TÜV CERT

CERTIFICATE

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

hereby certifies in accordance with TÜV CERT
procedure that

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

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

has established and applies a quality system for

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

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

Proof has been furnished that the requirements according to

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

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

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

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Essen, 04.03.2004

RWTÜV

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

ROC, FE1737, RC

CERTIFICATION
S S C C

ISO14001
CERTIFICATE

Certificate No.: 061-04-E1-0065-R1-L

We hereby certify that

ECS MANUFACTURING (SHANZHEN) CO., LTD.

by reason of its

Environmental Management System
has been awarded this certificate for
compliance with the standard
ISO14001:1996
The Environmental Management System
applies in the following area:
ECS MANUFACTURING (SHANZHEN) CO., LTD.
located at No. 20 & 26 (except 1F, 2F), Free Trade Zone,
Shatuojiao, Shenzhen City, Guangdong Province, P. R. China.
is engaged in manufacturing of Mother Board and Peripheral Card,
and interrelated managerial activities.

Date of issue: 28th Sept. 2004
Date of expiry: 27th Sept. 2007
Signed by:

CNAB

SHENZHEN SOUTHERN CERTIFICATION CO., LTD.

Preface

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Version 3.0a

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Federal Communications Commission (FCC)

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

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

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

Declaration of Conformity

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

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

Canadian Department of Communications

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

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

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ➪ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ➪ page 7

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ➪ page 27

Chapter 4

Using the Motherboard Software

Describes the motherboard software

Go to ➪ page 45

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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 Socket for latest Pentium 4/ Celeron processors for high-end business or personal desktop markets.

The motherboard incorporates the 915P Northbridge (NB) and ICH6 Southbridge (SB) chipsets. The Northbridge on this motherboard 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 PCI Express x16 slot, intended for Graphics Interface, is fully comliant to the PCI Express Base Specification revision 1.0a.

The ICH6 Southbridge on this motherboard 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 that features a 8-channel 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 and LAN controller supporting 10/100/1000Mbit/s ethernet.

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 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 915P Northbridge (NB) and ICH6 Southbridge (SB) chipset are 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 Sepcification revision 1.0a
- Supports 256-Mb, 512-Mb and 1-Gb DDR/DDR2 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

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-ch 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 AGP Express slot, one PCI Express x16 slot, two PCI Express x1 slots and two 32-bit PCI v2.3 compliant slots
- One 40-pin IDE low profile header that supports two IDE devices
- One floppy disk drive interface and four 7-pin SATA connectors

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

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

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
- One LAN port (optional)
- Four USB ports
- 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 without prior notice.
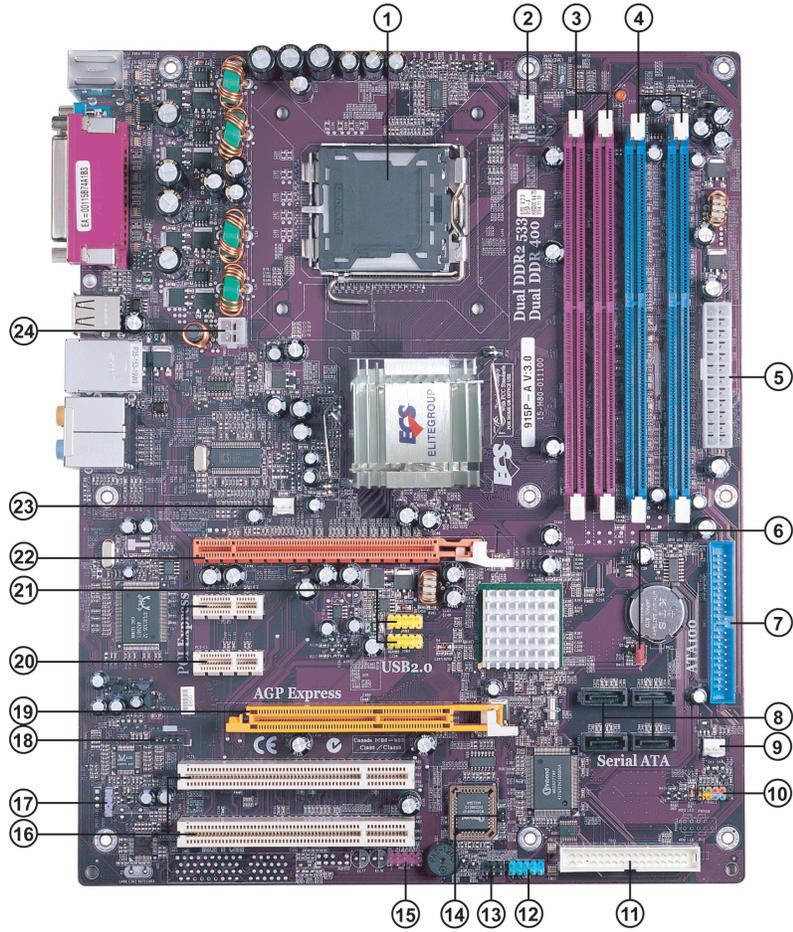
Motherboard Components

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 JP1	Clear CMOS jumper
7 IDE1	Primary IDE channel
8 SATA1~4	Serial ATA connectors
9 CHS_FAN1	Chasis cooling fan connector
10 PANEL1	Front Panel switch/LED header
11 FDC1	Floppy diskette drive connector
12 COM2 *	Onboard Serial port header
13 IR1	Internal infrared header
14 JP11	BIOS protect jumper
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 header
19 AGP-E1	AGP Express slot
20 PCI-E2~3	PCI Express x1 slots
21 USB3-4	Front Panel USB headers
22 PCI-E1	PCI Express x16 slot
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.

Introducing 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, this motherboard supports one or two floppy diskette drives and two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

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

This motherboard carries an 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.
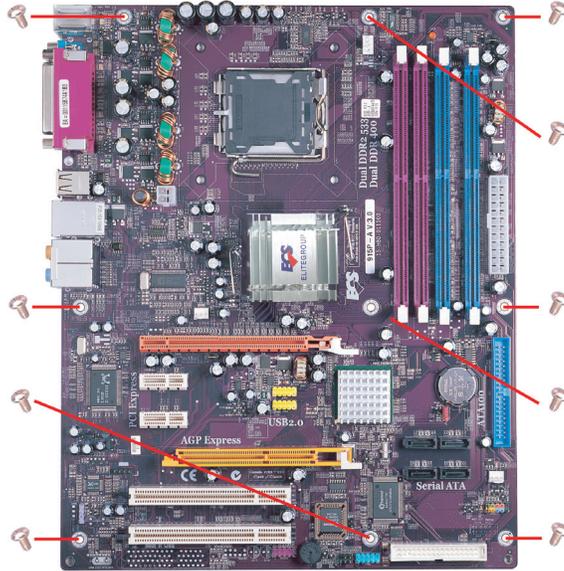
Do not over-tighten the screws as this can stress the motherboard.

