



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



Essen, 04.03.2004




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



ISO14001 CERTIFICATE

Certificate No.: 061-04-EI-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,

Shatuojiang, Shenzhen City, Guangdong Province, P. R. China.

is engaged in manufacturing of Mother Board and Peripheral Card,
and interrelated managerial activities.

Date of issue: 28th Sept. 2004

Date of expiry: 27th Sept. 2007

Signed by:



SHENZHEN SOUTHERN CERTIFICATION CO., LTD.

Preface

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Version 1.0

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

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

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

Declaration of Conformity

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

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

Canadian Department of Communications

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

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

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Chapter 4

Using the Motherboard Software

Describes the motherboard software

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Chapter 1

Introducing the Motherboard

Introduction

Thank you for choosing the RS485M-M motherboard. This motherboard is a high performance, enhanced function motherboard that supports Socket AM2 AMD Sempron/Athlon 64/Athlon 64 X2 Dual-Core/Athlon 64 FX CPUs for high-end business or personal desktop markets.

The motherboard incorporates the RS485 Northbridge (NB) and SB460 Southbridge (SB) chipsets. The Northbridge supports the HyperTransport (HT) interface speeds up to 2000 MT/s data rate. It supports two DDR2 Sockets with maximum memory size of 16 GB. One PCI Express x16 slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 1.0a.

The motherboard with SB460 Southbridge supports two PCI slots which are PCI 2.3 compliant. It integrates USB 2.0 interface, supporting up to eight functional ports. One onboard IDE connector supports two IDE devices in Ultra DMA 133/100/66/33 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 1.5 Gb/s each.

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

Feature

Processor

This motherboard uses Socket AM2 that carries the following features:

- Accommodates AMD Sempron/Athlon 64/Athlon 64 X2 Dual-Core/Athlon 64 FX processors
- Supports up to 2000 MT/s HyperTransport™ (HT) interface speeds

HyperTransport™ Technology is a point-to-point link between two devices, it enables integrated circuits to exchange information at much higher speeds than currently available interconnect technologies.

Chipset

The RS485 Northbridge (NB) and SB460 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

- RS485 (NB)**
- 1 x2 (expandable to x4) A-Link Express interface (PCI Express 1.0a compliant) for connection to the ATI IXP
 - Supports one PCI Express x16 for Graphics Interface, fully compliant to the PCI Express Specification revision 1.0a.
 - Integrated 2D/3D graphics engine, dual display, and an integrated TV encoder supported
 - Full DirectX 9.0 support (Vertex Shader version 2.0 and Pixel Shader version 2.0)

- SB460 (SB)**
- 2/4-lane A-Link Express II interface to the ATI Northbridge's
 - Compliant with PCI 2.3 specification, up to 6 bus master devices supported
 - Four Serial ATA devices supported, compliant with Serial ATA 1.0 specification, RAID 0 and RAID 1 accommodated
 - Integrated USB 2.0 Host Controllers supporting up to 8 USB 2.0 ports
 - Integrated IDE controller supports Ultra DMA 133/100/66/33 modes

Memory

- DDR2 800/667/533/400 DDR2 SDRAM with Dual Channel supported
- Accommodates two unbuffered DIMMs
- Up to 8 GB per DIMM with maximum memory size up to 16 GB

Audio (Optional)

This motherboard may support either of the following Audio chipset:

- | |
|--|
| <ul style="list-style-type: none"> • 8 channels of DAC support 24/20/16-bit PCM format for 7.1 audio solution • Supports 192K/96K/48K/44.1KHz DAC sample rate • Power support: Digital: 3.3V; Analog: 3.5V~5.25V • Meets Microsoft WHQL/WLP 2.x audio requirements • Direct Sound 3D™ compatible • Dolby® Digital Encoder output for consumer electronic application |
| <ul style="list-style-type: none"> • 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 • Meets Microsoft WHQL/WLP 2.0 audio requirements |

Introducing the Motherboard

1394a FireWire (Optional)

- Fully compliant with provisions of IEEE Std 1394-1995 for a high-performance serial bus and IEEE Std 1394a-2000
- Two IEEE Std 1394a-2000 fully compliant cable ports at 400 Mbit/s

Onboard LAN (Optional)

This motherboard may support either of the following LAN chipset:

<ul style="list-style-type: none"> • Supports 10/100 Mb/s N-Way Auto negotiation operation • Half/Full duplex capability • Supports Wake-On-LAN (WOL) function and remote wake-up
<ul style="list-style-type: none"> • Integrate 10/100/1000 transceiver • Supports PCI v2.3, 32-bit, 33/66 MHz • Supports fully with IEEE802.3, IEEE802.3u and IEEE802.3ab

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 for Graphic Interface
- One PCI Express x1 slot
- Two 32-bit PCI v2.3 compliant slots
- One 40-pin IDE connector supporting up to 2 IDE devices
- One floppy disk drive interface
- Four 7-pin SATA connectors

This motherboard supports UltraDMA bus mastering with transfer rates of 133/100/66/33 MB/s.

Integrated I/O

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

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

BIOS Firmware

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

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

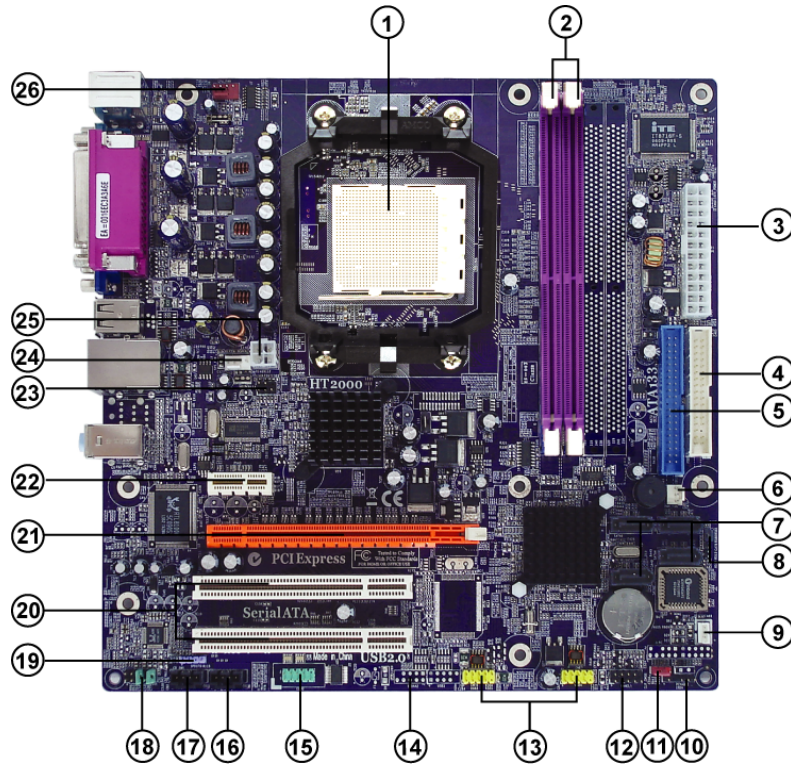
The firmware can also be used to set parameters for different processor clock speeds.



Some hardware specifications and software items are subject to change without prior notice.

Introducing the Motherboard

Motherboard Components



Introducing the Motherboard

Table of Motherboard Components

LABEL	COMPONENT
1 CPU Socket	Socket AM2 for AMD Sempron/Athlon 64/Athlon 64 X2 Dual-Core/Athlon 64 FX processors
2 DIMM1~2	240-pin DDR2 SDRAM slots
3 ATX_POWER	Standard 24-pin ATX power connector
4 FDD	Floppy diskette drive connector
5 IDE1	Primary IDE channel
6 PWR_FAN	Power fan connector
7 BIOS_WP	BIOS protection jumper
8 SATA1~4	Serial ATA connectors
9 WOL1 *	Wake On LAN connector
10 IRDA	Infrared header
11 CLR_CMOS	Clear CMOS jumper
12 PANEL1	Front panel switch/LED header
13 USB3-4	Front Panel USB headers
14 1394A2 *	Onboard 1394a header
15 COM2 *	Onboard serial port header
16 AUXIN1*	Auxiliary In header
17 CD_IN1	Analog audio input connector
18 AUDIO1	Front panel audio header
19 SPDIFO	SPDIF out header
20 PCI1~2	32-bit add-on card slots
21 PCIEX16	PCI Express x16 graphics card slot
22 PCIEX1	PCI Express x1 graphics card slot
23 TV_OUT1*	TV-out header
24 SYS_FAN	System cooling fan connector
25 ATX12V	4-pin +12V power connector
26 CPU_FAN	CPU cooling fan connector

