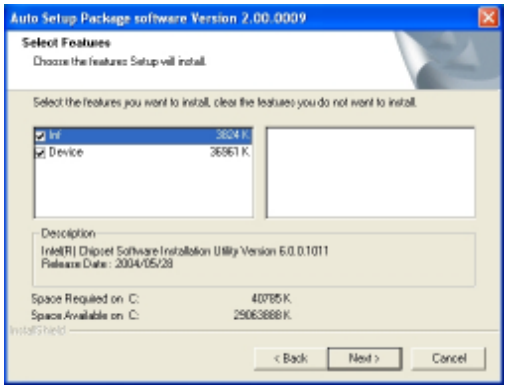
1. *Click **Setup.** The installation program begins:*



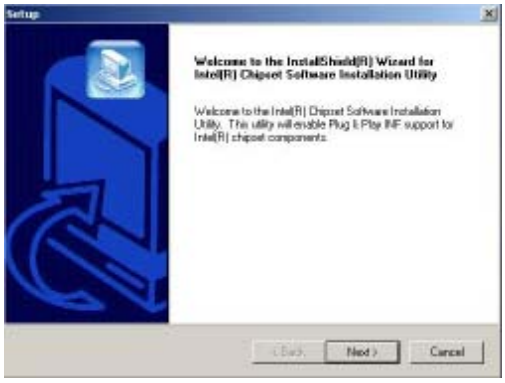
The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

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

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.

AMI/AWARD Flash Utility

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

WinFlash Utility

The Award WinFlash utility is a Windows version of the DOS Award BIOS flash writer utility. The utility enables you to flash the system BIOS stored on a Flash Memory chip on the motherboard while in a Windows environment. This utility is currently available for WINXP\ME\2000\98SE. To install the WinFlash utility, run WINFLASH.EXE from the following directory: \UTILITY\WINFLASH 1.51

This concludes Chapter 4.

Caractéristiques

Processeur

La 915G-M5 utilise un type LGA775 de Pentium 4 présentant les fonctionnalités suivantes:

- Reçoit des processeurs Intel P4/ Celeron
- Support un bus système (FSB) de 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 915G Northbridge (NB) Chipset et ICH6 Southbridge (SB) se base sur une architecture innovante et évolutive avec des performances et une fiabilité éprouvées.

915G(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.
- Possède une “12-deep In-Order Queue” pour prendre en charge jusqu’à douze requêtes d’adresse en pipeline exceptionnelles sur le bus hôte.
- Prend en charge les technologies DDR/DDR2 256-Mb, 512-Mb et 1-Gb pour x8 et x16 périphériques
- Procure un périphérique graphique intégré offrant des capacités 3d, 2D et vidéo d’un coût compétitif.

Le chipset 915G peut seulement prendre en charge les technologies DDR 256-Mb, 512-Mb et 1-Gb pour x8 et x16 périphériques, NE prend PAS en charge la technologie DDR 128-Mb. C’est à dire que le Module Mémoire Double Face de 256 Mo & le Module Mémoire Simple Face de 128 Mo NE sont PAS pris en charge.

ICH6 (SB)

- Fonctions de Contrôleur DMA Amélioré, de contrôleur d’interruption, et de minuterie
- Conforme aux spécifications PCI 2.3.
- Conforme aux spécifications ATA 1.0a Série
- Contrôleur d’Hôte USB 2.0 intégré prenant en charge jusqu’à huit ports USB 2.0
- Contrôleur LAN intégré
- Contrôleur IDE intégré prenant en charge Ultra ATA100/66/33

Mémoire

- Reçoit quatre DIMM sans tampon
- Jusqu’à 1 Go par DIMM avec une taille de mémoire maximum de 4 Go

Graphiques

- Prend en charge la fréquence du noyau de 333 MHz
- Prend en charge la Configuration 3D, Moteur de Rendu, et Améliorations Graphiques 3D
- Prend en charge un moteur de texture de haute qualité
- DVD/PC-VCR Vidéo

LAN sur carte (Optionnel)

Cette carte mère prend en charge les chipsets LAN suivants :

• Supporte le fonctionnement en Auto-négociation N-way en 100/10 Mb/s • Prend en charge la capacite half/full duplex • Supporte la fonction Wake-On-LAN (WOL) -réveil par appel réseau et le réveil à distance
• 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 et IEEE 802.3ab

Audio

Cette carte mère prend en charge les chipsets Audio suivants:

• Conforme au CODEC AC'97 V2.3 • 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 • Prend en charge la fonction de sortie S/PDIF
• Conforme à la spécification Azalia, prenant en charge 8 canaux DAC avec SNR > 95dB • Compatibilités: 192/96/48/44.1 KHz avec 24/20/16 bits • Support de port d'E/S à 8 prises intelligentes • Détection de prise étendue via RNM (resistors network method) pouvant être utilisée pour surveiller l'état de branchement de chaque prise • Support de SORTIE & ENTRÉE S/PDIF numérique

Options d'extension

La carte mère comporte les options d'extension suivantes :

- Un logement PIC Express x16 (optionnel)
- Trois 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 prenant en charge quatre périphériques SATA

La 915G-M5 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 et un port parallèle
- Quatre ports USB
- Un port VGA, un port 1394 (optionnel) et un port LAN (optionnel)
- Prises audio pour entrée microphone, ligne d'entrée et ligne de sortie (Prise audio pour entrée microphone, ligne d'entrée et sortie audio haute définition à 8 canaux si le CODEC Audio Azalia est pris en charge.)

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.

Leistungsmerkmale

Prozessor

Der 915G-M5 benutzt einen Pentium 4 des Typs LGA775 und besitzt folgende Eigenschaften:

- Aufnahme eines Intel P4/Celeron-Prozessors.
- Unterstützt einen Systembus (FSB) mit 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

Der 915G Northbridge (NB)- sowie ICH6 Southbridge (SB)-Chipsatz basiert sich auf eine innovative und skalierbare Architektur mit bewiesenr Zuverlässigkeit und Leistung.

915G (NB)

- Unterstützung einer 32-Bit Host-Bus-Adressierung, welche der CPU einen Zugriff zum kompletten Speicherplatz von 4 GB erlaubt.
- Zur Unterstützung von bis zu 12 aufeinanderfolgenden offenstehenden Befehlen im Host Bus, hat er eine 12fach verstärkte Reihenfolgewarteschlange.
- Unterstützung von 256-Mb, 512-Mb und 1-Gb DDR/DDR2 -Technologien für x8 und x16 Zubehör.
- Stellt eine integrierte Grafikvorrichtung zur Verfügung, die kosteneffektives 3D, 2D und Video liefert.

Das 915G Chipset kann nur 256-Mb, 512-Mb und 1-Gb DDR-Technologien für x8 und x16 Zubehör unterstützen; KEINE Unterstützung für die 128-Mb DDR-Technologie. Das bedeutet, daß das 256 MB Double Side Memory Modul & 128 MB Single Side Memory Modul nicht unterstützt wird.

ICH6 (SB)

- Verbesserter DMA-Kontroller, Unterbrechungskontroller und Zeitfunktionen.
- Gemäß Spezifikationen von PCI 2.3.
- Gemäß Serial ATA 1.0a Spezifikationen.
- Integrierter USB 2.0 Host-Kontroller, welcher bis zu acht USB 2.0 Steckvorrichtungen unterstützt.
- Integrierter LAN-Kontroller.
- Integrierter IDE-Kontroller, welcher Ultra ATA100/66/33 unterstützt.