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.
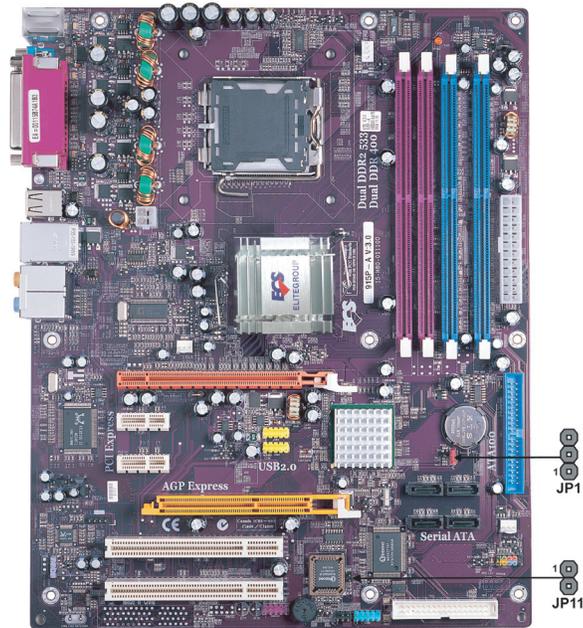
Jumper Settings

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

Installing the Motherboard

Connecting Case Components

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

1   Connect the CPU cooling fan cable to **CPU_FAN1**.
2   Connect the case cooling fan connector to **CHS_FAN1**.
3   Connect the Northbridge cooling fan connector to **NB_FAN1**.
4   Connect the case switches and indicator LEDs to the **PANEL1**.
5   Connect the standard power supply connector to **PWR1**.
6   Connect the auxiliary case power supply connector to **PWR2**.
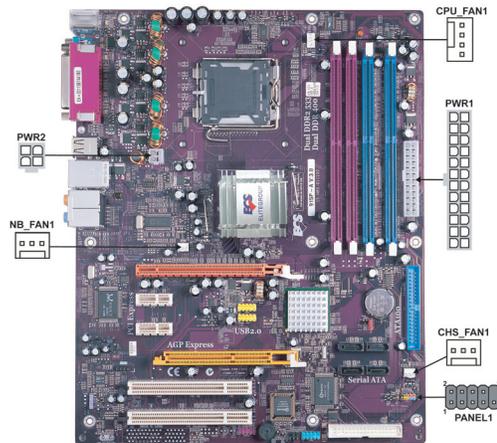
Connecting 20/24-pin power cable

Users please note that the 20-pin and 24-pin power cables can both be connected to the PWR1 connector. With the 20-pin power cable, just align the 20-pin power cable with the pin 1 of the PWR1 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.
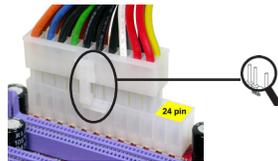
Users please note that when installing 20-pin power cable, the latche of power cable falls on the left side of the PWR1 connector latch, just as the picture shows.
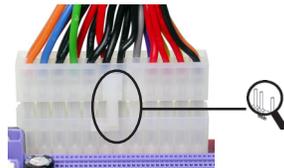
20-pin power cable

Users please note that when installing 24-pin power cable, the latches of power cable and the PWR1 match perfectly.

24-pin power cable

Installing the Motherboard

CPU_FAN1: FAN Power Connector

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

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

CHS_FAN1/NB_FAN1: FAN Power Connectors

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

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

PWR2: ATX 12V Power Connector

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

Front Panel Header

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

PANEL1
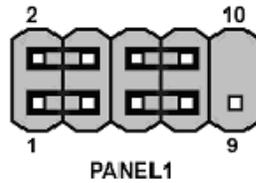
Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED+	2	FP PWR/SLP	*MSG LED+
3	HD_LED_N	Hard disk LED-	4	FP PWR/SLP	*MSG LED-
5	RST_SW_N	Reset Switch	6	PWR_SW_P	Power Switch
7	RST_SW_P	Reset Switch	8	PWR_SW_N	Power Switch
9	RSVD	Reserved	10	Key	No pin

* 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 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.

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

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

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.

Installing the Motherboard

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

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

Type	Size	Vendor	Module Name
DDR400	128MB	NANYA	NT128D64SH4B1G-5
		Infineon	HYS64D16301GU-5-B
		NANYA	NT128D64SH4B1G-5T
	256MB	SAMSUNG	M368L3223DTM-CC4
		Micron	MT8VDDT3264AG-40BC4
		Infineon	HYS64D32300HU-5-C
		Ramaxel	HYB25D256800CE-5C
		Infineon	HYS64D32300GU-5-B
		NANYA	NT256D64S88B1G-5T
		Micron	MT16VDDT3264AG-403B2
	512MB	SAMSUNG	M368L6423DTM-CC4
		NANYA	NT512D64S8HB1G-5T
		Apacer	HYB25D256800BT-5B
		Apacer	V58C2256804SAT5
		Infineon	HYS64D64320HU-5-C
		Micron	MT16VDDT6464AG-40BC4
		SAMSUNG	M368L6423ETM-CCC
		Apacer	A2S56D30ATP

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

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

Type	Size	Vendor	Module Name
DDR2 533	256MB	elixir	M2U25664TUH4A0F-37B
		Kingston	KVR533D2N4
	512MB	Apacer	E5108AB-5C-E
		SAMSUNG	M378T6553BGO-CD5
		Infineon	HYS64T64000GU-3.7-A
		Apacer	E5108AB-5C-E5
		NANYA	NT512T64U88A0F-37B
DDR2 667	512MB	ELPIDA	EBE52UC8AAFV-DF-E

Installing the Motherboard

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.

Installing the Motherboard

About SATA Connectors

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

Installing Serial ATA Hard Drives

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

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

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 the Motherboard

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.
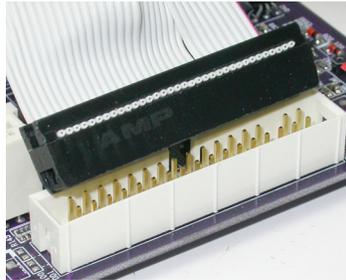
Installing Add-on Cards

