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, R.O.C.
No. 22, Alley 38, Lane 91, Sec. 1, Nei Hu Road, Taipei, Taiwan 114, R.O.C.
No. 20 & No. 26, Free Trade Zone, Shatoujiao, Shenzhen City, GuangDong Province, China

has established and applies a quality system for

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

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

Proof has been furnished that the requirements according to

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

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

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

TGA-ZM-30-96-00

Essen, 04.03.2004

RWTÜV

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

ISO14001 CERTIFICATE

Certificate NO.: 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

Copyright

Version 1.2a

Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

Trademark Recognition

Microsoft, MS-DOS and Windows are registered trademarks of Microsoft Corp.

MMX, Pentium, Pentium-II, Pentium-III, Celeron are registered trademarks of Intel Corporation.

Other product names used in this manual are the properties of their respective owners and are acknowledged.

Federal Communications Commission (FCC)

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

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

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

Declaration of Conformity

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

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

Canadian Department of Communications

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

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

About the Manual

The manual consists of the following:

Chapter 1
Introducing the Motherboard
Describes features of the motherboard.
Go to ⇨ page 1

Chapter 2
Installing the Motherboard
Describes installation of motherboard components.
Go to ⇨ page 7

Chapter 3
Using BIOS
Provides information on using the BIOS Setup Utility.
Go to ⇨ page 27

Chapter 4
Using the Motherboard Software
Describes the motherboard software
Go to ⇨ page 39

TABLE OF CONTENTS

Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the 915P-A motherboard. This motherboard is a high performance, enhanced function motherboard that supports LGA775 Pentium 4 processors for high-end business or personal desktop markets.

The motherboard incorporates the 915-P Northbridge (NB) and ICH6 Southbridge (SB) chipsets. The Northbridge supports a Front Side Bus (FSB) frequency of 800/533 MHz using a scalable FSB Vcc_CPU. The momory controller supports DDR memory DIMM frequencies of 333MHz and 400 MHz or DDR2 memory DIMM frequencies of 400 MHz and 533 MHz. It supports four DDR Sockets with up to maximum memory of 2 GB. DDR Maximum memory bandwidth of 3.2 GB/s in single-channel is supported, or 8.5 GB/s in dual-channel interleaved mode assuming DDR2 533MHz. Aside from the onboard AGP Express, one 16-lane PCI Express slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 1.0a.

The ICH6 Southbridge supports two PCI slots which are PCI 2.3 compliant. In addition, two PCI Express x1 slots are supported, fully compliant to the PCI Express Base Specification, Revision 1.0a. It implements an EHCI compliant interface that provides 480Mb/s bandwidth for eight USB 2.0 ports, integrates Azalia codec supporting Azilia standard that features a 8-channels High Definition Audio output. 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 915P-A motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, LPT1, four USB ports, one optional LAN port, and audio jacks for microphone, line-in and 8-ch line out.

Feature

Processor

The 915P-A uses an LGA775 type of Pentium 4 that carries the following features:

- Accommodates Intel P4 Prescott 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 915-P Northbridge (NB) and ICH6 Southbridge (SB) chipset is based on an innovative and scalable architecture with proven reliability and performance.

915P (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 one PCI Express x16 for Graphics Interface, fully compliant to the PCI Express Base Specification revision 1.0a.
- Supports 256-Mb, 512-Mb and 1-Gb DDR technologies for x8 and x16 devices
- Supports up to four unbuffered DIMM

915P 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 Express Base Specification, Revision 1.0a
- 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
- Compliant with Azalia specification supporting 8 Channels of audio outputs
- Integrated IDE controller supports Ultra ATA100/66/33

Memory

- Supports DDR 400/333 MHz or DDR2 533/400 DDR SDRAM DIMMs
- Accommodates four unbuffered DIMMs
- Up to 1 GB per DIMM with maximum memory size up to 2 GB

Users please note that DDR & DDR2 can’t both be applied at the same time on this motherboard. Users can use either DDR or DDR2 memory modules only!

Audio

- Compliant with Azalia specification, supporting 8 channel DACs with SNR > 95dB
- Compabilities: 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 AGP Express slot
- One PCI Express x16 for Graphic Interface
- Two PCI Express x1
- Two 32-bit PCI v2.3 compliant slots
- One 40-pin IDE low profile header that support two IDE devices
- One floppy disk drive interface
- Four 7-pin SATA connector

The 915P-A motherboard supports UltraDMA bus mastering with transfer rates of 100/66 MB/s.

Onboard LAN (Optional)

The onboard LAN controller provides the following features:

- Support 10/100/1000 Mbps speed operation(10/100 Mbps optional)
- Supports PCI v2.3, 32-bit, 33/66-MHz
- Supports fully with IEEE 802.3z