“*” Stands for optional components

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

Memo

Chapter 2

Installing the Motherboard

Safety Precautions

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

Choosing a Computer Case

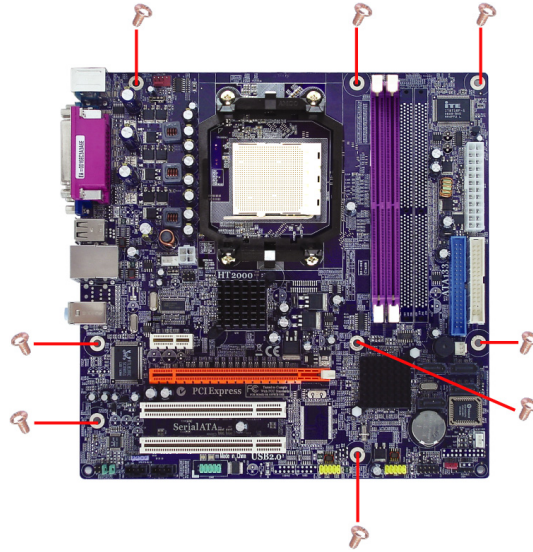
There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro-ATX system case. First, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, 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 a Micro-ATX form factor of 244 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case. Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws. Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



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

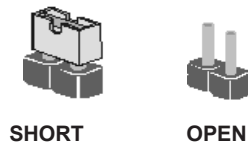
Checking Jumper Settings

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

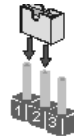
Setting Jumpers

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

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



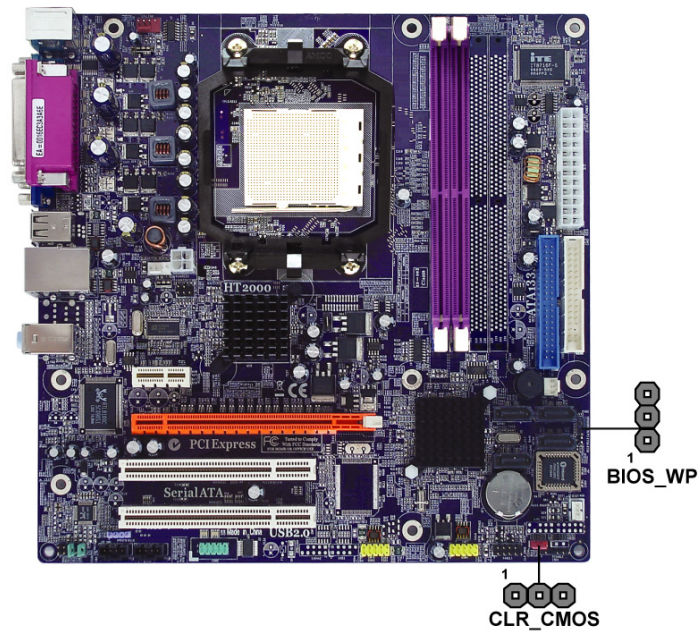
This illustration shows a 3-pin jumper. Pins 1 and 2 are **SHORT**.





Installing the Motherboard

Checking Jumper Settings

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



Jumper Settings

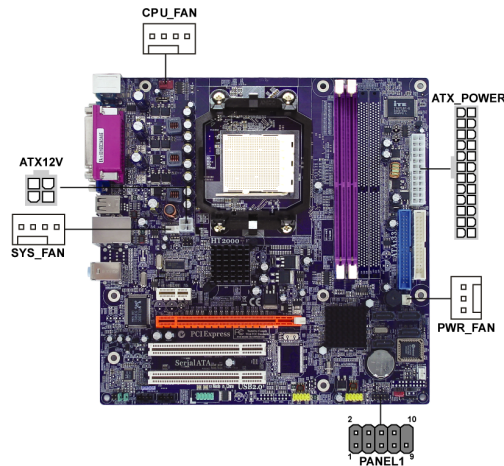
Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CMOS CLEAR Before clearing the CMOS, make sure to turn off the system.	CLR_CMOS  1
BIOS_WP	3-pin	BIOS Write protect	1-2: DISABLE 2-3: ENABLE	BIOS_WP  1

Installing the Motherboard

Connecting Case Components

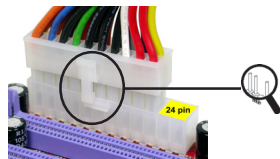
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

- 1 Connect the CPU cooling fan cable to **CPU_FAN**.
- 2 Connect the system cooling fan connector to **SYS_FAN**.
- 3 Connect the power fan connector to **PWR_FAN**.
- 4 Connect the case switches and indicator LEDs to the **PANEL1**.
- 5 Connect the standard power supply connector to **ATX_POWER**.
- 6 Connect the auxiliary case power supply connector to **ATX12V**.