Arbeitsspeicher

- Es können vier ungepufferte DIMMs aufgenommen werden.
- Bis zu 1 GB pro DIMM mit maximaler Speicherkapazität von bis zu 4 GB.

Graphik

- Unterstützt Kernfrequenzen von 333 MHz
- Unterstützt 3D Setup, Wiedergabe Engine, und 3D Grafikerweiterungen
- Unterstützt hochqualitative Struktur Engine
- Video DVD/PC-VCR

Onboard LAN (Optional)

Dieses Mainboard kann einen der folgenden LAN-Chipsätze unterstützen:

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

Audio

Dieses Mainboard kann einen der folgenden Audio-Chipsätze unterstützen:

- 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
- Unterstützt S/PDIF Ausgangsfunktion

- Gemäß Azalia-Spezifikationen, mit Unterstützung von 8-Kanal-DACs mit SNR > 95dB
- Kompatibilität: 192/96/48/44.1 KHz mit 24/20/16 bits
- Unterstützung von 8 Smart-I/O-Steckvorrichtungen
- Erweiterte Steckerauffindungsanzeige via RNM (Resistors Network Method), welche zur Überwachung des Einsteckstatus der einzelnen Stecker benutzt werden kann
- Digitale S/PDIF OUT & IN Unterstützung

Erweiterungsmöglichkeiten

Das Motherboard ist mit den folgenden Erweiterungsmöglichkeiten ausgestattet:

- Ein PIC Express x16 Steckplatz (optional)
- Drei 32-bit PCI v2.3-Steckplätze
- Einen 40-Pin IDE low profile-Stecker, die zwei IDE-Kanäle unterstützen
- Ein Diskettenlaufwerkanschluss
- Vier 7-Pin SATA-Stecker, die vier SATA-Geräte unterstützen

Die 915G-M5 Mainboard kann einen der folgenden Audio-Chipsätze unterstützen: -Motherboard unterstützt UltraDMA Bus Mastering mit einer Übertragungsrate von 100/66 MB/Sek.

Integrierte I/O

Das Motherboard hat einen vollständigen Satz von I/O-Schnittstellen bzw. -Anschlüssen:

- Zwei PS/2-Anschlüsse für Maus und Tastatur
- Eine serielle Schnittstelle und eine parallele Schnittstelle
- Vier USB-Anschlusse
- Ein VGA- Steckplatz, ein 1394- Steckplatz (optional) und ein LAN- Steckplatz (optional)
- Audiobuchsen für Mikrofon-in, Line-in und Line-out (Audiobuchsen für Mikrofon-in, Line-in und 8-Ch High Definition Audio-out, falls der Azalia Audio CODEC unterstützt wird)

BIOS-Firmware

Das Motherboard 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 Prozessortaktgeschwindigkeiten verwendet werden.

Manche Hardwarespezifikationen und Softwareelemente können ohne Ankündigung geändert werden.

Caratteristiche

Processore

Il 915G-M5 sfrutta un Pentium 4 di tipo LGA775 che dispone delle seguenti caratteristiche:

- Alloggia processori Intel P4/Celeron
- Supporta un bus di sistema (FSB) fino a 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 915G Northbridge (NB) e ICH6 Southbridge (SB) sono basati su una architettura innovativa e scalabile dalle prestazioni e affidabilità garantite.

915G (NB)

- Supporta un indirizzamento host bus da 32 bit, consentendo alla CPU di accedere a tutti i 4 GB della memoria di sistema.
- Dispone di una coda in ordine per supportare sino a dodici richieste di indirizzo pipelined in sospeso sull’host bus.
- Supporta tecnologie DDR/DDR2 da 256-Mb, 512-Mb e 1-Gb per dispositivi x8 e x16
- Periferica grafica integrata in grado di offrire funzionalità 3D, 2D e video a un costo concorrenziale

Il chipset 915G può supportare solo tecnologie DDR da 256-Mb, 512-Mb e 1-Gb per dispositivi da x8 e x16, NON supporta tecnologie DDR da 128-Mb. Cioè, non sono supportati moduli di memoria Double Side da 256-MB e moduli di memoria Single Side da 128-MB.

ICH6 (SB)

- Controller DMA migliorato, controller interrupt e funzioni di timer
- Conforme alle specifiche PCI 2.3.
- Conforme alle specifiche Serial ATA 1.0a
- Host Controller USB 2.0 integratoin grado di supporare sino a 8 porte USB 2.0
- Controller LAN integrato
- Integrato con controller IDE supporta Ultra ATA100/66/33

Memoria

- Alloggia quattro DIMM unbuffered
- Dimensione massima della DIMM pari ad 1 GB per un ammontare massimo di 4 GB di memoria

Grafica

- Supporto di frequenza del core di 333 MHz
- Supporto di setup 3D, motore di rendering e ottimizzazione della grafica 3D
- Supporto di motore di trama ad alta qualità
- Video DVD/PC-VCR

LAN Onboard (Opzionale)

La scheda madre offre supporto per uno dei seguenti chipset LAN:

• Supporta operazioni di auto-negoziazione N-way a 100/10 Mb/s • Supporto di funzionalità half/full duplex • Supporto funzione WOL (Wake-On-LAN) e wake up remoto
• Transceiver 10/100/1000 integrato • Supporta PCI v2.3, 32-bit, 33/66-MHz • Completamente conforme con l’IEEE 802.3, IEEE 802.3u e IEEE 802.3ab

Audio

La scheda madre offre supporto per uno dei seguenti chipset audio.

• Conforme alla specifica AC'97 v2.3 CODEC • 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 • Supporto di funzionalità S/PDIF in uscita
• Compatibile con le Specifiche di Azalia, in grado di supportare 8 canali DAC con SNR > 95dB • Compatibili: 192/96/48/44.1 KHz a 24/20/16 bits • Supporta 8 porte I/O Smart Jack • Completo rilevamento jack via RNM (resistors network method) che può essere utilizzato per monitorare lo stato di connessione di ciascun jack • Supporta digital S/PDIF OUT & IN

Opzioni di espansione

La scheda madre è dotata delle seguenti opzioni di espansione:

- Uno slot PIC Express x16 (opzionale)
- Tre slot PCI v2.3 a 32 bit
- Una connettori IDE a 40 pin che supportano due canali IDE
- Una interfaccia floppy disk
- Quattro connettori SATA a 7 pin con supporto di quattro dispositivi SATA

La scheda madre 915G-M5 supporta bus master UltraDMA con tasso di trasferimento di 100/66 MB/s.

I/O integrato

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 e una porta parallela
- Quattro porte USB
- Una porta VGA, una porta 1394 (opzionale) e una porta LAN (opzionale)
- Jack di ingresso audio per microfono, ingresso e uscita lineari (jack di ingresso audio per microfono, ingresso lineare e uscita audio ad alta definizione a 8 canali se dotata di supporto di Audio CODEC Azalia)

Firmware BIOS

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

- Gestione energia
- Allarmi wake up
- Parametri CPU
- Temporizzazione 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 915G-M5 usa un tipo LGA775 de Pentium 4 que lleva las sigtes. características::

- Acomoda los procesadores Intel P4/Celeron
- Soporta un sistema de bus (FSB) de 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 915G (NB) y Southbridge ICH6 (SB) están basados en una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

915G (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.
- Tiene 12-deep In-Order Queue (Fila En Orden de Profunidad 12) para soportar hasta 12 pedidos de dirección sobresalientes en el bus anfitrión.
- Soporta las tecnologías 256-Mb, 512-Mb y 1-Gb DDR/DDR2 para los dispositivos x8 y x16.
- Provee un dispositivo de gráficas integrado que entrega las capacidades de vídeo y 3D y 2D a costo competitivo.