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.
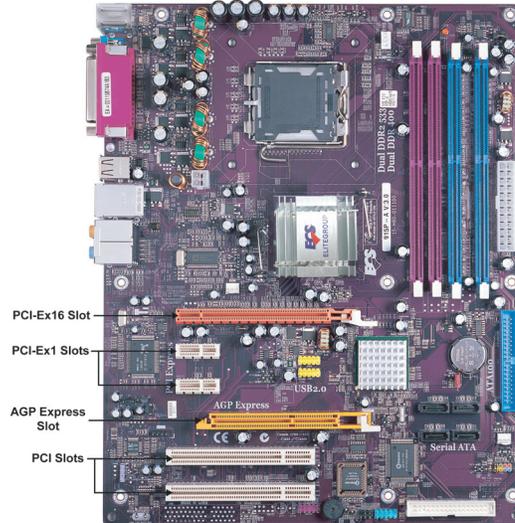
PCI-E1 (PCI-Ex16 slot)	The one PCI Express x16 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well.
PCI-E2~3 (PCI-Ex1 Slots)	The two PCI Express x1 slots are fully compliant to the PCI Express Base Specification revision 1.0a as well.
AGP Express Slot	The AGP Express slot 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 "AGP Express Graphics Support List" or visit our website at "http://www.ecs.com.tw" for the updated supported list.
PCI 1~2 (PCI 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: PCI Express Graphics Support List

VGA Chip	Model name
nVIDIA	NVIDIA FX5300 128MB(16X)
	NVIDIA FX5750 128MB(16X)
	NVIDIA FX5900 128MB(16X)
ATI	RX300SE-128TD(V :1.D) 128MB(16X)
	MSI X600 128MB(16X)

Table B: Supported AGP 8X/4X VGA Cards List

VGA Chip	Model name	AGP 4X/8X
nVIDIA	Leadtek WinFast A250 LE TD GF4 Ti4200 64MB DDR SDRAM	**4X**
	Leadtek A250TDT TI4400 128MB	
	GAWWARD Geforce3 Ti200 128MB	
	Leadtek WinFast A280 LE TD GF4 Ti4200 128MB DDR SDRAM	**8X**
	GeForce4 MX440 64M DDR	
	Millennium Silver TI4600 128MB	
ATI	ATI R7000 64MB DDR	**4X**
	ATI R7500 64MB DDR	
	ATI R9000 128MB DDR	
	ECS R9200LE-64T	**8X**
	ATI Radeon 9500 64MB DDR	
	ATI Radeon 9700pro 128MB DDR	
SIS	ECS AG200_D32 V1.0 Xabre200 64MB DDR SDRAM	**4X**
	ECS AG400_D64 V1.0 Xabre400 64MB DDR SDRAM	**8X**

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:
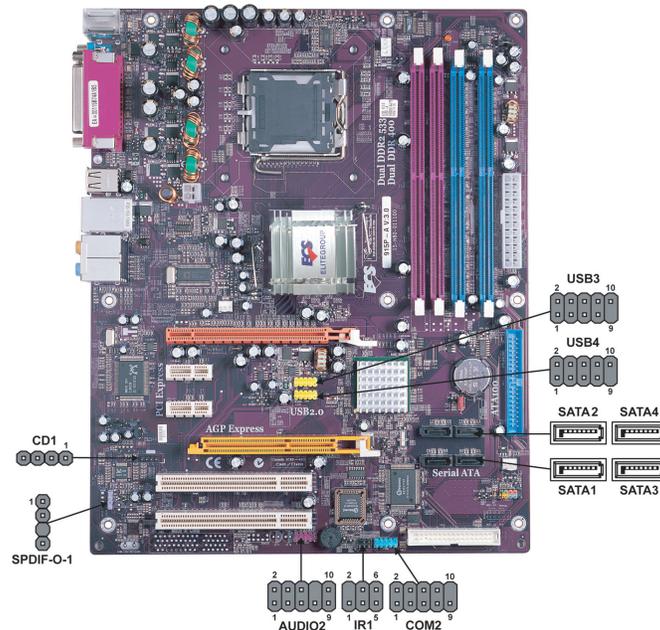
Installing the Motherboard

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

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

CD1: Analog 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

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

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	IRRX	IrDA serial input

COM2: Onboard serial port header(optional)

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

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

Installing the Motherboard

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:
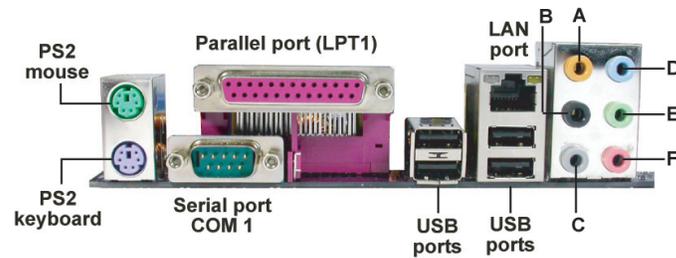
PS2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Parallel Port (LPT1)	Use LPT1 to connect printers or other parallel communications devices.
Serial Port (COM1)	Use the COM port to connect serial devices such as mice 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 to enter SETUP

Press the delete key to access the BIOS Setup Utility:

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

▶ Standard CMOS Setup	▶ BIOS Security Features
▶ Boot Configuration Features	Load Optimal Defaults
▶ Advanced Setup	Load Failsafe Defaults
▶ Advanced Chipset Features	Save Changes and Exit
▶ Power Management Features	Discard Changes and Exit
▶ Hardware Health Configuration	

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

Standard CMOS setup for changing time, date, hard disk type, etc.
v02.56 (C)Copyright 1985-2004, American Mega trends, Inc.

BIOS Navigation Keys

The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
←↑↓→	Scrolls through the items on a menu
+/-	Modifies the selected field's values
F1	Displays a screen that describes all key functions
F8	Loads Failsafe Defaults
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
ESC	Exits the current menu

Using BIOS

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 Boot Configuration Features, 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 file name of the new BIOS, then press <Enter>

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.

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.

```
       CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                             Standard CMOS Setup

 ┌──────────────────────────────────────────────────┬──────────────────────┐
 │  System Overview                                   │      Help Item        │
 │                                                    │                       │
 │  AMIBIOS                                           │                       │
 │  Version       : 08.00.11                          │  Use [ENTER], [TAB]   │
 │  Build Date    : 06/09/04                          │  or [SHIFT-TAB] TO    │
 │  ID            : 915P-A                            │  select a field.      │
 │                                                    │                       │
 │  Processor                                         │  Use [+] or [-] to    │
 │  Type        : Genuine Intel (R) CPU 3.20GHz       │  configure system Time.│
 │  Speed       : 3200MHz                             │                       │
 │                                                    │                       │
 │  System Memory                                     │                       │
 │  Size        : 512MB                               │                       │
 │                                                    │                       │
 │  System Time           [00:04:43]                  │                       │
 │  Saystem Date          [Tue 06/08/2004]            │                       │
 │                                                    │                       │
 └──────────────────────────────────────────────────┴──────────────────────┘

   ↑↓ → ← :Move   Enter : Select  +/-/: Value  F10: Save   ESC: Exit    F1: General help
        F7:Previous Values      F8:Best Performance Settings      F9: Optimized Defaults
```

Processor

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

System Memory

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

Time and Date

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

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

Using BIOS

Boot Configuration Features

This option displays basic information about your system.

```
          CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                             Boot Configuration Features

   Boot Settings Configuration                            Help Item

   1st Boot Device          [1st FLOPPY DRIVE]
   2nd Boot Device          [IC35L04AVVN07-0]         Specifies the boot sequence
   3rd Boot Device          [ASUS CD-S520/A]          from the available devices.

   Quick Boot               [Enabled]                 A device enclosed in paren-
   Quiet Boot               [Enabled]                 thesis has been disabled in
   Bootup Num-Lock          [On]                      the corresponding type
                                                       menu.




   ↑↓ → ← :Move   Enter : Select  +/-/: Value  F10: Save  ESC: Exit   F1: General help
     F7:Previous Values      F8:Best Performance Settings     F9: Optimized Defaults
```

1st/2nd/3rd Boot Device

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.