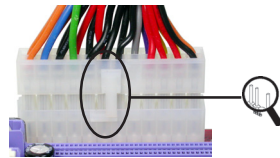
Connecting 20/24-pin power cable

Users please note that the 20-pin and 24-pin power cables can both be connected to the ATX_POWER connector. With the 20-pin power cable, just align the 20-pin power cable with the pin 1 of the ATX_POWER connector. However, using 20-pin power cable may cause the system to become unbootable or unstable because of insufficient electricity. A minimum power of 300W is recommended for a fully-configured system.



20-pin power cable

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



24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable clings to the right side of the ATX_POWER connector latch.

Installing the Motherboard

PWR_FAN: FAN Power Connector

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

CPU_FAN/SYS_FAN: FAN Power Connectors

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.

ATX12V: ATX 12V Power Connector

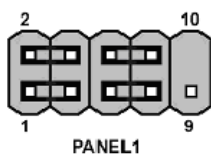
Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

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

Front Panel Connector

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



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 SATA (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

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

Reset Switch

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

Power Switch

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

Installing the Motherboard

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 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.

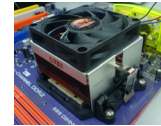
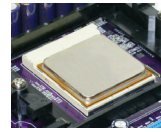
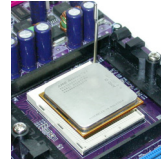
This motherboard has a Socket AM2 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

Installing the Motherboard

CPU Installation Procedure

The following illustration shows CPU installation components.

- 1 Install your CPU. Pull up the lever away from the socket and lift up to 90-degree angle.
- 2 Locate the CPU cut edge (the corner with the pin hold noticeably missing). Align and insert the CPU correctly.
- 3 Press the lever down and apply thermal grease on top of the CPU.
- 4 Put the CPU Fan down on the retention module and snap the four retention legs of the cooling fan into place.
- 5 Flip the levers over to lock the heat sink in place and connect the CPU cooling Fan power cable to the CPUFAN connector. This completes the installation.



To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 4800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

Installing the Motherboard

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin unbuffered DIMM, DDR2 800/667/533/400. The maximum memory capacity is 16 GB.

DDR2 SDRAM memory module table

Memory module	Memory Bus
<i>DDR2 400</i>	<i>200 MHz</i>
<i>DDR2 533</i>	<i>266 MHz</i>
<i>DDR2 667</i>	<i>333 MHz</i>
<i>DDR2 800</i>	<i>400 MHz</i>

You must install at least one module in any of the two slots. Each module can be installed with 8 GB of memory.

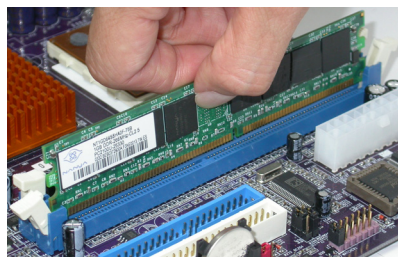


Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

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



Installing the Motherboard

Table A: Supported DDR2 QVL (Qualified Vendor List)

Type	Size	Vendor	Module Name
DDR2 400	256 MB	Hynix	HYMP532U646-E3 AA
		NANYA	NT256T64UH4A0F-5A
		SAMSUNG	M378T3253FG0-CCC
	512 MB	Hynix	HYMP564U648-E3 AA
		SAMSUNG	M378T6553BZO-CCC
DDR2 533	256 MB	A-DATA	M2OHY2F3G3110A1B0Z
		Elixir	M2U25664TUH4A0F-37B
		Infineon	HYS64T32000HU-3.7-A
		Kingston	KVR533D2N4
		Ramaxel	RML 1040M28D5F-533
	512 MB	AENEON	AET660UD00-370A98X
		Infineon	HYS64T64000GU-3.7-A
		Kingston	KVR533D2N4
		KINGSTON	KVR533D2N4/512
		SAMSUNG	M378T6553BGO-CD5
	1 GB	Apacer ELPIDA	E5108AE-6E-E
DDR2 667	256 MB	Micron	MT8HTF3264AY-667B5
	512 MB	CORSAIR	CM2X512-5400C4PRO
		ELIPIDA	EBE52UC8AAFV-DF-E
		NANYA	NT512T64U88A0BY-3C
		Transcend	K4T51083QC
		TwinMOS	8G-25JK5-EBT