El chipset 915G solamente puede soportar las technologías 256-Mb, 512-Mb y 1-Gb DDR para los dispositivos x8 y x16, NO soporta la tecnología 128-Mb DDR. Es decir, NO soporta el Módulo de Memoria de Doble Lado 256 MB & Módulo de Memoria de Lado Singular 128 MB.

ICH6 (SB)

- Controlador DMA reforzado, controlador de interrupción y funciones de cornometraje.
- Conforme con la spec. PCI 2.3.
- Conforme con la spec. Serial ATA 1.0a
- Controlador Anfitrión USB 2.0 Integrado soporta hasta ocho puertos USB 2.0.
- Controlador LAN integrado .
- Controlador IDE integrado soporta Ultra ATA100/66/33.

Memoria

- Acomoda cuatro DIMMS sin buffer
- Hasta 1 GB por DIMM con el tamaño de memoria máximo hasta 4 GB

Gráficas

- Soporta frecuencia central de 333 MHz
- Soporta 3D Setup, Motor de Rendimiento (Render Engine), y Mejoramientos de Gráficas 3D
- Soporta Motor de Textura de Alta Calidad (High Quality Texture Engine)
- Vídeo DVD/PC-VCR

LAN en placa (Optativo)

Esta placa principal puede soportar uno de los sigtes. chipset LAN:

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

Audio

Esta placa principal puede soportar uno de los sigtes. chipset Audio.

• Conforme con el CODEC AC'97 v2.3 • 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 • Soporta la función de salida S/PDIF
• Conforme con la especificación Azalia, que soporta 8 DACs de canal con SNR > 95dB • Compatibilidades: 192/96/48/44.1 KHz con 24/20/16 bits • 8 soportes de puerto I/O Smart Jack • Detección de clavija extensiva vía RNM (resistors network method/ método de red de resisitores) que se puede usar para monitorear el estado de conexión de cada clavija • Soporte de S/PDIF OUT & IN Digital

Opciones de expansión

La placa base viene con las opciones siguientes de expansión:

- Una ranura PIC Expressx16 (optativo)
- Tres ranuras conforme con 32-bit PCI v2.3
- Una cabezal de perfil bajo 40-pin IDE dos soporta cuatro canales IDE
- Una interfaz para unidad de disquete
- Cuatro conectores SATA de 7-pin que soporta cuatro dispositivos SATA

La placa principal 915G-M5 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 y un puerto paralelo
- Cuatro puertos USB
- Un puerto VGA, un puerto 1394 (optativo) y un puerto LAN (optativo)
- Clavijas de Audio para la entrada de micrófono, entrada de línea y salida de línea (la clavija Audio para micrófono, entrada de línea y Salida de Audio de Alta Definición de 8-canales si soporta el CODEC Azalia Audio.)

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

O 915G-M5 usa um tipo LGA775 de Pentium 4 que possui as seguintes características:

- Acomoda processadores Intel P4/Celeron
- Suporta um bus sistema (FSB) de 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 915G Northbridge (NB) e ICH6 Southbridge (SB) são baseados em uma arquitetura inovativa e escalável com performance e confiabilidade comprovada.

915G (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.
- Possui uma Fila de Espera Em-Ordem com capacidade para 12 para suportar até doze pedidos de endereçamento estruturados e pendentes no host bus.
- Suporta 256-Mb, 512-Mb e tecnologias 1-Gb DDR/DDR2 para aparelhos x8 e x16
- Fornece um dispositivo de gráficos integrado permitindo 3D com competitividade de custos, 2D e com capacidade para vídeo.

Chipset 915G só consegue suportar tecnologias 256-Mb, 512-Mb e 1-Gb DDR para aparelhos x8 e x16 , NÃO suporta tecnologia 128-Mb DDR. Ou seja, NÃO suporta Módulo de Memória Bidireccional 256 MB & Módulo de Memória Unidireccional 128 MB.

ICH6 (SB)

- Controlador DMA Melhorado, controlador de interruptor, e funções de temporizador
- Em conformidade com a especificação PCI 2.3
- Compatível com Série ATA 1.0a
- Controlador Host USB 2.0 integrado suportando até oito portas USB 2.0
- Controlador LAN integrado
- Controlador IDE integrado suporta Ultra ATA100/66/33

Memória

- Acomoda quatro DIMMs sem buffers
- Até 1 GB por DIMM com tamanho de memória máxima de até 4 GB

Gráficos

- Suporta frequência central de 333 MHz
- Suporta Instalação 3D, Dispositivo de Distribuição, e Melhoramentos de Gráficos 3D
- Suporta Dispositivo de Textura de Alta Qualidade
- Vídeo DVD/PC-VCR

LAN integrada (Opcional)

Esta motherboard poderá suportar qualquer um dos seguintes conjuntos de chips LAN:

• Suporta o funcionamento de negociação automática de 100/10 Mb/s N-direcções • Suporta capacidade de duplex pela metade/ou na totalidade • Suporta a função Wake-On-LAN(WOL) e despertar remoto
• Transreceptor integrado 10/100/1000 • Suporta PCI v2.3, 32-bit, 33/66-MHz • Suporta inteiramente com IEEE 802.3, IEEE 802.3u e IEEE 802.3ab

Áudio

Esta motherboard poderá suportar qualquer dos seguintes conjuntos de chips Áudio.

• Cumpre com o AC'97 v2.3 CODEC • 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 • Suporta uma função de saída S/PDIF
• Cumpre com a especificação Azalia , suportando 8 canais DAC com SNR > 95dB • Compatibilidades: 192/96/48/44.1 KHz com 24/20/16 bits • Suporte de porta 8 Smart Jack I/O • Detecção de ficha extensiva via RNM (método em rede de resistências) que pode ser usado para monitorizar o estado de ligação de cada ficha • S/PDIF OUT digital & suporte IN

Opções de expansão

A motherboard possui as seguintes opções de expansão:

- Uma ranhura PIC Expressx16 (opcional)
- Três 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 que suportam quatro aparelhos SATA

A motherboard 915G-M5 suporta um domínio bus UltraDMA bus com taxas de Transferência de 100/66 MB/s.

E/S integradas

A motherboard conta com um conjunto completo de portas e conectores E/S:

- Duas portas PS/2 para o rato e o teclado
- Uma porta de série e uma porta paralela
- Quatro portas USB
- Uma porta VGA, uma porta 1394 (opcional) e uma porta LAN (opcional)
- Tomadas áudio para entrada de microfone, entrada de linha e saída de linha (Tomada áudio para entrada de microfone, entrada de linha e saída de Áudio de Definição Elevada 8-ch se suportar CODEC Áudio Azalia.)