Integrated I/O

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

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

BIOS Firmware

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

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

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

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

Motherboard Components

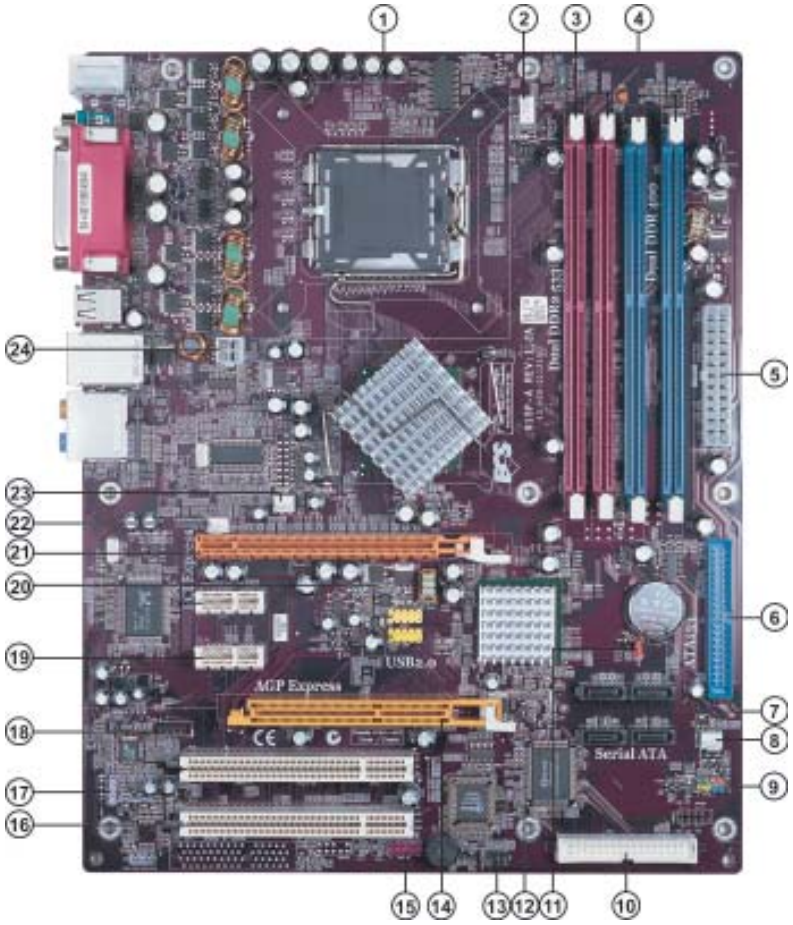


Table of Motherboard Components

LABEL	COMPONENT
1 CPU Socket	LGA775 socket for Pentium 4 CPUs
2 CPU_FAN1	CPU cooling fan connector
3 DIMM1~2	240-pin DDR2 SDRAM slots
4 DIMM3~4	184-pin DDR SDRAM slots
5 PWR1	Standard 24-pin ATX power connector
6 IDE1	Primary IDE channel
7 SATA1~4	Serial ATA connectors
8 CHS_FAN1	Chasis cooling fan connector
9 PANEL1	Panel connector for case switches and LEDs
10 FDC1	Floppy diskette drive connector
11 JP1	Clear CMOS jumper
12 JP11	BIOS protect jumper
13 IR1	Internal infrared header
14 AGP-E1	AGP Express slot
15 AUDIO2	Front panel audio header
16 PCI1~2	32-bit add-on card slots
17 SPDIF-O-1	SPDIF out header
18 CD1	CD-in connector
19 PCI-E2~3	PCI Express x1 slots
20 USB3-4	Front Panel USB headers
21 PCI-E1	PCI Express x16 graphics card slot
22 AUX_FAN1	Auxliary cooling fan connector
23 NB_FAN1	Northbridge cooling fan connector
24 PWR2	Auxiliary 4-pin power connector

*Stands for optional components

Users please note that DDR & DDR2 can't both be applied at the same time on this motherboard. Users can use either DDR or DDR2 memory modules only!

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 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, 915P-A 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 ATX form factor of 305 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.

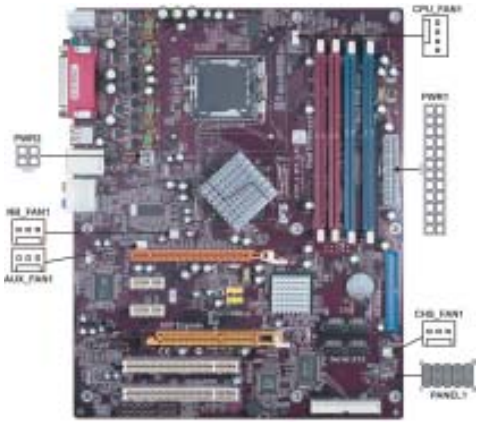
Jumper Settings

Jumper	Type	Description	Setting (default)	
JP1	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CMOS CLEAR Before clearing the CMOS, make sure to turn off the system.	
JP11	2-pin	BIOS WRITE	OPEN: WRITW UNPROTECT SHORT: WRITE PROTECT	

Connecting Case Components

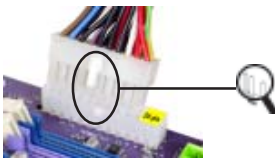
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN1**.
2 Connect the case cooling fan connector to **CHS_FAN1**.
3 Connect the Northbridge cooling fan connector to **NB_FAN1**.
3 Connect the power fan connector to **AUX_FAN1**.
4 Connect the case switches and indicator LEDs to the **PANEL1**.
6 Connect the standard power supply connector to **PWR1**.
7 Connect the auxiliary case power supply connector to **PWR2**.



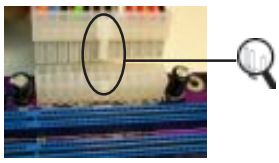
Connecting 20/24-pin power cable

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.



20-pin power cable

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



24-pin power cable

Users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.

CPUFAN1: FAN Power Connectors

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

CHS_FAN1/NB_FAN1/AUX_FAN1: FAN Power Connectors

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

PWR2: ATX 12V Power Connector

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

PWR1: 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

Front Panel Connector

The front panel connector (PANEL1) provides a standard set of switch and LED connectors commonly found on ATX or micro-ATX cases. Refer to the table below for information:

PANEL1

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 debounce 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 LGA 775 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 accomodates four memory modules. It can support two 184-pin 2.5V unbuffered DIMM, DDR 400/333 or two 240-pin 1.8V DDR2 533/400. The total memory capacity is 2GB.

Users please note that DDR & DDR2 can't both be applied at the same time on this motherboard. Users can use either DDR or DDR2 memory modules only!

DDR SDRAM memory module table

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

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 400	*200MHz*
DDR2 533	*266MHz*

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

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

Installation Procedure

Refer to the following to install the memory modules.

1 This motherboard supports unbuffered 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.

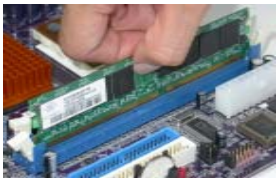


Table A: DDR QVL (Qualified Vender List)

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

Type	Size	Brand	Chip
DDR 400	256MB	A-DATA	ADD8608A8A-5B
	256MB	Hynix	HY5DU56822BT-D43
	256MB	KingMax	KDL684T4AA-50
	256MB	Kingston	9905192-012.A01
	256MB	SAMSUNG	K4H560838D-TCC4
	256MB	TwinMOS	TMD7608F8E50D
	512MB	CORSAIR	CMX512-3200C2PT
	512MB	Infineon	HYB25D256800BT-5
	512MB	Kingston	D3208DL1T-5
	512MB	KingMax	KDL388P4EA-50A
	512MB	ValueSelect	VS32MB-5 2B0402
	1GB	Corsair	CMX1024-3200PT
DDR 433	512MB	Corsair	CMX512-3500C2PT
DDR 450	256MB	A-DATA	ADD8608A8A-4.5B
DDR 550	512MB	Corsair	CMX512-4400PT

Table B: DDR2 QVL (Qualified Vender List)

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

Type	Size	Brand	Chip
DDR2 400	256M	SAMSUNG	K4T56083QF-GCCC
	512M	SAMSUNG	K4T51083QB-GCCC
DDR2 533	256M	Corsair	CM2X256A-4200
	256M	Kingston	KVR533D2N4
	256M	SAMSUNG	K4T56083QF-GCD5
	512M	G.SKILL	G76 GT
	512M	SAMSUNG	K4T51083QB-GCD5
DDR2 700	256M	ELPIDA	E2508AA-DF-E
	512M	ELPIDA	E2508AA-DF-E

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

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

About IDE Devices

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

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

IDE1: IDE Connector

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

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

About SATA Connectors

Your motherboard features four SATA connectors supporting a total of four drives. SATA , 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.

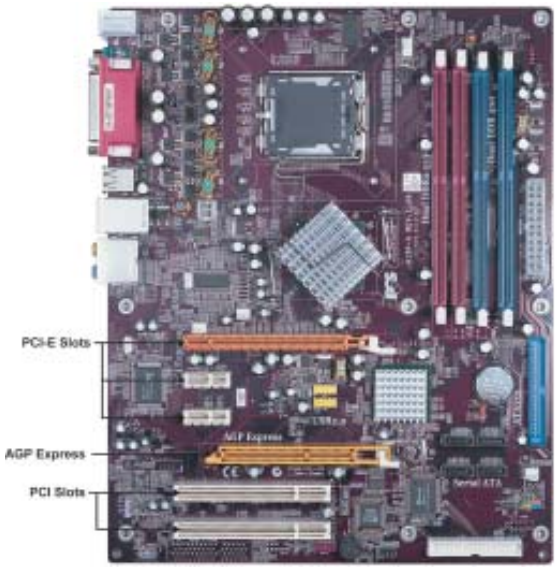
You must orient the cable connector so that the pin 1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

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.



PCI-E1 Slots 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-E2~3 Slots The two PCI Express x1 slots is fully compliant to the PCI Express Base Specification revision 1.0a as well.