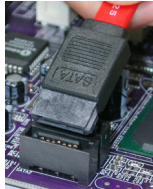
Table B: Unbuffered DIMM Address Timings and Drive Strength for AM2 Package

DRAM Speed	DIMM1¹	DIMM2¹	Timing Mode
DDR2-400	-	Any	1T
DDR2-400	Any	Any	2T
DDR2-533	-	Any	1T
DDR2-533	SRx16	SRx16	2T
	SRx16	SRx8	
	SRx8	SRx16	
DDR2-533	SRx8	SRx8	2T
DDR2-533	DRx8	DRx8	2T
DDR2-533	DRx8	SRx16	2T
	SRx16	DRx8	
DDR2-533	DRx8	SRx8	2T
	SRx8	DRx8	
DDR2-667	-	Any	1T
DDR2-667	SRx16	SRx16	2T
	SRx16	SRx8	
	SRx8	SRx16	
DDR2-667	SRx8	SRx8	2T
DDR2-667	DRx8	DRx8	2T
DDR2-667	DRx8	SRx16	2T
	SRx16	DRx8	
DDR2-667	DRx8	SRx8	2T
	SRx8	DRx8	
DDR2-800	-	Any	2T
DDR2-800	Any	Any	2T

1. *SRx16=Single Rank x16 DIMM*
SRx8=Single Rank x8 DIMM
DRx16=Dual Rank x16 DIMM
DRx8=Dual Rank x8 DIMM

Refer to the illustration below for proper installation:

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



This motherboard does not support the “Hot-Plug” function.

Installing a Floppy Diskette Drive

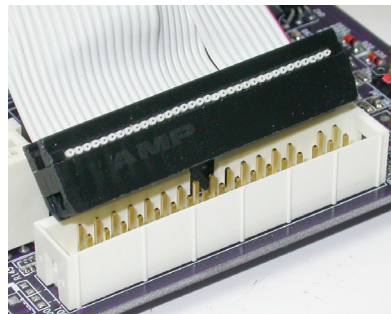
The motherboard has a floppy diskette drive (FDD) interface and ships with a diskette drive ribbon cable that supports one or two floppy diskette drives. You can install a 5.25-inch drive and a 3.5-inch drive with various capacities. The floppy diskette drive cable has one type of connector for a 5.25-inch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



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

FDD: Floppy Disk Connector

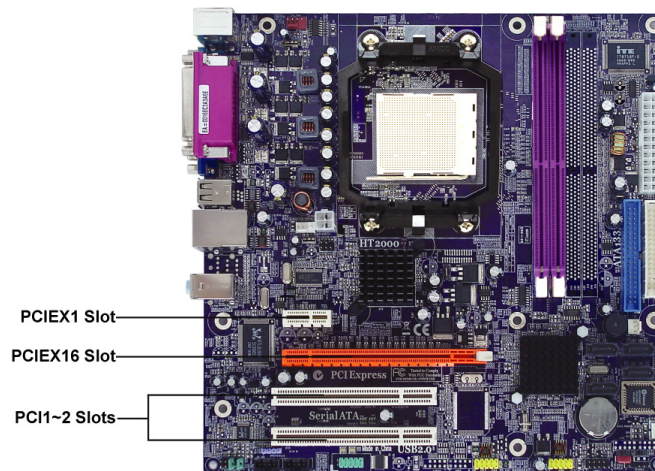
This connector supports the provided floppy drive ribbon cable. After connecting the single end to the onboard floppy connector, connect the remaining plugs on the other end to the floppy drives correspondingly.