Quick Boot (Enabled)

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

Quiet Boot (Enabled)

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

Boot Up NumLock (On)

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

Press <Esc> to return to the 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.

```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                          Advanced Setup
┌─────────────────────────────────────────────────┬──────────────────────┐
│  Advanced Settings                               │     Help Item        │
│                                                  │                      │
│  ▶  CPU Configuration      [Press Enter]         │                      │
│  ▶  Floppy Configuration   [Press Enter]         │  Configurate F75122R DC│
│  ▶  IDE Configuration      [Press Enter]         │  Voltage Chip        │
│  ▶  SuperIO Configuration  [Press Enter]         │                      │
│  ▶  DC Voltage Configuration [Press Enter]       │                      │
│                                                  │                      │
│                                                  │                      │
│                                                  │                      │
│                                                  │                      │
│                                                  │                      │
│                                                  │                      │
└─────────────────────────────────────────────────┴──────────────────────┘
  ↑↓ → ←  :Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit      F1: General help
  F7:Previous Values       F8:Best Performance Settings    F9: Optimized Defaults
```

▶ CPU Configuration (Press Enter)

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

```
CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                        CPU Configuration
┌─────────────────────────────────────────────────┬──────────────────────┐
│  Configure advanced CPU settings                 │     Help Item        │
│                                                  │                      │
│  Manufacturer           Intel                    │  Sets the ratio between CPU│
│  Brand String  : Genuine Intel(R) CPU 3.20GHz    │  Core Clock  and  the FSB│
│  Frequency    : 3.20GHz                          │  Frequency.          │
│  FSB Speed    : 800MHz                           │  NOTE: If a invalid ratio has│
│                                                  │  been entered to this field,│
│  Cache L1    : 16KB                              │  BIOS will restore it to previ-│
│  Cache L2    : 1024KB                            │  ous state.          │
│                                                  │                      │
│  Ratio Status              Unlocked (Max: 16)    │                      │
│  Ratio Actual Value        16                    │                      │
│  Ratio CMOS Setting        [14]                  │                      │
│  Hyper Threading Technology [Enabled]            │                      │
│  Max CPUID Value limit     [Disabled]            │                      │
│  Excute Disable Bit        [Enabled]             │                      │
│  CPU Over-clocking Func.   [Disabled]            │                      │
│  CPU Frequency             200MHz                │                      │
└─────────────────────────────────────────────────┴──────────────────────┘
  ↑↓ → ←  :Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit      F1: General help
  F7:Previous Values      F8:Best Performance Settings    F9: Optimized Defaults
```

Manufacturer/Brand String/Frequency/FSB Speed

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

Cache L1/L2

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

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 (14)

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.

Hyper Threading Technology (Enabled)

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

Max CPUID Value Limit (Disabled)

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

Execute Disable Bit (Enabled)

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

CPU Over-clocking Func. (Disabled)

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

CPU Frequency

This item displays the CPU current frequency.

Press <Esc> to return to the advanced setup page.

►Floppy Configuration (Press Enter)

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

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
Floppy Configuration

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

↑↓ → ← :Move Enter : Select +/-/: Value F10: Save ESC: Exit F1: General help
F7:Previous Values   F8:Best Performance Settings   F9: Optimized Defaults

Floppy A

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

Using BIOS

Press <Esc> to return to the advanced setup page.

▶IDE Configuration (Press Enter)

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

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
IDE Configuration

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

↑↓ → ← :Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit   F1: General help
F7:Previous Values   F8:Best Performance Settings   F9: Optimized Defaults

ATA/IDE Configuration (Compatible)

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

IDE Chennels (SATA Pri, PATA Sec)

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

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

Your computer has two IDE channels 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.

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

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
Secondary IDE Master

Secondary IDE Master	Help Item
Device : Hard Disk Vendor : IC35L040AUVN07-0 Size : 41.1GB LBA Mode : Supported Block Mode : 16 Sectors PIO Mode : 4 Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-2 S.M.A.R.T. : Supported Type [Auto] LBA/Large Mode [Auto] Block (Multi-Sector Transfer[Auto] PIO Mode [Auto] DMA Mode [Auto] S.M.A.R.T. [Auto]	Select the type of device conneted to the system.

↑↓→← :Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit   F1: General help
F7:Previous Values   F8:Best Performance Settings   F9: Optimized Defaults

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
Secondary IDE Slave

Secondary IDE Slave	Help Item
Device : CD/DVD ROM Vendor : ASUS CD-S520/A LBA Mode : Supported PIO Mode : 4 Async DMA : MultiWord DMA-2 Ultra DMA : Ultra DMA-2 Type [Auto] PIO Mode [Auto] DMA Mode [Auto]	Select the type of device conneted to the system.

↑↓→← :Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit   F1: General help
F7:Previous Values   F8:Best Performance Settings   F9: Optimized Defaults

Hard Disk Write Protect (Disabled)

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

IDE Detect Time Out (35)

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

Press <Esc> to return to the advanced setup page.

Using BIOS

►Super IO Configuration (Press Enter)

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

```
                    CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                                          SuperIO Configuration

        OnBoard Floppy Controller          [Enabled]              Help Item
        Serial Port1 Address               [3FB/IRQ4]
        Serial Port2 Address               [2FB/IRQ3]
        Serial Port 2 Mode                 [Normal]         Allows BIOS to Enable or
        Parallel Port Address              [378]            Disable Floppy Controller.
          Parallel Port Mode               [ECP]
            ECP Mode DMA Channel           [DMA3]
          Parallel Port IRQ                [IRQ7]

        ↑↓ → ←  :Move    Enter : Select   +/-/: Value  F10: Save  ESC: Exit      F1: General help
             F7:Previous Values      F8:Best Performance Settings   F9: Optimized Defaults
```

Onboard Floppy Controller (Enabled)

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

Serial Port1/2 Address (3F8/IRQ4/2F8/IRQ3)

Use this item to enable or disable the onboard COM1/2 serial port, and to assign a port address.

Serial Port2 Mode (Normal)

If Serial Port 2 Address is not disabled, it allows you to set the Serial Port 2 Mode.