AGP-E1 Slot The AGP Express slot is used to install an AGP graphics card that emulates the AGP function. To get better performance and compatibility on our special designed AGP Express slot, we recommend users use one of the AGP graphics cards that have been tested by out company. See the "Supported AGP 8X/4X VGA Cards List" or visit our website at "http://www.ecs.com.tw" for the updated supported list.

PCI 1/2 Slots This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

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

Table A: Supported AGP 8X VGA Cards List

Chip Type	Vendor	Model
ATI Radeon 9700 PRO	PowerColor	XR97-C3
ATI Radeon 9200	ECS	R9200LE-64T
GeForce 4 Ti4200	ASUS	V9280TD/8X
GeForce 4 MX440	ASUS	V9180VS/8X
GeForce 4 MX4000	WinFast	A180B
GeForce FX5600	ELSA	FX 732 256MB
GeForce FX5900 ultra	MSI	FX 5900Ultra 256MB
GeForce FX5950 ultra	ELSA	FX 938Ultra 256MB
Xabre 200	ECS	AG200E4-D32
Xabre 200	ECS	AG200T8-D64
Xabre 400	ECS	AG400T8-D64

Table B: Supported AGP 4X VGA Cards List

Chip Type	Vendor	Model
ATI Radeon 7000	ECS	R7000L–64TC
ATI Radeon 9000 PRO	Gigabyte	GV-R9000 PRO
TNT2 M64	WinFast	S325
GeForce 256	Creative	CT6940
GeForce 256 DDR	ASUS	V6800
GeForce 2 GTS	Gigabyte	GV-GF2010
GeForce 2 GTS DDR PRO	ELSA	GLADIAC
GeForce 2 MX	ASUS	AGP-V7100
GeForce 2 MX	ELSA	GLADIAC MX
GeForce 2 MX	Triplex	Mohock
GeForce 2 Ultra DDR	WinFast	GeForce 2 Ultra
GeForce 2 MX200	Triplex	TRP-MX2200
GeForce 2 MX400	ELSA	GLADIAC 511
GeForce 3 DDR	ELSA	GLADIAC 920
GeForce 3 Deluxe	ASUS	V8200
GeForce 3 Deluxe Ti500	ASUS	V8200
GeForce 4 MX420	WinFast	A170TH SDR
GeForce 4 MX440	ASUS	V8170DDR
GeForce 4 Ti4400	ELSA	725DVI
GeForce 4 Ti4600	ELSA	925ViVo

For the latest updates of the supported AGP VGA cards list, please visit ECS ELITEGROUP website for details.

ECS ELITEGROUP website: http://www.ecs.com.tw

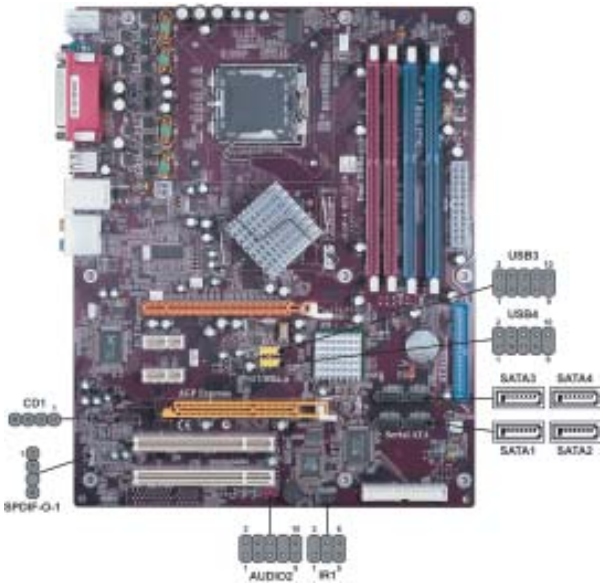
Follow these instructions to install an add-on card:

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:



AUDIO2: 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_F_R	Right Channel audio signal to Front Panel
6	AUD_RET_R	Right Channel Audio signal to Return from Front Panel
7	REVD	Reserved
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

CD1: CD Audio Input header

Pin	Signal Name	Function
1	CD in_L	CD In left channel
2	GND	Ground
3	GND	Ground
4	CD in_R	CD In right channel

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	-	-

SPDIF-0-1: 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

USB3/4: Front Panel USB header

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

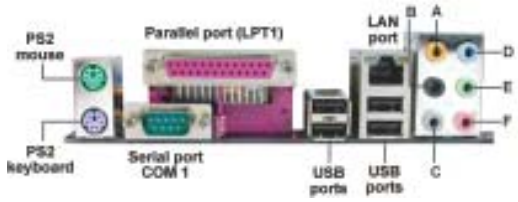
IR1: Infrared port

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

Pin	Signal Name	Function
1	Not Assigned	Not assigned
2	Key	No pin
3	+5V	IR Power
4	GND	Ground
5	IRTX	IrDA serial output
6	IRTX	IrDA serial input

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.

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.

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest American Megatrends 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:

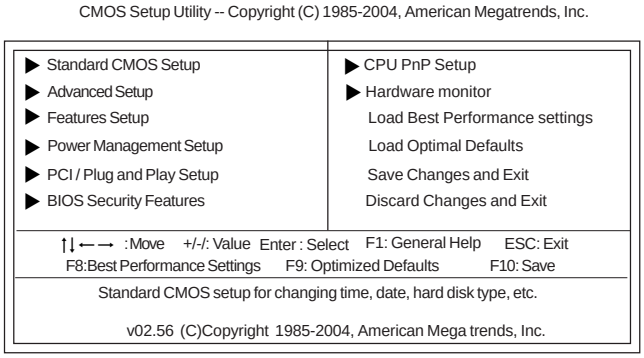
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security 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/F1 to enter SETUP

Press the delete key or F1 to access the BIOS 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
F1	Displays a screen that describes all key functions
F8	Loads the best setting for peak performance
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
ESC	Exits the current menu

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 the filename of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
7. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

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>.

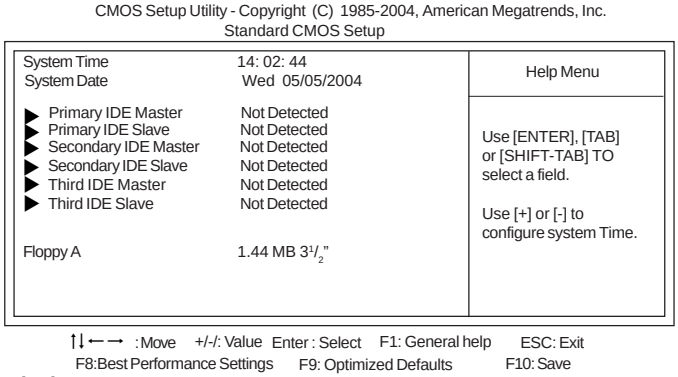
Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

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 Setup

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.