Installing the Motherboard

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



- PCIEX16 Slot** The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 1.0a.
- PCIEX1 Slot** The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 1.0a.
- PCI 1~2 Slots** This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

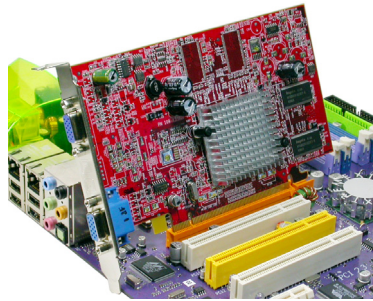


Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Installing the Motherboard

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.

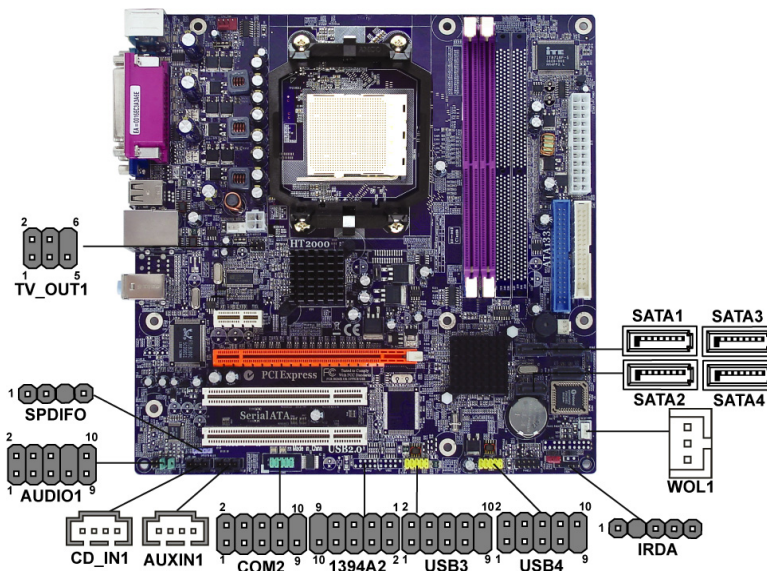


For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Installing the Motherboard

Connecting Optional Devices

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



AUDIO1: Front Panel Audio header (Optional)

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

Pin	Signal Name	Function
1	FMICIN_L	Left Front Microphone input signal
2	AUD_GND	Ground used by Analog Audio Circuits
3	FMICIN_R	Right Front Microphone input signal
4	NC	Not connected
5	LOUTR	Right line out
6	NC	Not connected
7	FMIC_JD	Front microphone jack detect
8	Key	No Pin
9	LOUTL	Left line out
10	FOUT_JD	Front line-out jack detect

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

Installing the Motherboard

USB3/4: Front Panel USB headers

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

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

IrDA: Infrared header

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

Pin	Signal Name
1	VCC
2	No Pin
3	IRRX
4	Ground
5	IRTX

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

Installing the Motherboard

CD_IN1: Analog audio input connector

Pin	Signal Name	Function
1	CDin_R	CD In right channel
2	GND	Ground
3	GND	Ground
4	CDin_L	CD In left channel

SATA1/2/3/4: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest data transfer rates (1.5 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

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

SPDIFO: SPDIF out header

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

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

TV_OUT1: TV-out header (optional)

Users may connect this header to your TV set to achieve the TV-out function.

Pin	Signal Name	Function
1	GND	Ground
2	COMP	Composite
3	LUM	Luminance
4	GND	Ground
5	CHROMA	Chrominance
6	KEY	No pin

AUXIN1: Auxliary In connector (Optional)

Pin	Signal Name	Function
1	AUX_R	AUX In right channel
2	RET_R	Return Right Aux in
3	RET_L	Return Left Aux in
4	AUX_L	AUX In left channel

WOL1: Wake On LAN Connector (Optional)

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

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

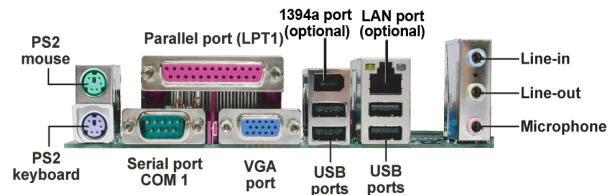
1394A2: Onboard IEEE 1394a header (optional)

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

Pin	Signal Name	Pin	Signal Name
1	TPA+	2	TPA-
3	GND	4	GND
5	TPB+	6	TPB-
7	Cable-Power	8	Cable-Power
9	Key Pin	10	GND

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 (LPT)	Use LPT to connect printers or other parallel communications devices.
Serial Port (COM1)	Use the COM port to connect serial devices such as mice or fax/modems. COM1 is identified by the system as COM1/3.
VGA Port	Connect your monitor to the VGA port.
1394 port (optional)	Use the 1394 port to connect any Firewire device.
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 (Optional)	Use the three audio jacks to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.