Parallel Port Address (378)

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

Parallel Port Mode(ECP)

Use this item to select the parallel port mode.

ECP Mode DMA Channel (DMA3)

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

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

Press <Esc> to return to the advanced setup page.

Using BIOS

▶DC Voltage Configuration (Press Enter)

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

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
DC Voltage Configuration

F75122R DC Voltage Configuration		Help Item
CPU Vcore Voltage	[Auto]	Options
Memory Voltage	[Normal]	Auto
PCI-E Voltage	[Normal]	1.6000V
		1.5875V
		1.5750V
		1.5625V
		1.5500V
		1.5375V
		1.5250V
		1.5125V
		1.5000V
		1.4875V
		1.4750V
		1.4625V
		1.4500V
		1.4375V

↑↓ → ← : Move   Enter : Select   +/-/: Value   F10: Save   ESC: Exit   F1: General help
F7: Previous Values   F8: Best Performance Settings   F9: Optimized Defaults

CPU Vcore Voltage (Auto)

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

Memory Voltage (Normal)

This item allows you to adjust the DDR memory voltage.

PCI-E Voltage(Normal)

This item enables users to adjust the PCI-E voltage.

Press <Esc> to return to the advanced setup page.

Using BIOS

Advanced Chipset Features

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

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

   ┌─────────────────────────────────────────────────────────┬────────────────────┐
   │  Advanced Chipset Settings                                │  Help Item         │
   │                                                           │                    │
   │  DRAM Frequency                    [Auto]                 │                    │
   │  Configure DRAM Timing by SPD        [Enabled]            │  Select the type of de-│
   │                                                           │  vice conneted to the │
   │  Init Display First                [PCIE/PCI]             │  system.           │
   │    Aperture Size Select            [256MB]                │                    │
   │                                                           │                    │
   │  Auto Detect PCI Clk               [Enabled]              │                    │
   │  Spread Spectrum                   [Enabled]              │                    │
   │                                                           │                    │
   │                                                           │                    │
   │  Onboard Device                                           │                    │
   │  USB Function                      [Enabled]              │                    │
   │  Legacy USB Support                [Enabled]              │                    │
   │  USB 2.0 Controller                [Enabled]              │                    │
   │  AUDIO Device                      [Enabled]              │                    │
   │  LAN Device                        [Enabled]              │                    │
   │  LAN Boot ROM Support              [Disabled]             │                    │
   └─────────────────────────────────────────────────────────┴────────────────────┘

   ↑↓ → ← :Move  Enter : Select  +/-/: Value   F10: Save  ESC: Exit      F1: General help
        F7:Previous Values        F8:Best Performance Settings      F9: Optimized Defaults
```

DRAM Frequency (Auto)

This item determines frequency of DRAM memory.

Configure DRAM Timing by SPD (Enabled)

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

Init Display First (PCIE/PCI)

This item allows you to choose the primary display card.

Aperture Size Select (256MB)

This item defines the size of the aperture if you use an AGP graphics adapter. The AGP aperture refers to a section of the PCI memory address range used for graphics memory. We recommend that you leave this item at the default value.

Auto Detect PCI Clk (Enabled)

This item allows you to enable or disable you to detect PCI clock automatically.

Spread Spectrum (Enabled)

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

USB Function (Enabled)

This item allows you to enable or disable USB function.

Legacy USB Support (Enabled)

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

USB 2.0 Controller (Enabled)

This item allows you to enable or disable USB 2.0 Controller.

AUDIO Device (Enabled)

Enables and disables the Audio device.

LAN Device (Enabled)

Enables and disables the onboard LAN.

LAN Boot ROM Support (Disabled)

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

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

Power Mangement Setup

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

```
        CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                           Power Management Features

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


   ↑↓→← :Move   Enter : Select  +/-/: Value  F10: Save  ESC: Exit    F1: General help
        F7:Previous Values     F8:Best Performance Settings   F9: Optimized Defaults
```

Suspend mode (S3)

After the selected period of system inactivity, all devices expect the CPU shut off.

APM Power Management (Enabled)

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

Repost Video on S3 Resume (No)

If STR mode or Auto mode is selected, this item allows you to enable/disable this function.

Suspend Time Out (Disabled)

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

Power Button Mode (On/Off)

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

Restore on AC Power Loss (Power Off)

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

PS/2 Keyboard/Mouse Wakeup (Disabled)

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

Resume On Ring (Disabled)

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

Resume On LAN (Disabled)

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

Resume On PME# (Enabled)

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

USB Device Wakeup From S3 (Disabled)

This item allows you to enable/disable the USB device Wakeup function from S3/S4 mode.

Resume On RTC Alarm (Disabled)

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

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

Using BIOS

Hardware Health Configuration

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

```
       CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
                           Hardware Health Configuration

   Shutdown Temperature              [Disabled]          Help Item

                                                         Options
   Hardware Health Configuration

   Current SYSTEM Temperature        :39° C/102° F       Disabled
   Current CPU Temperature           :38° C/100° F       Enabled
   SYS FAN Speed                     :0 RPM
   CPU FAN Speed                     :3924RPM
   PWR FAN Speed                     : 0 RPM
   CPU Vcore                         : 1.353 V
     1.5V                            : 1.516V
     3.3V                            :3.338V
     5.0V                            :5.094V
    Vdimm                            :1.935V
   Battery Voltage                   :3.258V