►Primary/Secondary/Third IDE Master/Slave

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

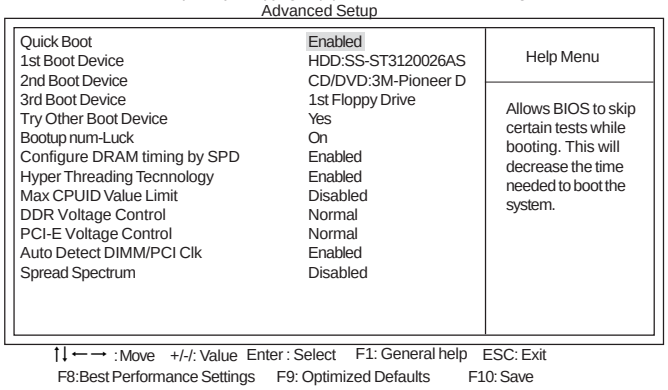
Floppy A

These items set up size and capacity of the floppy diskette drive(s) installed in the system.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



Quick Boot (Enabled)

If you enable this item, the system starts up more quickly because of the elimination of some of the power on test rutines.

1st/2nd/3rd Boot Device

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

Try Other Boot Device (Yes)

If you enable this item, the system will also search for other boot devices if it fails to find an operating system from the first boot device.

BootUp Num-Lock (On)

This item determines if the Num Lock key is active or inactive at system start-up time.

Configure DRAM Timing by (Enabled)

This item allows you to enable or disable the DRAM timing defined by the Serial Presence Detect electrical.

Hyper Threading Technology (Enabled)

You can set “Disabled” or “Enabled” to control HT CPU support in O.S. Set “Enabled” to test HT CPU function.

Max CPUID Value Limit (Disabled)

Enable this item when users intend to install NT4.0 to make the system work properly with Prescott and LGA775 CPU.

DDR Voltage Control (Normal)

This item enables users to adjust the DDR voltage. We strongly recommend users leave this item at its default value.

PCI-E Voltage Control (Normal)

This item enables users to adjust the PCI-E voltage. We strongly recommend users leave this item at its default value.

Auto Detect DIMM/PCI Clk (Enabled)

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

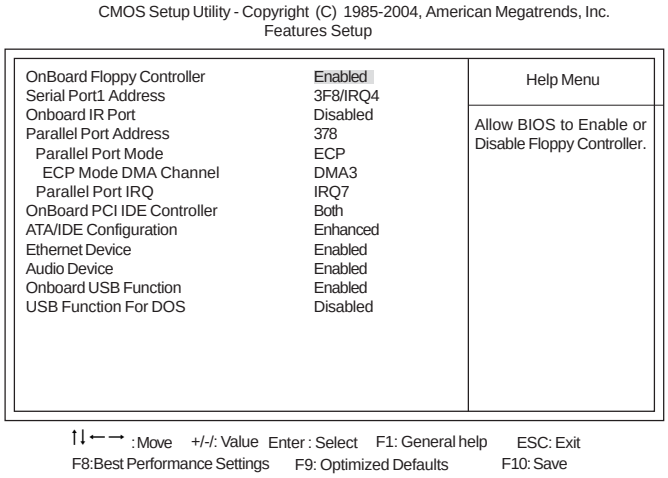
Spread Spectrum (Disabled)

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

Press <Esc> to return to the main menu setting page.

Features Setup

This page sets up some parameters for peripheral devices connected to the system.



OnBoard Floppy Controller (Enabled)

Use this item to enable or disable the onboard floppy disk drive interface.

Serial Port1 Address (3F8/IRQ4)

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

Onboard IR Port (Disabled)

Use this item to enable or disable the onboard IR port function.

Parallel Port Address (378)

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

Parallel Port Mode (ECP)

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

ECP Mode DMA Channel (DMA3)

Use this item to assign the DMA Channel under ECP Mode function.

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

OnBoard PCI IDE Controller (Both)

Use this item to enable or disable either or both of the onboard Primary and Secondary IDE channels.

ATA/IDE Configuration (Enhanced)

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

Ethernet Device (Enabled)

Use this item to enable or disable the onboard Ethernet.

Audio Device (Enabled)

Use this item to enable or disalbe the onboard audio device.

Onboard USB Function (Enabled)

Enable this item if you plan to use the USB ports on this motherboard.

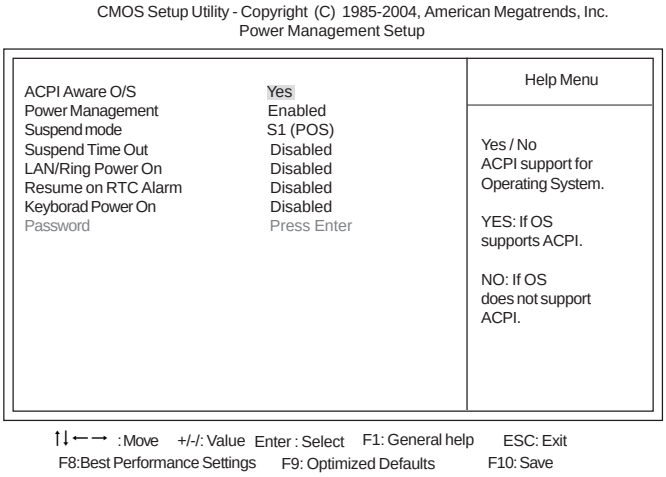
USB Function For DOS (Disabled)

Enable this item if you plan to use the USB ports on this motherboard in a DOS environment.

Press <Esc> to return to the main menu setting page.

Power Mangement Setup

This page sets up some parameters for system power management operation.



ACPI Aware O/S (Yes)

This itme supports ACPI (Advanced Configuraion and Power Management Interface). Use this item to enable or disable the ACPI feature.

Power Management (Enabled)

Use this item to enable or disable a power management scheme. If you enable power management, you can use this item below to set the power management operation. Both APM and ACPI are supported.

Suspend Mode (S1 (POS))
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 a suspend to RAM, i.e., the system shuts down with the exception of a refresh current to the system memory.

Suspend Time Out (Disabled)
This item sets up the timeout for Suspend mode in minutes. If the time selected passes without any system activity, the computer will enter power-saving Suspend mode.

LAN/Ring Power On (Disabled)
The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem/Ring, or traffic on the network adapter. You must use an ATX power supply in order to use this feature.

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

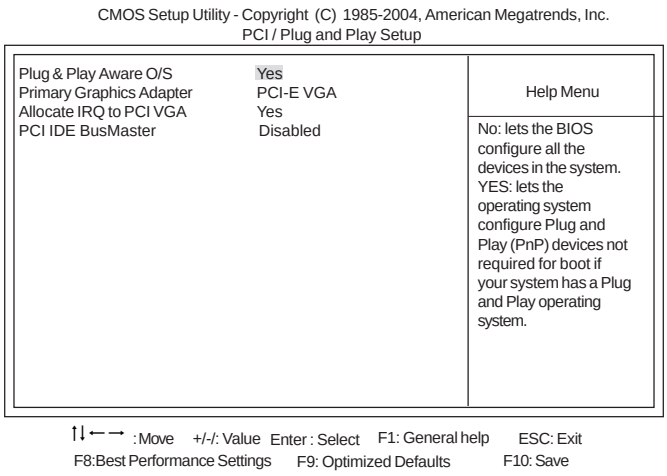
Keyboard Power On (Disabled)
If you enable this item, system can automatically resume by pressing any keys or power key or typing in the password on the keyboard. You must use an ATX power supply in order to usethis feature.

Password (Press Enter)
When Keyboard Power On is set to "Password", this item is available and users can enter the password.

Press <Esc> to return to the main menu setting page.

PCI / Plug and Play Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.



Plug & Play Aware O/S (Yes)

This itme select which, the BIOS or the operating system, will configure all the devices in the system. If set NO, the BIOS configures the system; set YES, the operating system configure Plug and Play devices.