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

915G-M5はLGA775タイプのPentium 4に対応したもので、その特徴は次の通りです：

- Intel P4 /Celeron プロセッサ取付け可能。
- 800/533MHzのシステムバス(FSB)をサポート。
- “ハイパースレッド(Hyper-Threading)"技術対応のCPUを取り付け可能。

ハイパースレッド 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

915G Northbridge (NB)とICH6 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たものです。

915G(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。
- 12組ジャブ扱い可能の中順(In-Order)キュー採用、これでホストバスでの12つの未完成パイプライン・アドレス要求を対応。
- 8倍速または16倍速のデバイスの256-Mbや512-Mb、1-Gb のDDR/DDR2 技術に対応。
- グラフィックデバイスを統合することで、コストパフォーマンスが高い3D、2D、およびビデオ機能の提供を可能に。

915Gチップセットは 8倍速または16倍速のデバイスの256-Mbや512-Mb、1-Gb のDDR技術のみに対応で、128-Mb DDR 技術に対応しません。具体的に、256 MBの二面メモリモジュールや128 MB の片面メモリモジュールが対応されませんので、ご注意。

ICH6 (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 2.3仕様に準拠。
- シリアルATA 1.0a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。
- 統合型IDEコントローラで、Ultra ATA100/66/33サポート可能。

メモリ

- 4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4GBまでをサポート。

グラフィック

- 333MHzのコア周波数をサポート
- 3Dセットアップ、レンダーエンジン、および3Dグラフィック強化機能に対応
- 高品質なテクスチャエンジンをサポート
- ビデオDVD/PC-VCR

オンボードLAN (オプション)

当マザーボードは次のLANチップセットのいずれかを搭載しております：

• 100/10 Mb/秒のNウェイ自動認識機能動作をサポート。 • 半/全二重動作可能。 • Wake-On-LAN (WOL) 機能とリモートwake-up機能。
• 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、IEEE802.3u およびIEEE802.3abに完全対応。

オーディオ

当マザーボードは次のオーディオチップセットのいずれかをサポートします：

- AC'97 v2.3仕様に適合。
- 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。
- S/PDIF出入力をサポート。

- Azalia規格に準拠で、SNR > 95dBでの8チャネルのオーディオ出力可能。
- 互換性：24/20/16 ビットでの192/96/48/44.1 KHz 。
- 8つのSmart Jack I/O ポートを対応。
- RNM (resistors network method)での外部ジャック検知機能、これで各ジャックの接続状態を監視可能。
- デジタルS/PDIF出入力を対応。

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。

- PIC Express x16スロット (オプション) が1つ。
- 32ビットPCI v2.3 互換性スロットが3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つで、4つのSATA装置の接続を可能に。

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。

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 と パラレルポート が1つ。
- USBポート が4つ。
- VGAポートが1つ、1394 ポートが1つ(オプション)、LAN ポート(オプション)が 1つ
- マイクロホン入力、ライン入力、およびライン出力用のオーディオジャック(Azalia Audio CODECサポートのモデルの場合、マイクロホン入力、ライン入力、および8チャンネル高解析度オーディオ出力用のオーディオジャック)。

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

915G-M5 는 다음과 같은 특징을 지닌 팬티엄 4 의 LGA775 타입을 사용한다:

- 인텔 팬티엄 4 /Celeron 프로세서 사용
- 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.

칩셋

915G Northbridge (NB) 와 ICH6 Southbridge (SB) 칩셋은혁 신적이고 범위성을 지닌 아키텍쳐를 바탕으로 인정된 신뢰성과 성능을 지닌다.

915G(NB)

- 32 비트 호스트 버스 어드레싱 지원으로, CPU 가 총 4 GB 메모리 어드레스 공간에 액세스할 수 있다.
- 12-deep In-Order Queue 가 호스트 버스에서 최대 12 개의 파이프라인 어드레스 요청을 지원한다.
- x8 및 x16 장치를 위해 256-Mb, 512-Mb, 1-Gb DDR/DDR2 기술 지원.
- 가격 경쟁적인 3D, 2D, 비디오 기능을 제공하는 통합 그래픽 장치 제공.

915G 칩셋은 x8 및 x16 장치를 위해 256-Mb, 512-Mb, 1-Gb DDR 기술만을 지원하고, 128-Mb DDR 기술은 지원하지 않는다. 즉, 256 MB 양면 메모리 모듈 및 128 MB 단면 메모리 모듈을 지원하지 않는다.

ICH6 (SB)

- 보강 DMA 컨트롤러, 인터럽트 컨트롤러, 및 타이머 기능
- PCI 2.3 사양 호환.
- 시리얼 ATA 1.0a 사양 호환
- 최대 8 개의 USB 2.0 포트를 지원하는 통합 USB 2.0 호스트 컨트롤러
- 통합 LAN 컨트롤러
- 통합 IDE 컨트롤러로 Ultra ATA100/66/33 지원

메모리

- 4 개의 unbuffered DIMM 사용
- DIMM 당 최대 1 GB, 최대 메모리 4 GB

그래픽

- 코어 주파수 333 MHz 지원
- 3D 셋업, 랜더 엔진, 3D 그래픽 강화 지원
- 고품질 텍스처 엔진 지원
- 비디오 DVD/PC-VCR

보드 내장 LAN (선택 사항)

본 마더보드는 다음과 같은 LAN 칩셋을 지원합니다:

• 100/10 Mb/s 자동 조정 오퍼레이션 지원 • Half/Full 듀플렉스 지원 • Wake-On-LAN (WOL) 기능 및 원격 wake-up 지원
• 통합 10/100/1000 트랜시버 • PCI v2.3, 32-bit, 33/66-MHz 지원 • IEEE 802.3, IEEE802.3u 및 IEEE802.3ab 지원

오디오

본 마더보드는 다음과 같은 오디오 칩셋을 지원합니다.

- AC' 97 v2.3 코덱 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
- S/PDIF 출력 기능 지원

- Azalia 사양 부합, SNR > 95dB 의 8 채널 DAC 지원
- 호환성: 24/20/16 비트의 192/96/48/44.1 KHz
- 8 스마트 잭 I/O 포트 지원
- 각 잭의 상태를 모니터하는데 사용될 수 있는 RNM (resistors network method)을 통한 포괄적 잭 감지
- 디지털 S/PDIF OUT & IN 지원

확장 옵션

이 메인보드는 다음과 같은 확장 옵션이 있다

- PIC Express x16 슬롯 1 개 (선택 사항)
- 32 비트 PCI v2.3 호환 슬롯 3 개
- 2 개의 IDE 채널을 지원하는 40 핀 IDE 로우 프로파일 해더 1 개
- 플로피 디스크 드라이브 인터페이스 1 개
- 4 개의 SATA 장치를 지원하는 7 핀 SATA 커넥터 4 개

915G-M5 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 및 패러럴 포트 1 개
- USB 포트 4 개
- VGA 포트 1 개, 1394 포트 (선택사항) 1 개 및 LAN 포트 (선택사항) 1 개 지원
- 마이크 입력 용 오디오 잭, 라인 입력 및 라인 출력 (마이크 입력 용 오디오 잭, 라인 입력, Azalia Audio CODEC을 지원할 경우 8 채널 고 재생음 오디오 출력)

BIOS 펌웨어

본 메인보드는 AWARD BIOS 를 사용하여 사용자는 다음과 같은 시스템 기능을 구성할 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 있습니다

功能

處理器

915G-M5 採用LGA775型的Pentium 4，具有如下特徵：

- 支援Intel P4/Celeron 處理器；
- 支援高達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

915G北橋(NB)及ICH6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，具備優的可靠性及性能。

915G (NB)

- 支援32位元主事匯流排定址，藉此CPU 存取整個4 GB的記憶位址空間；
- 具有一個可容納12組資料之跳序(In-order)佇列，可支援最多12個在主控匯流排上發生的未完成管線位址要求；
- 支援8倍速及16倍速之256-Mb、512-Mb、及1-Gb DDR/DDR2技術；
- 配備有一個整合型的繪圖裝置，提供物超所值的3D、2D、及視訊繪圖功能。

915G 晶片組僅能支援8倍速及16倍速之256-Mb、512-Mb、及1-Gb DDR技術，惟，並不支援 128-Mb DDR 技術。具體而言，不支援256 MB雙面記憶體模組及128 MB單面記憶體模組。.