 ↑↓→←  :Move   Enter : Select  +/-/: Value  F10: Save  ESC: Exit    F1: General help
 F7:Previous Values        F8:Best Performance Settings   F9: Optimized Defaults
```

Case Open Warning (Disabled)

Enables or disables the features of recording the chassis intrusion status; Once the chassis is opened, a warning message will be issued.

Shutdown Temperature (Disabled)

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

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

Using BIOS

BIOS Secuity Features

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

CMOS Setup Utility - Copyright (C) 1985-2004, American Megatrends, Inc.
BIOS Security Features

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

↑↓→← :Move   Enter : Select   +/-/: Value F10: Save   ESC: Exit   F1: General help
F7:Previous Values   F8:Best Performance Settings   F9: Optimized Defaults

Supervisor Password/User Password (Not Installed)

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

Change Supervisor Password/Change User Password (Press Enter)

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

Boot Sector Virus Protection (Disabled)

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

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

Using BIOS

Load Optimal Defaults

This option opens a dialog box that lets you install optimized defaults for all appropriate items in the Setup Utility. Press <OK> and then <Enter> to install the defaults. Press <Canel> 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 <F9>.

Load Failsafe Defaults

This option opens a dialog box that lets you install fail-safe defaults for all appropriate items in the Setup Utility: Press <OK> and the <Enter> to install the defaults. Press <Canel> 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 <F8>.

Save Changes and Exit

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

Discard Changes and Exit

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

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

Memo

Chapter 4
Using the Motherboard Software

About the Software CD-ROM

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

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

Auto-installing under Windows 2000/XP

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

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

The support software CD-ROM disc loads automatically under Windows 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.
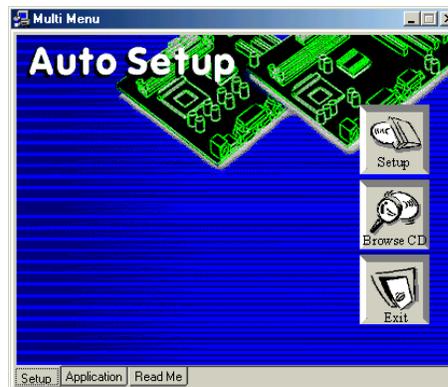
> *If the opening screen does not appear; double-click the file "setup.exe" in the root directory.*

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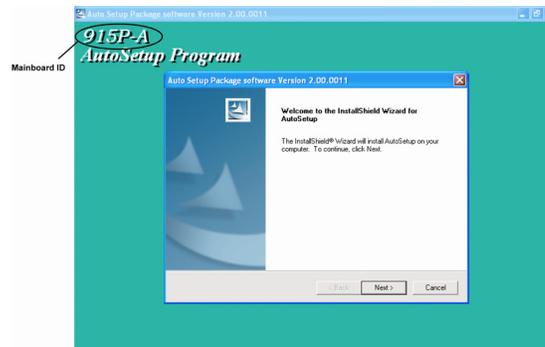
    The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

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

Using the Motherboard Software

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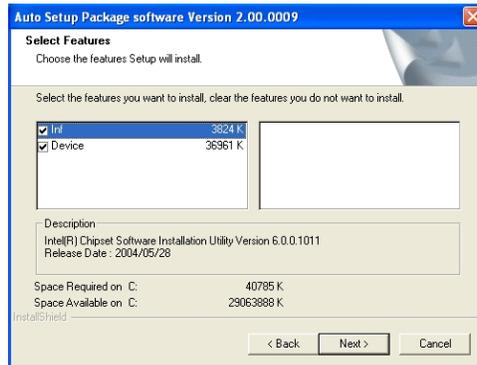
3. *Check the box next to the items you want to install. The default options are recommended.*

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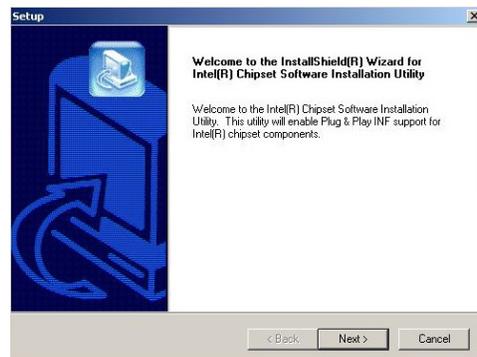
5. *Follow the instructions on the screen to install the items.*

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

Manual Installation

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

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

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

Utility Software Reference

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

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

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 915P-A 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 915P 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/DDR2 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 mémoire DDR ou le module DDR2 seulement!

Multi-Language Translation

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 AGP Express, un PCI Express x16 pour Interface Graphique, deux PCI Express x1 et deux emplacements PCI v2.3 bits
- Un en-têtes demi-hauteur IDE de 40 broches supportant deux canaux IDE
- Une interface lecteur de disquettes et quatre connecteurs SATA à 7 broches

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

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

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
- Un port LAN (optionnel)
- Quatre ports USB
- 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.

Multi-Language Translation

Leistungsmerkmale

Prozessor

Der 915P-A 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 915P 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/DDR2-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

Dieses Motherboard 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 AGP-Express-Schlitz, ein PCI-Express x16 für eine Grafikschnittstelle, zwei PCI Express x1und zwei 32-bit PCI v2.3-Steckplätze
- Einen 40-Pin IDE low profile-Stecker, die zwei IDE-Kanäle unterstützen
- Ein Diskettenlaufwerkanschluss und vier 7-Pin SATA-Stecker

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

Onboard LAN (Optional)

Dieses Motherboard 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

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
- Ein LAN- Steckplatz (optional)
- Vier USB-Anschlusse
- Audiostecker für 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/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 915P 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/DDR2 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 da 256-MB e moduli di memoria Single Side da 128-MB.

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

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 AGP Express, un PCI Express x16 per interfaccia grafica, due PCI Express x1e due slot PCI v2.3 a 32 bit
- Una connettori IDE a 40 pin che supportano due canali IDE
- Una interfaccia floppy disk e 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)

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

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
- Una porta LAN (opzionale)
- Quattro porte USB
- 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.*

Multi-Language Translation

Características

Procesador

La 915P-A 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 915P (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/DDR2 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

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 AGP Express, un PCI Express x16 para la Interfaz de Gráficas, dos PCI Express x1 y 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 y cuatro conectores SATA de 7-pin

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

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

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
- Un puerto LAN (optativo)
- Cuatro puertos USB
- 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.

Multi-Language Translation

Características

Processador

O 915P-A 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 915P 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/DDR2 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

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 abertura AGP Express, um PCI Express x16 para Interface de Gráficos, dois PCI Express x1 e 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 e quatro conectores SATA de 7 pinos

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

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

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
- Uma porta LAN (opcional)
- Quatro portas USB
- Fichas áudio para microfone, alinhadas e com Áudio de Elevada Definição 8-ch

Firmware do BIOS

A motherboard 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 clock do processador.

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

Multi-Language Translation

機能

プロセッサ

915P-A 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

915P 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/DDR2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。