Primary Graphics Adapter (PCI-E VGA)

This itme indicates if the primary graphics adapter uses the PCI-E VGA, PCI VGA, or AGP-E VGA.

Allocate IRQ to PCI VGA (Yes)

If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

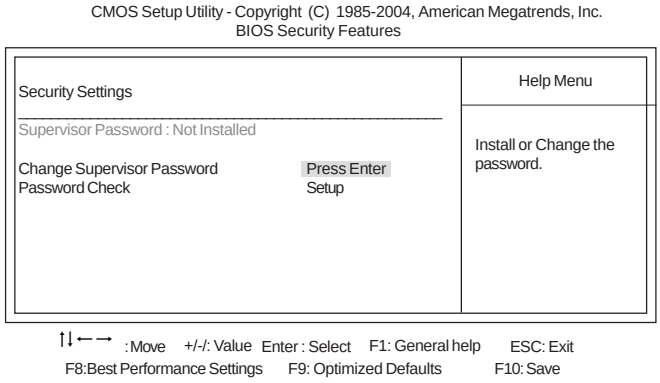
PCI IDE BusMaster (Disabled)

This item enables or disabled the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

BIOS Security Features

This page helps you install or change a password.



Supervisor Password (Not Installed)

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

Change Supervisor Password (Press Enter)

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

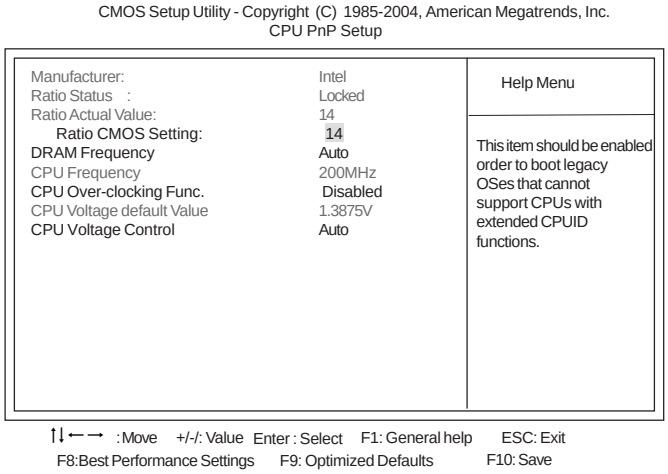
Password Check (Setup)

This item enables users to choose the time when the system will perform password check.

Press <Esc> to return to the main menu setting page.

CPU PnP Setup

This page helps you manually configure the CPU of this motherborad. The system will automatically detect the type of installed CPU and make the appropriate adjustments to these items on this page.



Manufacturer (Intel)

These items indicate the brand of the CPU installed in your system.

Ratio Status/Ratio Actual Value

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

Ratio CMOS Setting

This item sets the ratio between CPU Core Clock and the FSB Frequency. Users please not that if a invalid ratio has been entered to this field, BIOS will restore it to previous state. Please noted that the ratio will be varied with different CPU.

DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

CPU Frequency

This item indicates the current CPU frequency. Users can not make any change to this item. Please noted that the frequency will be varied with different CPU.

CPU Over-clocking Func. (Disabled)

This item decides the CPU over-clocking function/frequencyinstalled in your system. If the over-clocking fails, please turn offthe system power. And then, hold the PageUp key (similar to theClear CMOS function) and turn on the power, the BIOS willrecover the safe default.

CPU Voltage default Value (1.3875V)

This item identifies the CPU voltage default value. The value may change depending on the CPU you installed on this motherboard.

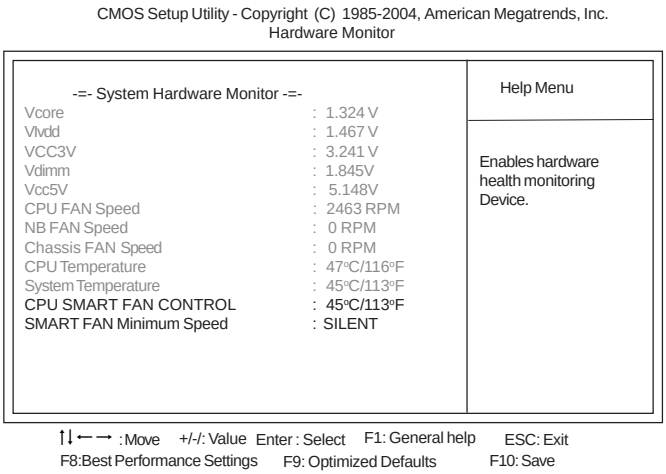
CPU Voltage Control (Auto)

This item enables users to adjust the CPU voltage. We strongly recommend users leave this item at its default value.

Press <Esc> to return to the main menu setting page.

Hardware Monitor

This page helps you set up some parameters for the hardware monitoring function of this motherboard.



System Hardware Monitor

These items display the monitoring of the overall inboard hardware health events, such as CPU temperature, system temperature, system fan,...etc.

CPU SMART FAN CONTROL (45°C/113°F)

Use this item to set the CPU SMART FAN contorl. When the system temperature is below 45°C, the SMART FAN is running in SILENT mode, while above 45°C, the SMART FAN will be running at full speed mode.

SMART FAN Minimum Speed (SILENT)

This item enables users to select the minimum speed of the SMART FAN when the system temperature is below the value set at the above item. Here users have three modes to choose from, SILENT, LOW, and MIDDLE.

Press <Esc> to return to the main menu setting page.

Load Best Performance Settings

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

Warning: To load Best Performance Settings may make your system unstable or unbootable.

Load Optimal Defaults

This option opens a dialog box that lets you install stability-oriendted defaults for all appropriate items in the Setup Utility. Select [OK] and then press <Enter> to install the defaults. Select [Cancel] and then press <Enter> to not install the defaults.

Save Changes and Exit

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

Discard Changes and Exit

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

If you have made settings that you do not want to save, use the "Discard Changes and Exit" item and select [OK] to discard any changes you have made.

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.

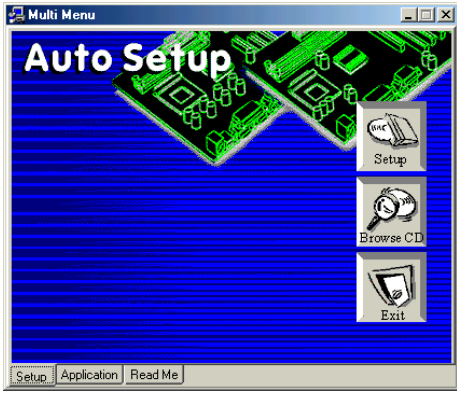
Before installing any software, always inspect the folder for files named README.TXT, INSTALL.TXT, or something similar. These files may contain important information that is not included in this manual.

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.