ICH6 (SB)

- 增強型DMA控制器、中斷控制器、及計時功能；
- 符合PCI 2.3規格；
- 符合序列ATA 1.0a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；
- 整合式IDE控制器，支援Ultra ATA100/66/33。

記憶體

- 可安裝4個非緩衝式DIMM；
- 各DIMM可安裝1GB記憶體，共可支援高達4GB的記憶體容量。

繪圖卡

- 支援333MHz的核心速率
- 支援3D設圖(Setup)、算圖(Render)引擎、及3D繪圖強化功能
- 支援品質紋理(Texture)引擎
- 視訊DVD/PC-VCR

機載區域網路 (選購)

本主機板搭載有如下其中一種LAN晶片組：

• 支援 100/10 Mb/秒N向自動辨識連線功能 • 支援半及全雙工 • 支援Wake-On-LAN (WOL)功能及遠端wake-up功能
• 整合有10/100/1000 收發器； • 支援PCI v2.3, 32位元, 33/66-MHz； • 完全支援IEEE 802.3、 IEEE802.3u 及IEEE802.3ab。

音效

本主機板支援以下其中一種音訊晶片組：

• 相容於AC'97 2.3版CODEC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； • 支援S/PDIF輸出功能。
• 符合Azalia規格，支援8聲道DAC(SNR > 95dB)； • 相容性：24/20/16位元下之192/96/48/44.1 KHz； • 支援8個Smart Jack I/O埠； • 利用RNM(resistors network method)之自動插頭檢測；RNM可檢測各插頭的插入狀態； • 支援數位S/PDIF輸出入。

擴充選項

本主機板包括下列擴充選項：

- 1個 PIC Expressx16 槽 (選購)；
- 3個32位元PCIv2.3插槽；
- 1個40針IDE低通接頭(支援2個IDE通路)；
- 1 個軟碟機介面4個；
- 4組 7針型SATA連接器，可連接4個 SATA設備。

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

整合輸出入埠

主機板具有一組齊全的輸出入埠及連接器:

- 2 個 PS/2 埠，供滑鼠與鍵盤使用；
- 1 個串列埠及1 個平行埠
- 4 個USB埠；
- 1個VGA埠，1個1394埠(選購)、及1個LAN埠(選購)；
- 麥克風用、線級輸入、線級輸出的音訊插孔(如為支援Azalia 音訊編解碼時，則為麥克風用、線級輸入、及8聲道高解析音訊輸出的音訊插孔。)。

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

915G-M5 使用 LGA775 型 Pentium 4 CPU，具备以下特点：

- 支持 Intel P4/Celeron 处理器
- 支持 800/533 MHz 系统总线 (FSB)
- 支持“多线程(Hyper-Threading)”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

915G 北桥 (NB) 和 ICH6 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。

915G (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。
- 带 12-deep In-Order Queue，主机总线上最多支持 12 个 Piplined 地址请求。
- 支持用于 x8 和 x16 设备的 256-Mb、512-Mb 和 1-Gb DDR/DDR2 技术
- 提供带有 3D、2D 和视频功能的集成图形设备，更具价格竞争力

915G 芯片组仅支持用于 x8 和 x16 设备的 256-Mb、512-Mb 和 1-Gb DDR 技术，不支持 128-Mb DDR 技术。也就是说该芯片组不支持 256 MB 双面内存模块和 128 MB 单面内存模块。

ICH6 (SB)

- 增强 DMA 控制器、中断控制器和定时器功能
- 符合 PCI 2.3 规格
- 符合串行 ATA 1.0a 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
- 集成 IDE 控制器，支持 Ultra ATA100/66/33

内存

- 支持 4 个非缓冲 DIMM
- 每个插槽支持 1 GB，总共最大可支持 4 GB

图形

- 支持 333 MHz 核心频率
- 支持 3D 设置，着色引擎和 3D 图形增强
- 支持高质量纹理引擎
- 视频 DVD/PC-VCR

Onboard LAN (可选)

此主板支持以下任何一种 LAN 芯片组：

• 支持 100/10 Mb/s N 路自协商工作 • 支持半双工和全双工工作 • 支持 LAN 唤醒 (WOL) 功能和远程唤醒功能
• 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和IEEE 802.3ab

音频

此主板支持以下任何一种音频芯片组：

- 符合AC'97 v2.3 编解码器规格
- 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
- 支持 S/PDIF 输出入功能

- 符合 Azalia 规格，支持 SNR > 95dB 的 8 通道 DAC
- 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
- 通过 RNM（电阻网络方法）的全面插孔检测，用于监视每个插孔的插入状态
- 支持数字量 S/PDIF OUT & IN

扩展选项

此主板提供如下扩展选项：

- 1 个 PIC Express x16 插槽（可选）
- 3 个 32 位 PCI v2.3 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 针 SATA 接口，支持 4 个 SATA 设备

主板915G-M5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 个串口和 1 个并口
- 4 个 USB 端口
- 1 个 VGA 端口，1 个 1394 端口（可选）和 1 个 LAN 端口（可选）
- 麦克风、线入和线出声音插孔（如果支持 Azalia 音频编解码器，则提供麦克风、线入和 8 声道高分辨率音频输出插孔）

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 和记忆的定时

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

Плата 915G-M5 построена на базе процессора Pentium 4 LGA775 и обладает следующими характеристиками:

- Размещает процессоры Intel P4/Celeron
- Поддерживает системные шины (FSB) с частотой 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 915G «Северный мост» (Northbridge, NB) и ICH6 «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

915G (NB)

- Поддерживает 32-битную адресацию хоста, обеспечивая для CPU адресацию памяти объемом 4ГБ.
- Поддерживает технологию 12-deep In-Order Queue, обеспечивающую обслуживание до двенадцати заданий, ожидающих на шине хоста.
- Поддерживает технологии 256-Мб, 512-Мб и 1-Гб DDR/ DDR2 для устройств x8 и x16.
- Интегрированное графическое устройство обеспечивает высококачественную 3D и 2D видеографику

Чипсет 915G поддерживает только технологии 256-Мб, 512-Мб and 1-Гб DDR для устройств x8 / x16 и НЕ ПОДДЕРЖИВАЕТ технологии 128-Мб DDR. Таким образом, поддержка модулей памяти 256 МБ Double Side и 128 МБ Single Side ОТСУТСТВУЕТ.

ICH6 (SB)

- Расширенные функции контроллера DMA, контроллера прерываний, внутреннего таймера
- Совместимость с PCI 2.3
- Совместимость с Serial ATA 1.0a
- Встроенный контроллер хоста USB 2.0 с поддержкой до восьми портов USB 2.0
- Встроенный контроллер LAN
- Встроенный контроллер IDE с поддержкой Ultra ATA100/66/33

Память

- Обслуживает 4 модуля небуферизованной памяти DIMM
- Обслуживает до 1 ГБ на модуль DIMM (максимально до 4 ГБ памяти)

Графика

- Поддерживает основную частоту 333 МГц
- Поддерживает 3D настройку, рендеринг и расширение трехмерной графики
- Поддерживает технологию высококачесвтенных текстур High Quality Texture Engine
- Видео DVD/PC-VCR

Встроенный сетевой адаптер LAN (опционально)

Встроенный сетевой адаптер LAN обладает следующими характеристиками:

• Поддерживает автоматическое определение скорости и режима соединения 100/10Mb/s • Поддерживает режимы Half/Full duplex • Поддерживает функции Wake-On-LAN и remote wake-up
• Интегрированный трансивер 10/100/1000 • Поддержка PCI v2.3, 32-бит, 33/66-МГц • Поддерживает технологии IEEE802.3, IEEE802.3u и IEEE802.3ab

Аудио

Данная плата может поддерживать любой из нижеследующих чипсетов аудио.