Multi-Language Translation

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。

- AGP Expressスロットが1つ、PCI Express x16 スロットが1つ、PCI Express x1スロットが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
- FD ドライブ インターフェイス が1つ 、7ピン SATAコネクタが4つ

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

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。

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
- LAN ポート(オプション)が 1つ
- USBポート が4つ
- 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。

> ハードウェア仕様とソフトウェアアイテムが、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 LGA775 타입을 사용한다:

- 인텔 팬티엄 4 /Celeron 프로세서 사용
- 800/533 MHz 시스템 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

915P Northbridge (NB) 와 ICH6 Southbridge (SB) 칩셋은혁 신적이고 범위성을 지닌 아키텍쳐를 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/DDR2 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 지원하지 않는다.*

ICH6 (SB)
- 보강 DMA 컨트롤러, 인터럽트 컨트롤러, 및 타이머 기능
- PCI Express Base 1.0a 사양 부합
- PCI 2.3 사양 호환.
- 시리얼 ATA 1.0a 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

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

- AGP 익스프레스 슬롯 1 개, 그래픽 인터페이스를 위한 PCI 익스프레스 x16 1 개, PCI 익스프레스 x1 2 개 및 32 비트 PCI v2.3 호환 슬롯 2 개
- 2 개의 IDE 채널을 지원하는 40 핀 IDE 로우 프로파일 해더 1 개
- 플로피 디스크 드라이브 인터페이스 1 개 및 7 핀 SATA 커넥터 4개

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

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

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
- LAN 포트 (선택사항) 1 개
- USB 포트 4 개
- 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/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

915P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/DDR2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

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AGP Express槽,1個繪圖卡用PCI Express x16 介面,2個PCI Express x1及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 及 4個 7針型SATA連接器。

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

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。

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
- 1個LAN埠(選購);
- 4 個USB埠;
- 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/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

915P 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/DDR2 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 1.0a 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
- 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

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 AGP Express 插槽，1 个用于图形接口的 PCI Express x16，2 个 PCI Express x1 和 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 和 4 个 7 针 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)

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

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
- 1 个 LAN 端口（可选）
- 4 个 USB 端口
- 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。

Процессор

Плата 915P-A 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 915P «Северный мост» (Northbridge, NB) и ICH6 «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

915P (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.
- Имеет один разъем для подключения карты графики PCI Express x16; обеспечивает полную соместимость с PCI Express Base, rev. 1.0a.
- Поддерживает технологии 256-Мб, 512-Мб и 1-Гб DDR/DDR2 для устройств x8 и x16
- Поддерживает до четырех слотов небуферизованной памяти DIMM

Чипсет 915P 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 Express Base, Rev. 1.0a
- 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
- Совместимость с технологией Azalia, поддержка 8-канального аудиовыхода
- Встроенный контроллер IDE с поддержкой Ultra ATA100/66/33

Память

- Поддержка памяти DDR 400/333 МГц или DDR2 533/400 DDR SDRAM DIMM
- Обслуживает 4 модуля небуферизованной памяти DIMM
- Обслуживает до 1 ГБ на модуль DIMM (максимально до 2 ГБ памяти)

Внимание! Модули DDR и DDR2 не моугт использоваться одновременно. Можно использовать только модули DDR или только модули DDR2!

Multi-Language Translation

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 AGP Express, один разъем для карты графики PCI Express x16, два разъема PCI Express x1 и два 32-битных слота PCI v2.3
- Один низкопрофильный 40-штырьковый слот IDE, обеспечивающий поддержку двух устройств IDE
- Один разъем для накопителя на гибких дисках и четыре 7-штырьковых коннектора SATA

Плата 915P-A поддерживает технологию захвата управления шиной UltraDMA bus mastering со скоростью передачи данных 100/66 МБ/сек.

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
- Поддержкжа PCI v2.3, 32-бит, 33/66-МГц
- Поддерживает технологии IEEE802.3, IEEE802.3u и IEEE802.3ab

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
- Один порт LAN (опционально)
- Четыре порта USB
- Гнездо для подключения микрофона, гнездо аудио-входа и 8-канального аудиовыхода

BIOS

Плата работает под AMI 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 915P-A 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) 915P i mostek południowy (SB) ICH6 chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalnoęci.

915P (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 jedno złącze grafiki PCI Express x16; całkowicie zgodne z technologią PCI Express Base, w wersji 1.0a.
- Obsługuje pamięci 256-Mb, 512-Mb i 1-Gb w technologii DDR/DDR2 w urządzeniach x8 i x16
- Obsługuje do czterech niebuforowanych pamięci DIMM

Chipset 915P 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 technologią PCI Express Base, Rev. 1.0a
- 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
- Wbudowany kontroler LAN
- Zgodny z technologią Azalia: zapewnia 8-kanałowe wyjście audio
- Wbudowany kontroler IDE obsługujący Ultra ATA100/66/33

Pamięć

- Obsługuje pamięci typu DDR 400/333 MHz lub DDR2 533/400 DDR SDRAM DIMM
- Zaopatrzony w cztery gniazda niebuforowanej pamięci typu DIMM
- Obsługuje pamięć DIMM do pojemności 1 GB każda; maksymalna możliwa pojemność pamięci do 2 GB

Użytkowników uczulamy na fakt, że na tej płytce głównej nie mogą być używane jednocześnie pamięci typu DDR i DDR2. Można używać tylko pamięć typu DDR lub tylko pamięć typu DDR2!

Polski

Audio

Ta płyta głwna 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 głwna wyposażona jest w następujące gniazda:
- Jedno gniazdo AGP Express, jedno gniazdo PCI Express x16 dla karty graficznej, dwa gniazda PCI Express x1 i dwa 32-bitowych gniazda zgodnych z PCI w wersji 2.3
- Jedno 40-nóżkowe złącze niskoprofilowe obsługujące dwa urządzenia IDE
- Jedno złącze obsługujące stacje dyskietek i cztery 7-nóżkowe złącza SATA

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

Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

- Obsluguje 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
- Obsluguje 32 bitowe PCI w wersji 2.3 o częstotliwościach 33/66-MHz
- Obsługuje wpełni IEEE802.3, IEEE802.3u oraz IEEE802.3ab

Zintegrowane We/Wy

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

Firmowy BIOS

Płyta głwna wyposażona jest w BIOS firmy AMI, 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 915P-A je urèena pro procesory Pentium 4 LGA775 a mùze 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" umožòuje 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) 915P a southbridge (SB) ICH6 jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

915P (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 jednoho rozhraní PCI Express x16 pro grafiku, zcela splòující základní požadavky standardu PCI Express, revize 1.0a.
- Podpora 256-Mb, 512-Mb a 1-Gb DDR/DDR2 technologií pro zaøízení x8 a x16
- Podpora až ètyø DIMM modulù bez vyrovnávací pamìti

Čipová sada 915P 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 základní požadavky standardu PCI Express, revize 1.0a
- 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
- Splňuje požadavky standardu Azalia, který podporuje 8 kanálový zvukový výstup
- Integrovaný řadič IDE podporující Ultra ATA100/66/33

Paměť

- Podporuje pamì ové moduly DDR 400/333 MHz nebo DDR2 533/400 DDR SDRAM DIMM