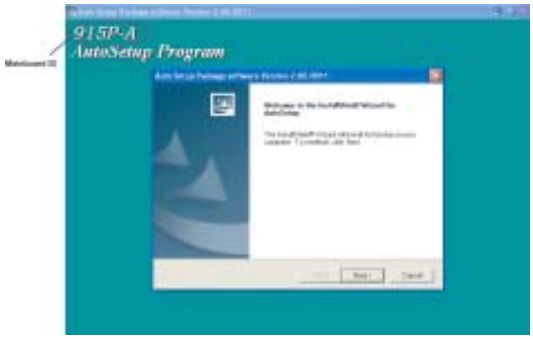
Read Me Tab

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:

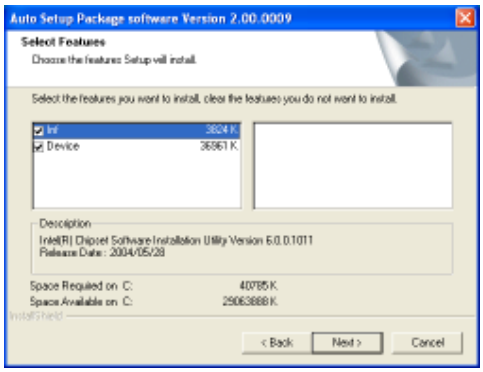
1. *Click **Setup.** The installation program begins:*



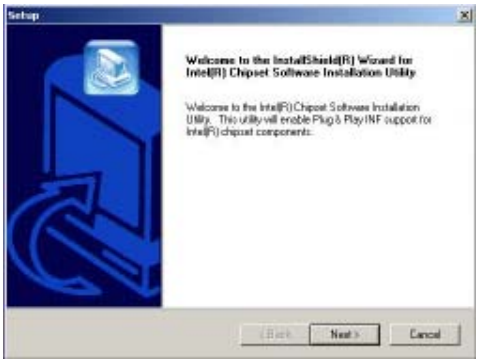
The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

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.

AWARD Flash Memory 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

PC-CILLIN

The PC-CILLIN software program provides anti-virus protection for your system. This program is available for Windows 2000/ME/98SE/XP and Windows NT. Be sure to check the readme.txt and install the appropriate anti-virus software for your operating system.

We strongly recommend users to install this free anti-virus software to help protect your system against viruses.

This concludes Chapter 4.

Caractéristiques

Processeur

La 915P-A utilise un type LGA775 de Pentium 4 présentant les fonctionnalités suivantes:

- Reçoit des processeurs Intel P4 Prescott
- 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 915-P Northbridge (NB) Chipset et ICH6 Southbridge (SB) se base sur une architecture innovante et évolutive avec des performances et une fiabilité éprouvées.

915P (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 un PCI Express x16 pour Interface Graphique, entièrement conforme à la Spécification de Base PCI Express révision 1.0a.
- Prend en charge les technologies DDR 256-Mb, 512-Mb et 1-Gb pour x8 et x16 périphériques
- Prend en charge jusqu’à quatre DIMM sans mémoire tampon

Le chipset 915P 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 de base PCI Express, Révision 1.0a
- 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
- Conforme à la spécification Azalia prenant en charge 8 Canaux de sorties audio
- Contrôleur IDE intégré prenant en charge Ultra ATA100/66/33

Mémoire

- Prend en charge les DIMM SDRAM DDR 400/333 MHz ou DDR2 533/400
- Reçoit quatre DIMM sans tampon
- Jusqu’à 1 Go par DIMM avec une taille de mémoire maximum de 2 Go

Les utilisateurs doivent noter que les DDR & DDR2 ne peuvent pas être appliquées toutes les deux simultanément sur cette carte mère. Les utilisateurs peuvent utiliser le module

Audio

- 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 AGP Express
- Un PCI Express x16 pour Interface Graphique
- Deux PCI Express x1
- Deux emplacements PCI v2.3 bits
- Un en-tetes demi-hauteur supportant deux canaux IDE
- Une interface lecteur de disquettes
- Quatre connecteurs SATA à 7 broches

La 915P- Une carte mère prenant en charge la maîtrise de bus UltraDMA avec vitesses de transfert de 100/66 Mo/s.

LAN sur carte (optionnel)

Le contrôleur LAN interne offre les caractéristiques suivantes:

- Prend en charge des vitesses de fonctionnement à 10/100/1000 Mbps (10/100 Mbps optionnels)
- Prend en charge PCI v2.3, 32 bits, 33/66-MHz
- Prise en charge totale avec IEEE 802.3z

E/S intégrées

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

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

Microprogramme BIOS

La carte mère utilise AMI 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 915P-A benutzt einen Pentium 4 des Typs LGA775 und besitzt folgende Eigenschaften:

- Aufnahme eines Intel P4 Prescott-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 915-P Northbridge (NB)- sowie ICH6 Southbridge (SB)-Chipsatz basiert sich auf eine innovative und skalierbare Architektur mit bewiesenr Zuverlässigkeit und Leistung.

915P (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 PCI Express x16 für die Grafikschnittstelle, gemäß den PCI Express-Base-Spezifikationen Revision 1.0a.
- Unterstützung von 256-Mb, 512-Mb und 1-Gb DDR-Technologien für x8 und x16 Zubehör.
- Unterstützung von bis zu vier ungepufferten DIMM.

Das 915P 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 PCI Express-Base-Spezifikationen, Revision1.0a.
- 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.
- Gemäß Azalia-Spezifikation, mit Unterstützung von 8 Audio-Output-Kanälen.
- Integrierter IDE-Kontroller, welcher Ultra ATA100/66/33 unterstützt.

Arbeitsspeicher

- Unterstützung von DDR 400/333 MHz oder DDR2 533/400 DDR SDRAM DIMMs.
- Es können vier ungepufferte DIMMs aufgenommen werden.
- Bis zu 1 GB pro DIMM mit maximaler Speicherkapazität von bis zu 2 GB.

Zur Beachtung des Benutzers: DDR & DDR2 können nicht zusammen oder zur gleichen Zeit mit dieser Motherboard benutzt werden!

Audio

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

Die 915P-A-Motherboard unterstützt UltraDMA Bus Mastering mit einer Übertragungsrate von 100/66 MB/Sek.

Onboard LAN (Optional)

Der Onboard-LAN-Kontroller hat folgende Eigenschaften:

- Unterstützung einer Betriebsgeschwindigkeit von 10/100/1000 MbpS (10/100 MbpS wahlfrei)
- Unterstützung von PCI v2.3, 32-Bit, 33/66-MHz
- Volle Unterstützung mit IEEE 802.3z

Integrierte I/O

Das Motherboard hat einen vollständigen Satz von E/A-Schnittstellen bzw. -Anschlüssen:

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

BIOS-Firmware

Das Motherboard verwendet AMI 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 915P-A sfrutta un Pentium 4 di tipo LGA775 che dispone delle seguenti caratteristiche:

- Alloggia processori Intel P4 Prescott
- 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 915-P Northbridge (NB) e ICH6 Southbridge (SB) sono basati su una architettura innovativa e scalabile dalle prestazioni e affidabilità garantite.

915P (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 un PCI Express x16 per interfaccia grafica, completamente compatibile con le specifiche di revisione 1.0a di PCI Express Base.
- Supporta tecnologie DDR da 256-Mb, 512-Mb e 1-Gb per dispositivi x8 e x16
- Supporta sino a quattro DIMM unbuffered

Il chipset 915P 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 e moduli di memoria Single Side.