• Совместимо с AC'97 v2.3 CODEC • Поддерживает 6-канальный аудио CODEC для мультимедиальных компьютерных систем • Обеспечивает три аналоговых стереовхода с 5-битной регуляцией громкости: Line-in, CD, AUX • Поддерживает функцию входа/выхода S/PDIF
• Совместимость с технологией Azalia, поддержка 8 каналов DAC при SNR >95dB • Совместимость с 192/96/48/44.1 КГц для 24/20/16 бит • Поддержка 8 портов входа/выхода типа «Smart Jack» • Точное детектирование занятости разъемов методом RNM (резисторной сети) • Поддержка цифровой технологии S/PDIF OUT & IN

Возможности расширения

Существуют следующие опции расширения данной материнской платы:

- Один слот PCI Express x16 (опционально)
- Три 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 коннектора SATA с поддержкой четырех устройств SATA

Плата 915G-M5 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 и один параллельный порт
- Четыре порта USB
- Один порт VGA, один порт 1394 (опционально) и один порт LAN (опционально)

- Гнезда для подключения микрофона, гнезда аудио-входа и выхода (Гнезда для подключения микрофона, гнезда аудио-входа и 8-канального выхода High Definition при поддержке технологии Azalia Audio CODEC.)

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 915G-M5 zaopatrzona jest w procesor Pentium 4 typu LGA775 i charakteryzuje się następującymi cechami:

- Obsługuje procesory Intel P4/Celeron
- Obsługuje szynę systemowa (FSB) 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) 915G i mostek południowy (SB) ICH6 chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalnoœci.

915G (NB)

- Obsługuje 32-bitowe adresowanie hosta pozwalając procesorowi zaadresować 4 GB pamięci
- Posiada technologię 12-deep In-Order Queue i przetwarza do dwunastu żądań oczekujących na szynie hosta.
- Obsługuje pamięci 256-Mb, 512-Mb i 1-Gb w technologii DDR/DDR2 w urządzeniach x8 i x16
- Posiada zintergowaną grafikę zapewniającą szerokie możliwości 3D, 2D oraz video

Chipset 915G obsługuje tylko pamięci 256-Mb, 512-Mb i 1-Gb w technologii DDR dla urządzeń x8 i x16 I NIE OBSŁUGUJE pamięci 128-Mb w technologii DDR. To oznacza, że pamięci 256 MB Double Side i 128 MB Single Side NIE SĄ OSŁUGIWANE.

ICH6 (SB)

- Rozszerzony kontroler DMA, kontroler przerywań i funkcje zegara
- Zgodny z PCI w wersji 2.3
- Zgodny ze standardem Serial ATA 1.0a
- Wbudowany kontroler hosta USB 2.0 obsługuje do ośmiu portów USB 2.0
- Wbudowany kontroler LAN
- Wbudowany kontroler IDE obsługujący Ultra ATA100/66/33

Pamięć

- Zaopatrzony w cztery gniazda niebuforowanej pamięci typu DIMM
- Obsługuje pamięć DIMM do pojemności 1 GB każda; maksymalna możliwa pojemność pamięci do 4 GB

Grafika

- Obsługuje podstawową częstotliwość 333 MHz
- Obsługuje konfigurację, rendering oraz rozszerzenia grafiki 3D.
- Obsługuje technologię wysokiej jakości tekstur
- Obsługuje video DVD/PC-VCR

Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

• Obsługuje N-drożne automatycznie ustalane operacje z szybkościami 100/10 Mb/s • Zdolność Half/Full duplex • Obsługuje funkcję Wake-On-LAN i zdalnie sterowane wake-up (uruchamianie komputera)
• Zintegrowany terminal nadawczo-odbiórczy 10/100/1000 • Obsługuje 32 bitowe PCI w wersji 2.3 o częstotliwościach 33/66-MHz • Obsługuje wpełni IEEE802.3, IEEE802.3u oraz IEEE802.3ab

Audio

Ta płyta główna obsługuje wszystkie z niżej wymienionych chipsetów audio.

• Zgodne z audio CODEC 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 • Obsługuje funkcje wejścia i wyjścia S/PDIF
• Zgodne z technologią Azalia, obsługuje 8-kanałowy DAC z SNR >95dB • Zgodność: 192/96/48/44.1 KHz z 24/20/16 bitami • Obsługuje 8 gniazd We/Wy typu "Smart Jack" • Szczegółowa detekcja zajętości gniazd typu Jack za pomocą RNM (metodą sieci rezystorów) • Obsługuje w technologii cyfrowej S/PDIF wejście i wyjście

Możliwości rozbudowy

Płyta główna wyposażona jest w następujące gniazda:

- Jedno gniazdo PIC Express x16 (opcjonalnie)
- Trzy 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 obsługujące cztery urządzenia SATA

Płyta główna 915G-M5 obsługuje szynę UltraDMA z szybkością transferu 100/66 MB/s.

Zintegrowane We/Wy

Płyta główna wyposażona jest w pełny zestaw gniazd i złączy We/Wy:

- Dwa gniazda PS/2 dla myszy i klawiatury
- Jedno gniazdo szeregowe i jedno gniazdo równoległe
- Cztery gniazda USB
- Jedno gniazdo VGA, jedno gniazdo typu 1394 (opcjonalnie), oraz jedno gniazdo LAN (opcjonalnie)
- Gniazdo mikrofonowe, wejście i wyjście audio (Gniazdo mikrofonowe, wejście i 8 kanałowe wyjście audio High Definition obsługujące Azalia Audio CODEC.)

Firmowy BIOS

Płyta główna 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

Základní deska 915G-M5 je urèena pro procesory Pentium 4 LGA775 a mùže nabídnout následující vlastnosti:

- Pro připojení procesorů Intel P4/Celeron
- Podporuje taktování systémové sběrnice (FSB) na frekvenci 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) 915G a southbridge (SB) ICH6 jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

915G (NB)

- Podporuje 32bitové adresování, umožòující CPU pøistupovat k celému adresovému prostoru pamìti 4 GB.
- Má 12stupòovou frontu pro podporu až 12 požadavkù na adresování v pipeline na hostitelské sbìrnici.
- Podpora 256-Mb, 512-Mb a 1-Gb DDR/DDR2 technologií pro zaøízení x8 a x16
- Nabízí integrovaný grafický čip s nákladově efektivními schopnostmi přehrávání 3D, 2D grafiky a video.

Čipová sada 915G je schopná podporovat pouze technologie 256-Mb, 512-Mb a 1 Gb DDR pro zařízení x8 a x16, NIKOLIV technologie 128-Mb DDR. To znamená, že NEJSOU podporovány paměťové moduly 256 MB DIMM & 128 MB SIMM.