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

Installing the Motherboard

Installing the Motherboard

Chapter 3

Using BIOS

About the Setup Utility

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

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

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

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

This chapter provides explanations for Setup Utility options.

The Standard Configuration

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

This Setup Utility should be used:

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

Entering the Setup Utility

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

Updating the BIOS

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

- 1 If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
- 2 If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
- 3 Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
- 4 Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
- 5 Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
- 6 At the A:\ prompt, type the Flash Utility program name and press <Enter>.
- 7 Type the filename of the new BIOS in the "File Name to Program" text box. Follow the onscreen directions to update the motherboard BIOS.
- 8 When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten.

Using BIOS

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

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

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

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

Using BIOS

Standard CMOS Features

This option displays basic information about your system.

Phoenix-AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Wed, Jan 25 2005	Item Help
Time (hh:mm:ss)	9 : 33 : 26	Menu Level ▶
▶ IDE Channel 0 Master	[None]	Change the day, month, year and century
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 2 Slave	[None]	
▶ IDE Channel 3 Master	[None]	
▶ IDE Channel 3 Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Floppy 3 Mode Support	[Disabled]	
Halt On	[All Errors]	
Base Memory	640K	
Extended Memory	489472K	
Total Memory	490496K	

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

Date and Time

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

▶ IDE Devices (None)

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

Press <Enter> to display the IDE submenu:

Phoenix-AwardBIOS CMOS Setup Utility
IDE Channel 0 Slave

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Channel 0 Slave	[Auto]	Menu Level ▶▶
Access Mode	[Auto]	To auto-detect the HDD's size, head... on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

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

IDE HDD Auto-Detection

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



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

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

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

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



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

Access Mode (Auto)

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

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

Drive A (1.44M, 3.5 in.)

These items define the characteristics of any diskette drive attached to the system. You can connect one or two diskette drives.

Floppy 3 Mode Support (Disabled)

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

Halt On (All Errors)

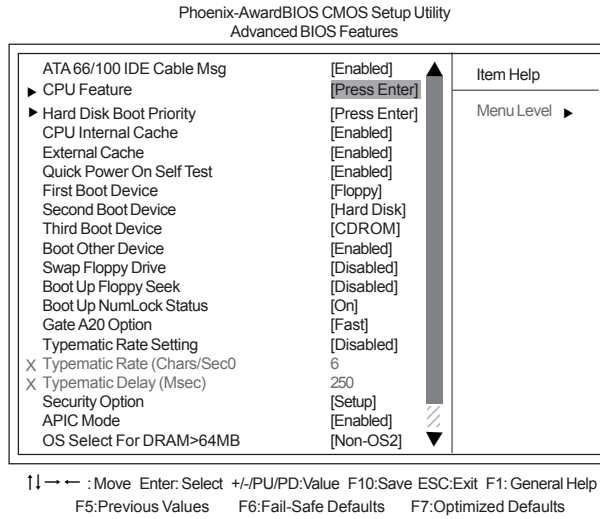
This item defines the operation of the system POST (Power On Self Test) routine. You can use this item to select which types of errors in the POST are sufficient to halt the system.

Base Memory, Extended Memory, and Total Memory

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

Advanced BIOS Features

This option defines advanced information about your system.

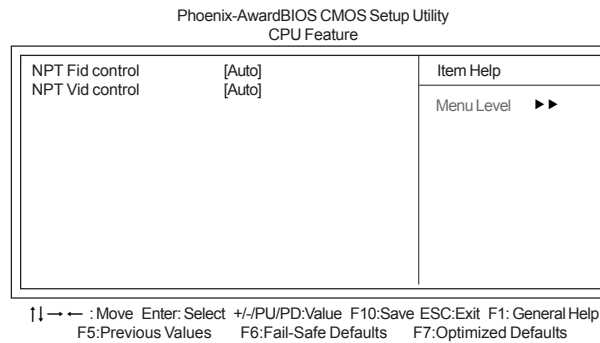


ATA 66/100 IDE Cable Msg. (Enabled)

Enables or disables the ATA 66/100 IDE Cable Msg. This message will appear during reboot when you use 40-pin cable on your 66/100 hard disks.