ICH6 (SB)

- Controller DMA migliorato, controller interrupt e funzioni di timer
- Compatibile con le Specifiche di base del PCI Express, Revision1.0a
- Conforme alle specifiche PCI 2.3.
- Conforme alle specifiche Serial ATA 1.0a
- Host Controller USB 2.0 integratoin grado di supporare sino a 8 porte USB 2.0
- Controller LAN integrato
- Compatibile con le specifiche di Azalia in grado di supportare 8 canali di audio output
- Integrato con controller IDE supporta Ultra ATA100/66/33

Memoria

- Supporta DDR 400/333 MHz o DDR2 533/400 DDR SDRAM DIMM
- Alloggia 4 DIMM unbuffered
- Dimensione massima della DIMM pari ad 1 GB per un ammontare massimo di 2 GB di memoria

Gli utenti sono pregati di notare che sia la DDR sia la DDR2 non possono entrambe essere applicate a questa scheda madre. Gli utenti possono utilizzare solo i moduli di memoria DDR o DDR2!

Audio

- 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 bit
- 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 AGP Express
- Un PCI Express x16 per interfaccia grafica
- Due PCI Express x1
- Due 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.

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

LAN Onboard (opzionale)

Il controller LAN installato dispone delle seguenti caratteristiche:

- Supporta velocità di operazioni a 10/100/1000 Mbps (10/100 Mbps supplementare)
- Supporta PCI v2.3, 32-bit, 33/66-MHz
- Completamente conforme con l'IEEE 802.3z

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
- Una porta parallela
- Una porta LAN (opzionale)
- Jack audio per microfono, line-in e 8 canali audio ad alta definizione.

Firmware BIOS

Questa scheda madre adotto un BIOS AMI 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 915P-A usa un tipo LGA775 de Pentium 4 que lleva las sigtes. características::

- Acomoda los procesadores Intel P4 Prescott
- 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 915-P (NB) y Southbridge ICH6 (SB) están basados en una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

915P (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 un PCI Express x16 para la Interfaz de Gráficas, completamente conforme a la Especificación Base PCI Express revisión 1.0a.
- Soporta las tecnologías 256-Mb, 512-Mb y 1-Gb DDR para los dispositivos x8 y x16.
- Soporta hasta cuatro DIMM sin buffer.

El chipset 915P 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 Especificación Base PCI Express, Revisión1.0a.
- Conforme con la espec. PCI 2.3.
- Conforme con la espec. Serial ATA 1.0a
- Controlador Anfitrión USB 2.0 Integrado soporta hasta ocho puertos USB 2.0.
- Controlador LAN integrado .
- Conforme con la especificación Azalia que soporta 8 canales de salidas de sonido.
- Controlador IDE integrado soporta Ultra ATA100/66/33.

Memoria

- Soporta DDR 400/333 MHz o DDR2 533/400 DDR SDRAM DIMMs
- Acomoda cuatro DIMMS sin buffer
- Hasta 1 GB por DIMM con el tamaño de memoria máximo hasta 2 GB

Usuarios favor observen que los DDR & DDR2 no se pueden aplicar al mismo tiempo en esta placa principal. ¡Deben usar los módulos de memoria DDR o DDR2 solamente!

Audio

- 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 AGP Express
- Un PCI Express x16 para la Interfaz de Gráficas
- Dos PCI Express x1
- Dos 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
- Que conectores 7-pin SATA

La placa principal 915P-A soporta el mastering de bus UltraDMA con índices de transferencia de 100/66 MB/s.

LAN en placa (opcional)

El controlador LAN abordo provee las sigtes. características:

- Soporta la operación de velocidad de 10/100/1000 Mbps(10/100 Mbps optativo)
- Soporta PCI v2.3, 32-bit, 33/66-MHz
- Soporte completo con el IEEE 802.3z

I/O integrado

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

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

Firmware de BIOS

La placa base utiliza AMI 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 915P-A usa um tipo LGA775 de Pentium 4 que possui as seguintes características:

- Acomoda processadores Intel P4 Prescott
- 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 915-P Northbridge (NB) e ICH6 Southbridge (SB) são baseados em uma arquitetura inovativa e escalável com performance e confiabilidade comprovada.

915P (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 um PCI Express x16 Interface de Gráficos, que cumpre inteiramente com a revisão de Especificação de Base 1.0a. do PCI Express.
- Suporta 256-Mb, 512-Mb e tecnologias 1-Gb DDR para aparelhos x8 e x16
- Suporta até quatro DIMMs sem buffers

Chipset (conjunto de chips) 915P 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
- Cumpre com a Especificação de Base do PCI Express, Revisão 1.0a
- Em conformidade com a especificação PCI 2.3
- Compatível com Série ATA 1.0a
- Controlador Host 2.0 USB integrado suportando até oito portas USB 2.0
- Controlador LAN integrado
- Cumpre com a especificação Azalia suportando 8 Canais de saídas áudio
- Controlador IDE integrado suporta Ultra ATA100/66/33

Memória

- Suporta DDR 400/333 MHz ou DDR2 533/400 DDR SDRAM DIMMs
- Acomoda quatro DIMMs sem buffers
- Até 1 GB por DIMM com tamanho de memória máxima de até 2 GB

Os utilizadores deverão ter em atenção que o DDR & DDR2 não pode ser aplicado ao mesmo tempo nesta motherboard. Os utilizadores poderão usar somente módulos de memória DDR ou DDR!

Áudio

- 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 placa-mãe possui as seguintes opções de expansão:

- Uma abertura AGP Express
- Um PCI Express x16 para Interface de Gráficos
- Dois PCI Express x1
- Dois ranhuras compatíveis com PCI v2.3 de 32 bits
- Uma cabeçalhos de baixo perfil IDE 40 pinos, que suportam dois dispositivos IDE
- Uma interface para unidade de disquete
- Quatro conectores SATA de 7 pinos

A mother board 915P-A suporta um domínio bus UltraDMA bus com taxas de Transferência de 100/66 MB/s.

LAN integrada (opcional)

O controlador LAN onboard contém as seguintes características:

- Suporta 10/100/1000 Mbps de rapidez de funcionamento(10/100 Mbps opcionais)
- Suporta PCI v2.3, 32-bit, 33/66-MHz
- Suporta inteiramente com IEEE 802.3z

E/S integradas

A placa principal 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
- Uma porta paralela
- Uma porta LAN (opcional)
- Fichas áudio para microfone, alinhadas e com Áudio de Elevada Definição 8-ch

Firmware do BIOS

A placa-mãe usa o AMI 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

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

機能

プロセッサ

915P-AI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：

- Intel P4 Prescott 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。
- “ハイパースレッド技術対応のCPUを取り付け可能。

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

チップセット

915-P 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ています。

915P (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。
- グラフィックインターフェース用PCI Express x16 スロットを提供、これでPCI Express Base Specification revision 1.0aに完全対応。
- 8倍速または16倍速のデバイスの256-Mbや512-Mb、1-Gb のDDR技術に対応。
- 最大4つの非バッファーDIMMをサポート

915P 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技術のみ対応。128-Mb DDR 技術は対応されません。具体的に、256 MB二面メモリモジュールや128 MB 片面メモリモジュールは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 Express Base Specification 1.0a版に完全対応。
- PCI 2.3仕様に準拠しています。
- シリアルATA 1.0a仕様に準拠し。
- 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。
- Azalia規格に準拠で、8チャネルのオーディオ出力可能。
- 統合型IDEコントローラで、Ultra ATA100/66/33サポート可能。

メモリ

- DDR 400/333 MHzやDDR2 533/400のDDR SDRAM DIMMに対応。
- 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2GBまでをサポート。

DDRとDDR2との組み合わせ混在の構成は対応されてませんのでご注意。必ずDDRか DDR2かのいずれかのみのメモリ構成にして下さい。

オーディオ

- 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。

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

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

オンボードLAN (オプション)

オンボードLANコントローラで次の機能を実現：

- 10/100/1000 Mbps 通信速度(10/100 Mbps 選択可能)
- PCI v2.3, 32-bit, 33/66-MHzへの対応
- IEEE 802.3zへの全面対応

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 x2
- シリアルポート x1
- パラレルポート x1
- LANポート x1(オプション)
- さらに、マイクロホン入力と、ライン入力と、8チャネルHigh Definition Audio出力とを搭載。

BIOSファームウェア

本マザーボードはAMI 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

915P-A 는 다음과 같은 특징을 지닌 팬티엄 4 의 GA775 타입을 사용한다:

- 인텔 팬티엄 4 Prescott 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

915-P Northbridge (NB) 와 ICH6 Southbridge (SB) 칩셋은혁 신적이고 범위성을 지닌 아키텍처를 바탕으로 인정된 신뢰성과 성능을 지닌다.