ICH6 (SB)

- Vylepšený řadič DMA, řadič přerušení a funkcí časovače
- Splňuje požadavky standardu PCI 2.3
- Splňuje požadavky standardu Serial ATA 1.0a
- Integrované hostitelské řadiče USB 2.0 podporující až osm portů
- Integrovaný řadič LAN
- Integrovaný řadič IDE podporující Ultra ATA100/66/33

Paměť

- Instalovat je možné až ètyøi DIMM moduly bez vyrovnávací pamìti
- Až 1 GB pamìti na jeden modul DIMM s maximální velikostí pamìti do 4 GB

Grafika

- Podporuje frekvenci jádra 333 MHz
- Podporuje 3D nastavení, renderovací jádro a 3D grafické vylepšení
- Podporuje jádro tvorby vysoce kvalitních textur
- Video DVD/PC-VCR

Vestavění síťové rozhraní LAN (volitelně)

Vestavěné síťové rozhraní LAN nabízí následující možnosti:

- Podpora 100/10 Mb/s N–cestného automatického přepínání provozu
- Možnost polovičního a plného duplexu
- Podpora funkce Wake–On–LAN a aktivace na dálku

- Integrovaný transceiver 10/100/1000
- Podpora rozhraní PCI v2.3, 32bitové, 33/66 MHz
- Podporuje plně IEEE802.3, IEEE802.3u a IEEE802.3ab

Zvuk

Tato základní deska může podporovat libovolnou zvukovou čipovou sadu.

- Splòuje požadavky standardu AC'97 v2.3
- Podporuje 6kanálový zvukový kodek navržený pro PC multimediální systémy
- Nabízí tøi analogové linkové stereo vstupy s 5bitovým øízením hlasitosti: Line_IN, CD, AUX.
- Podporuje vstupní a výstupní funkce S/PDIF

- Zvuková sada splòuje specifikace standardu Azalia, který podporuje 8 kanálový pøevodník DAC s odstupem signál/šum > 95 dB
- Kompatibilita: 192/96/48/44,1 kHz s 24/20/16bitovým vzorkováním
- Podpora 8 I/O portù Smart Jack
- Rozsáhlá detekce konektorù prostøednictvím RNM (metoda odporové sítì), kterou lze využít pro monitorování stav pøipojených konektorù v každé zdíøce
- Podpora digitálního vstupního/výstupního rozhraní S/PDIF

Možnosti rozšíření

Základní deska je dodávána s následujícími možnostmi rozšíření

- Jeden slot PCI Express x16 (volitelně)
- Tři 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 podporující až čtyři zařízení SATA

Základní deska 915G-M5 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 a jeden paralelní port
- Čtyři porty USB
- Jeden port VGA, jeden port 1394 (volitelně) a jeden port LAN (volitelně)
- Zvukové konektory pro připojení mikrofonu, linkového vstupu a linkového výstupu (zvukové konektory pro připojení mikrofonu, linkového vstupu a 8kanálového výstupu podporují zvukový kodek Azalia.)

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

915G-M5 utilizează Pentium 4 de tipul LGA775, având următoarele caracteristici:

- Funcționează cu procesoare Intel P4/ Celeron
- Funcționează cu bus sistem (FSB) de 800/533 MHz
- Este compatibilă cu unități centrale dotate cu tehnologia „Hyper-Threading"

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

Setul de chipuri

Seturile de chipuri 915G Northbridge (NB) şi ICH6 Southbridge (SB) se bazează pe o arhitectură inovatoare şi scalabilă, care s-a impus deja prin fiabilitate şi performanță.

915G (NB)

- Sprijină adresarea host bus (bus gazdă) de 32 biți, permițând unității centrale să acceseze întreaga cantitate de memorie de 4 GB.
- Dispune de o coadă de aşteptare cu adâncimea 12 pentru a sprijini maxim douăsprezece cereri de adresare paralele pe busul gazdei.
- Este compatibil cu tehnologiile de 256-Mb, 512-Mb şi 1-Gb DDR/DDR2, pentru unități de viteza 8x sau 16x
- Include o unitate grafică prin care asigură posibilități economicoase 3D, 2D şi video.

Setul de chipuri 915G funcționează doar cu tehnologiile DDR de 256-Mb, 512-Mb şi 1-Gb pentru unități de viteza 8x sau 16x. NU suportă tehnologia DDR de 128-Mb. Adică, NU suportă modulele de memorie cu față dublă de 256 MB şi cele cu față simplă de 128 MB.

ICH6 (SB)

- Controler DMA îmbunătățit, controler de întreruperi şi funcții de temporizare
- Compatibil cu specificația PCI 2.3
- Compatibil cu specificație Serial ATA 1.0a
- Controler gazdă USB 2.0 integrat, care suportă cel mult opt porturi USB 2.0
- Controler LAN integrat
- Controler IDE integrat, suportând Ultra ATA100/66/33

Memoria

- Poate funcționa cu patru module DIMM fără zonă tampon
- Poate funcționa cu module DIMM de cel mult 1 GB, iar cantitatea maximă de memorie este de 4 GB

Grafică

- Suportă o frecvență centrală de 333 MHz
- Suportă dispunere 3D, motor de randare şi dezvoltări grafice 3D
- Suportă motor de textutare de înaltă calitate
- Video DVD/PV-VCR

Onboard LAN (opţional)

Onboard LAN are următoarele caracteristici:

• Suportă operaţii de autonegociere N-way de 100/10 Mb/s • Posibilitate de semi-duplex sau duplex total • Suportă funcţia Wake-On-LAN şi trezirea de la distanţă
• Unitate de emisie/recepţie 10/100/1000 integrat • Suportă PCI, versiunea 2.3, de 32 biţi, la 33/66 MHz • Pe deplin compatibil cu standardele IEEE802.3, IEEE802.3u şi IEEE802.3ab

Audio

Această placă de bază suportă toate seturile de chipuri de mai jos.

• Compatibil cu CODEC-ul AC'97, versiunea 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 • Suportă funcţia S/PDIF de ieşire şi intrare
• Compatibil cu specificaţia Azalia, suportând DAC-uri cu 8 canale, a căror SNR (raport sunet-zgomot) este sub 95 dB • Compatibil cu: 192/96/48/44,1 kHz, la 24/20/16 biţi • Suportă 8 porturi I/O Smart Jack • Detectare extinsă mufe prin RNM (metoda reţelei de rezistenţe), care poate fi utilizată pentru monitorizarea stării conexiunii fiecărei mufe • Suportă S/PDIF OUT şi IN digital

Opţiuni de extindere

Placa de bază este dotată următoarele posibilităţi de extindere:

- Un slot PIC Express x16 (opţional)
- Trei 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 cu 7 ace, care suportă patru unităţi SATA

Placa de bază 915G-M5 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 şi un port paralel
- Patru porturi USB
- Un port VGA, un port 1394 (opţional) şi un port LAN (opţional)
- Conectoare pentru microfon, intrare şi ieşire audio (Conectoare pentru microfon, intrare şi ieşire audio cu 8 canale de înaltă fidelitate , dacă suportă codecul Azalia Audio CODEC.)

Firmware BIOS

Placa de bază utilizează AWARD BIOS, care permite utilizatorului să configureze mai mulți 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 frecvențe de comandă ale procesorului.

Anumite specificații hardware şi elemente de software pot fi modificate fără înştiințare prealabilă.

Спецификация

Процесор

Дънната платка 915G-M5 поддържа Pentium 4 тип LGA775 със следните спецификации:

- Поддръжка на процесори Intel P4/Celeron
- поддръжка на системна шина със скорост 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 915G (NB) и южен мост ICH6 (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

915G (NB)

- 32-bit адресация на шината, което позволява на процесора достъп към пълното адресно пространство на паметта 4GB.
- 12-deep In-Order Queue (12-стъпков конвейерен буфер) с поддръжка на до дванадесет операции за четене на данни от паметта.
- поддръжка на технологии 256-Mb, 512-Mb и 1-Gb DDR/ DDR2 за x8 и x16 устройства
- Интегрирано графично ядро с 3D, 2D и видео възможности.