- Instalovat je možné až ètyøi DIMM moduly bez vyrovnávací pamìti
- Až 1 GB pamìti na jeden modul DIMM s maximální velikostí pamìti do 2 GB

Povšimnìte si prosím, že pamìti DDR a DDR2 nelze použit na této základní desce souèasnì. Použít je možné buï DDR nebo DDR2 pamì ové moduly!

Multi-Language Translation

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

- Jedna patice AGP Express, jedna patice PCI Express x16 pro grafickou kartu, dvì
  patice PCI Express x1 a dvì 32bitové patice PCI v2.3
- Jeden nízkoprofilový 40kolíkový konektor IDE podporující připojení dvou
  zařízení standardu IDE
- Jedno rozhraní pro disketovou mechaniku a čtyři 7kolíkové konektory SATA

Základní deska 915P-A podporuje sběrnici Ultra DMA s přenosovými rychlostmi 100/66 MB/s.

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

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
- Jeden port LAN (volitelně)
- Čtyři porty USB
- Zvukové konektory pro mikrofon, zvukový vstup a 8kanálový Hi-Fi zvukový
  výstup

Firmware BIOS

Základní deska využívá BIOS formy AMI, 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

915P-A 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 și cum ar exista două procesoare, putând fi rulate în paralel două fire, fiecare pe câte un procesor „logic" separat, aflate pe același procesor fizic.

Setul de chipuri

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

915P (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 așteptare cu adâncimea 12 pentru a sprijini maxim douăsprezece cereri de adresare paralele pe busul gazdei.
- Sprijină PCI Express de 16x pentru interfața grafică, este pe deplin compatibil cu versiunea 1.0a a specificației de bază PCI Express.
- Este compatibil cu tehnologiile de 256-Mb, 512-Mb și 1-Gb DDR/DDR2, pentru unități de viteza 8x sau 16x
- Suportă cel mult patru unități de memorie DIMM fără zonă tampon

Setul de chipuri 915P funcționează doar cu tehnologiile DDR de 256-Mb, 512-Mb și 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 și cele cu față simplă de 128 MB.

ICH6 (SB)
- Controler DMA îmbunătățit, controler de întreruperi și funcții de temporizare
- Compatibil cu specificația de bază PCI Express, versiunea 1.0a
- Compatibil cu specificația PCI 2.3
- Compatibil cu specificație Serial ATA 1.0a
- Controler gazdă USB 2.0 integrat, care suportă cel mult opt porturi USB 2.0
- Controler LAN integrat
- Compatibil cu specificație Azalia, suportând 8 canale audio de ieșire
- Controler IDE integrat, suportând Ultra ATA100/66/33

Memoria

- Funcționează cu module SDRAM DIMM DDR 400/333 MHz sau DDR2 533/400 DDR
- 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 2 GB

În atenția utilizatorilor: Această placă de bază nu suportă simultan module DDR și DDR2. Utilizați fie unități DDR, fie module DDR2!

Multi-Language Translation

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 biți: Intrare audio, CD, AUX • Suportă funcția S/PDIF de ieșire şi intrare
• Compatibil cu specificația 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 biți • Suportă 8 porturi I/O Smart Jack • Detectare extinsă mufe prin RNM (metoda rețelei de rezistențe), care poate fi utilizată pentru monitorizarea stării conexiunii fiecărei mufe • Suportă S/PDIF OUT și IN digital

Opţiuni de extindere

Placa de bază este dotată următoarele posibilități de extindere:

- Un slot AGP Express, un PCI Express de 16x pentru interfaţa grafică, două PCI Express de 1x şi două sloturi de 32 biți compatibile PCI, versiunea 2.3
- O interfață IDE 40 cu profil plat care poate deservi două unități IDE
- O interfață pentru unitate floppy şi patru conectoare SATA cu 7 ace

Placa de bază 915P-A suportă bus mastering UltraDMA cu viteze de transfer de 100/66 MB/s

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 funcția Wake-On-LAN și trezirea de la distanță
• Unitate de emisie/recepţie 10/100/1000 integrat • Suportă PCI, versiunea 2.3, de 32 biți, la 33/66 MHz • Pe deplin compatibil cu standardele IEEE802.3, IEEE802.3u şi IEEE802.3ab

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
- Un port LAN (opţional)
- Patru porturi USB
- Mufe audio pentru microfon, intrare audio şi pentru 8 canale audio de ieșire de înaltă fidelitate

Firmware BIOS

Placa de bază utilizează AMI 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 frecvenţe de comandă ale procesorului.

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

Спецификация

Процесор

Дънната платка 915P-A 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 915P (NB) и южен мост ICH6 (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

915P (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 шина PCI Express x16 за графичен интерфейс, напълно съвместима с шината PCI Express Base ревизия 1.0a.
- поддръжка на технологии 256-Mb, 512-Mb и 1-Gb DDR/DDR2 за x8 и x16 устройства
- поддръжка на до четири небуферирани DIMM слота.

Чипсетът 915P 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 подключват 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 Express Base, ревизия 1.0a
- 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
- съвместимост със спецификацията Azalia с поддръжка на 8-канално аудио
- интегриран контролер IDE с поддръжка на Ultra ATA100/66/33

Памет

- поддръжка на DDR 400/333 MHz или DDR2 533/400 DDR SDRAM DIMMs
- поддръжка на до четири небуферирани DIMM слота
- до 1 GB памет на 1 DIMM канал с максимален капацитет 2 GB

Моля отбележете, че НЕ могат едновременно да се използват модули DDR и DDR2. Използвайте модули или само DDR или само DDR2!

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 AGP Express слот, един слот PCI Express x16 за графичен интерфейс, два слота PCI Express x1 и два слота 32-bit PCI v2.3
- • един нископрофилен 40-pin IDE колектор с поддръжка на две IDE устройства
- • един конектор за флопидисково устройство и четири конектора 7-pin SATA

Дънната платка 915P-A поддържа шина UltraDMA 100/66 MB/s

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

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
- • Един LAN порт (опция)
- • Четири USB порта
- • аудио жак за микрофон (вход), линеен вход, линеен изход и изход за 8-канално High Definition аудио

BIOS Firmware

Дънната платка използва AMI 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 915P-A 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 915P Northbridge (NB) és ICH6 Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

915P (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.
- Egy 16-szoros Express PCI-vel rendelkezik a grafikus interfész számára, amely teljesen kompatibilis a PCI Express alapspecifikáció 1.0a változatával.
- 256 Mb-os, 512 Mb-os és 1 Gb-os DDR/DDR2 technológiát támogat 8- és 16-szoros eszközök esetében
- Akár négy puffermentes DIMM egységgel képes működni

A 915P 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 Express alapspecifikáció 1.0a változatával
- 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
- Kompatibilis az Azalia specifikációval, 8 csatornás audio kimenetet támogatva
- Beépített IDE vezérlő, amely az Ultra ATA100/66/33 technológiát támogatja

Memória

- 400/333 MHz-es DDR vagy 533/400 MHZ-es DDR2 DDR SDRAM DIMM egységekkel működik
- Négy puffermentes DIMM egységgel működik
- Maximum 1 GB-os DIMM egységeket támogat, maximális memória 2 GB

A felhasználók figyelmébe: Ezen az alaplapon nem használhatók egyszerre DDR és DDR2 egységek, ezért vagy csak DDR, vagy csak DDR2 memóriaegységeket használjanak!

Multi-Language Translation

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

A 915P-A alaplap támogatja az UltraDMA bus mastering megoldást, 100/66 MB/s sebességen

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

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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 LAN port (opcionális)
- Csatlakozók mikrofon bemenethez, audio bemenethez és 8 csatornás, nagy hűségű audio kimenethez

Magyar

BIOS Firmware

Az alaplapon levő AMI 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.*