915P (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.
- 그래픽 인터페이스를 위해 1 개의 PCI Express x16 지원, PCI Express Base 1.0a 사양 완전 부합.
- x8 및 x16 장치를 위해 256-Mb, 512-Mb, 1-Gb DDR 기술 지원.
- 최고 4 개의 unbuffered DIMM 지원

915P 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

ICH6 (SB)

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

메모리

- DDR 400/333 MHz 또는 DDR2 533/400 DDR SDRAM DIMM 지원
- 4 개의 unbuffered DIMM 사용
- DIMM 당 최대 1 GB, 최대 메모리 2 GB

본 마더보드에 DDR 과 DDR2 를 동시에 사용할 수 없으므로, DDR 또는 DDR2 메모리 모듈 중 하나만 사용하십시오!

오디오

- 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

- AGP 익스프레스 슬롯 1 개
- 그래픽 인터페이스를 위한 PCI 익스프레스 x16 1 개
- PCI 익스프레스 x1 2 개
- 32 비트 PCI v2.3 호환 슬롯 2 개
- 2 개의 IDE 채널을 지원하는 IDE 로우 프로파일 해더 1 개
- 플로피 디스크 드라이브 인터페이스 1 개
- 7 핀 SATA 커넥터 4개

915P-A 마더보드는 전송 속도 100/66 MB/s의 UltraDMA 버스 마스터링을 지원한다.

보트 내장 LAN (선택 사항)

보드 내장 LAN 컨트롤러는 다음과 같은 특징을 제공한다:

- 10/100/1000 Mbps 속도의 오퍼레이션 지원 (10/100 Mbps 는 선택 사항)
- PCI v2.3, 32-bit, 33/66-MHz 지원
- IEEE 802.3z 전적으로 지원

통합 I/O

이 메인보드에는 풀 세트의 I/O 포트와 커넥터가 있다

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

BIOS 펌웨어

본 메인보드는 AMI 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

915P-A 採用LGA775型的Pentium 4，具有如下特徵：

- 支援Intel P4 Prescott 處理器；
- 支援高達800/533MHz之系統匯流排(FSB)；
- 支援使用高速執行緒(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

915-P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，具備優良的可靠性及性能。

915P (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；
- 具有一個繪圖卡用之PCI Express x16 介面，完全符合PCI Express Base Specification 1.0a版；
- 支援8倍速及16倍速之256-Mb、512-Mb、及1-Gb DDR技術；
- 支援高達4個非緩衝式DIMM。

915P 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 Express Base Specification 1.0a版；
- 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；
- 符合Azalia規格，支援8聲道音訊輸出；
- 整合式IDE控制器，支援Ultra ATA100/66/33。

記憶體

- 支援DDR 400/333 MHz或DDR2 533/400 DDR SDRAM DIMM；
- 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2GB的記憶體容量。

請注意：本主機板並不支援同時安裝 DDR及DDR2之模組，僅能選擇安裝DDR或DDR2之其中一種記憶模組！

音效

- 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AGP Express槽；
- 1個繪圖卡用PCI Express x16 介面；
- 2個PCI Express x1；
- 2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7針SATA插頭；

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

內建區域網路 (選購)

機載區域網路控制器具有如下功能：

- 支援10/100/1000 Mbps 作業(10/100 Mbps 為選項)；
- 支援PCI v2.3, 32位元, 33/66-MHz；
- 支援IEEE 802.3z。

整合 I/O

主機板具有一組齊全的 I/O 連接埠及連接頭：

- 2 個 PS/2 埠，供滑鼠與鍵盤使用；
- 1 個串列埠；
- 1 個平行埠；
- 1 個區域網路埠(選購)；
- 具有麥克風輸入端子、線級輸入端子、及 8聲道高傳真音效(High Definition Audio)輸出端子。

BIOS 韌體

本主機板使用AMI 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

915P-A 使用 LGA775 型 Pentium 4 CPU，具备以下特点：

- 支持 Intel P4 Prescott 处理器
- 支持 800/533 MHz 系统总线 (FSB)
- 支持“多线程”技术 CPU

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

芯片组

915-P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。

915P (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 1 个 PCI Express x16 用于图形接口，完全符合 PCI Express Base 规格 1.0a。
- 支持用于 x8 和 x16 设备的 256-Mb、512-Mb 和 1-Gb DDR 技术
- 最多支持 4 个非缓冲 DIMM

915P 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 Express Base 规格 1.0a
- 符合 PCI 2.3 规格
- 符合串行 ATA 1.0 规格
- 集成 USB 2.0 主控器，最多支持 8 个 USB 2.0 端口
- 集成 LAN 控制器
- 符合 Azalia 规格，支持 8 声道音频输出
- 集成 IDE 控制器，支持 Ultra ATA100/66/33

内存

- 支持 DDR 400/333 MHz 或 DDR2 533/400 DDR SDRAM DIMM
- 支持 4 个非缓冲 DIMM
- 每个插槽支持 1 GB，总共最大可支持 2 GB

用户需注意 DDR 和 DDR2 不能同时在此主板上使用，只能使用 DDR 或 DDR2 内存中的任何一种！

音频

- 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 AGP Express 插槽
- 1 个用于图形接口的 PCI Express x16
- 2 个 PCI Express x1
- 2 个 32 位 PCI 扩展插槽
- 1 个 40-pin IDE 紧凑型接口，支持 2 个 IDE 通道
- 1 个软驱接口
- 4 个 7-pin SATA 接口

主板915P-A支持 Ultra DMA 总线控制，传输速率可达 100/66 MB/sec。

Onboard LAN (可选)

板上集成的 LAN 控制器提供以下功能：

- 支持 10/100/1000 Mbps 速度工作（10/100 Mbps 可选）
- 支持 PCI v2.3，32-位，33/66-MHz
- 完全支持 IEEE 802.3z

集成 I/O

此主板具有完整的 I/O 端口和插孔：

- 2 个用于连接鼠标和键盘的 PS/2 端口
- 1 个串口
- 1 个并口
- 1 个 LAN 端口（可选）
- 用于麦克风、线入和 8 声道高清晰度音频的音频插孔

BIOS

此主板使用 AMI BIOS，可以让用户自己配置以下系统功能：

- 电源管理
- 唤醒报警
- CPU 参数
- CPU 和记忆定时

还可用于设置不同处理器时钟速度的参数。

某些硬件规格和软件项目若有更改恕不另行通知。