Чипсетът 915G поддържа само технологиите 256-Mb, 512-Mb and 1-Gb DDR за x8 и x16 устройства, и НЕ поддържа технологията 128-Mb DDR. Това означава, че НЕ могат да се подключат модули 256 MB Double Side Memory Module и 128 MB Single Side Memory Module.

ICH6 (SB)

- подобрен DMA Контролер, контролер на прекъсванията и часовник
- поддръжка на шината PCI 2.3
- съвместимост със спецификацията Serial ATA 1.0a
- интегриран контролер USB 2.0 с поддръжка на до осем порта USB 2.0
- интегриран мрежов контролер
- интегриран контролер IDE с поддръжка на Ultra ATA100/66/33

Памет

- поддръжка на до четири небуферирани DIMM слота
- до 1 GB памет на 1 DIMM канал с максимален капацитет 4 GB

Графичен чип

- Поддръжка на основна честота 333 MHz
- Поддръжка на 3D Setup, Render Engine и 3D Graphics
- Поддръжка на висококачествено текстурно ярдо (Texture Engine)
- Video DVD/PC-VCR

Интегриран мрежов контролер (опция)

Спецификация на интегрирания мрежов контролер:

• поддръжка на 100/10 Mb/s, N-Way Auto-negotiation operation • Half/Full duplex • поддръжка на функция за “събуждане” Wake-On-LAN и дистанционен wake-up
• Интегриран 10/100/1000 контролер • поддръжка на PCI v2.3, 32-bit, 33/66-MHz • Пълна съвместимост с IEEE802.3, IEEE802.3u IEEE802.3ab

Аудио

Тази дънна платка може да поддържа някои от следните спецификации.

• Аудио Кодек съвместим със спецификацията AC’97 2.3 • Поддържа 6-канален аудио Кодек специално за мултимедийни приложения • Включва три аналогови линейни стерео входа с 5-битово управление на мощността: Line-IN, CD, AUX • Поддържа функцията S/PDIF input/output
• съвместимост със спецификацията Azalia с поддръжка на 8-канално DAC аудио с SNR >95dB • съвместимост с: 192/96/48/44.1 KHz на 24/20/16 bits • поддръжка на порт 8 Smart Jack I/O • усъвършенствано разпознаване на жаковете (jack detection) чрез RNM (resistors network method), което може да се използва за наблюдение статуса на всеки жак. • поддръжка на цифров S/PDIF Вход/Изход

Възможности за разширяване

Дънната платка има следните разширителни възможности:

- Един слот PIC Express x16 (опция)
- три слота 32-bit PCI v2.3
- един нископрофилен 40-pin IDE колектор с поддръжка на две IDE устройства
- един конектор за флопидисково устройство
- Четири конектора 7-pin SATA, които поддържат четири SATA устройства

Дънната платка 915G-M5 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 и един паралелен порт
- четири USB порта
- Един VGA порт, един 1394 порт (опция) и един LAN порт (опция)
- Аудио порт с линеен вход/линеен изход/вход за микрофон (Аудио порт с вход за микрофон, линеен вход и 8-канален High Definition Audio изход, ако дънната платка поддържа Azalia Audio CODEC.)

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

A 915G-M5 LGA775 típusú Pentium 4 számára készült, és a következő jellemzőkkel bír:

- Intel P4/Celeron processzorokkal működik
- 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 915G Northbridge (NB) és ICH6 Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

915G (NB)

- 32 bites host bus addressing-et (gazdabusz címzést) tesz lehetővé, ami által a központi egység a teljes 4 GB-os címzési tárhelyhez hozzáfér.
- 12-es mélységű sorbanállással rendelkezik, amellyel akár 12 megoldatlan csővezetékes címzési kérést képes kezelni a gazdabuszon.
- 256 Mb-os, 512 Mb-os és 1 Gb-os DDR/DDR2 technológiát támogat 8- és 16-szoros eszközök esetében
- Integrált grafikus egységgel rendelkezik, amely költséghatékony 3D, 2D és video lehetőségeket biztosít.

A 915G lapkakészlet csak a 256 Mb-os, 512 Mb-os és 1 Gb-os DDR technológiákat támogatja 8- és 16-szoros eszközök esetében, azaz a 128 Mb-os technológiával NEM kompatibilis. Azaz NEM működik 256 MB-os kétoldalú, illetve 128 MB-os egyoldalú memóriaegységekkel.

ICH6 (SB)

- Fejlett DMA vezérlő, megszakításvezérlő és időzítő funkciók
- Kompatibilis a PCI 2.3-as specifikációjával
- Kompatibilis a soros ATA 1.0a specifikációval
- Beépített USB 2.0 gazda vezérlő, legtöbb nyolc USB 2.0 portot támogat
- Beépített LAN vezérlő
- Beépített IDE vezérlő, amely az Ultra ATA100/66/33 technológiát támogatja

Memória

- Négy puffermentes DIMM egységgel működik
- Maximum 1 GB-os DIMM egységeket támogat, maximális memória 4 GB

Grafika

- 333 MHz-as magfrekvenciát támogat
- 3D beállítást, megjelenítő motort és 3D grafikus fejlesztéseket támogat
- Csúcsminőségű teturáló motort támogat
- Video DVD/PV-VCR

Alaplapon levő LAN (választható)

Az alaplapon levő LAN jellemzői:

• 100/10 Mb/s N-Way automatikus beállítással • Teljes/fél duplex lehetőség • Támogatja a Wake-On-LAN funkciót és a távoli ébresztést
• Integrált 10/100/1000 adó-vevő • Támogatja a 32 bites, 33/66 MHz-es PCI 2.3-as változatát • Teljesen kompatibilis az IEEE802.3, IEEE802.3u és IEEE802.3ab szbványoknak

Audio

Ez az alaplap a következő Audio lapkakészletek bármelyikét támogatja.

• Kompatibilis az AC'97 2.3-as CODEC változatával • A számítógép multimédiás rendszereinek szánt hat csatornás audio CODEC-et támogat • Három analóg sztereo bemenetet biztosít 5 bites hangerő vezérléssel: bemenet, CD, AUX • Támogatja az S/PDIF bemeneti és kimeneti funkciót
• Kompatibilis az Azalia specifikációval, 8 csatornás, 95 dB-nél nagyobb SNR (jel-zaj viszony) értékű DAC támogatása • Kompatibilitás: 192/96/48/44,1 KHz, 24/20/16 biten • 8 Smart Jack I/O port támogatása • Átfogó dugaszérzékelés RNM (ellenállás-hálózat módszer) segítségével, amely a dugaszok csatlakozási állapotának követésére használható • Digitális S/PDIF BE és KI támogatása

Bővítési lehetőségek

Az alaplap a következő bővítési lehetőségekkel rendelkezik:

- Egy 16-szoros PIC Express foglalat (opcionális)
- Három 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, amelyek négy SATA egységet támogatnak

A 915G-M5 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 és egy párhuzamos port
- Négy USB port
- Egy VGA port, egy 1394 port (opcionális) és egy LAN port (opcionális)
- Audio aljzatok mikrofonhoz, audio bemenethez és kimenethez (Mikrofon, bemenet és 8 csatornás nagy hűségű audio kimenet, ha támogatja az Azalia Audio CODEC-et.)

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.