▶ CPU Feature (Press Enter)

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



NPT Fid control (Auto)

This item allows users to adjust the CPU frequency; the range will be varied according to different CPUs. We strongly recommend you leave this item at its default value.

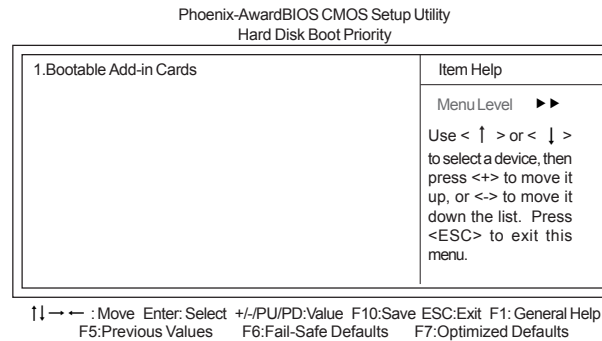
NPT Vid control (Auto)

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

Using BIOS

► Hard Disk Boot Priority (Press Enter)

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



CPU Internal Cache (Enabled)

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

External Cache (Enabled)

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

Quick Power On Self Test (Enabled)

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

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

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

Boot Other Device (Enabled)

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

Swap Floppy Drive [Disabled]

If you have two floppy diskette drives in your system, this item allows you to swap the assigned drive letters so that drive A becomes drive B, and drive B becomes drive A.

Boot Up Floppy Seek (Disabled)

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

Boot Up NumLock Status (On)

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

Gate A20 Option (Fast)

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

Using BIOS

Typematic Rate Setting (Disabled)

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

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

Security Option (Setup)

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

APIC Mode (Enabled)

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

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

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

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

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

Small Logo (EPA) Show (Disabled)

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

Screen Logo Show (Enabled)

This item determines whether the summary system information will be showed during boot-up.

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

Advanced Chipset Features

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

Phoenix-AwardBIOS CMOS Setup Utility
Advanced Chipset Features

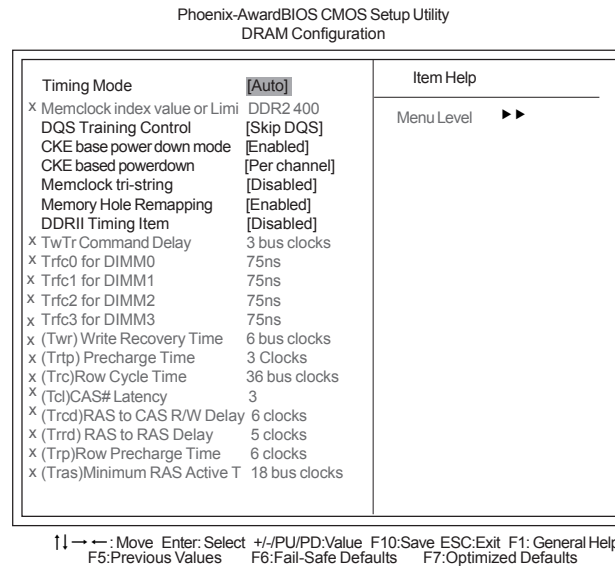
	Item Help
▶ DRAM Configuration	
▶ LDT & PCI Bus Control	
PCIE GFX Core Payload	[64 Bytes]
PCIE GPP Core Payload	[64 Bytes]
GFX0 Link Width	[x16]
GFX Multi Function Mode	[Disabled]
UMA Frame Buffer Size	[32MB]
AGP Aperture Size	[128MB]
GFX Clock Mode	[Sync]
x Async GFX Clock	200MHz
x Async GFX Clock Source	14.318MHz OSC
x MCLK Spread Spectrum	Disabled
x Video Display Devices	[Auto]
TV Standard	[NTSC]
System BIOS Cacheable	[Disabled]
	Menu Level ▶ DRAM timing and control

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

Using BIOS

► DRAM Configuration (Press Enter)

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



Timing Mode (Auto)

This item allows you to set up the DRAM timing manually or automatically.

Memory Clock value or Limi (DDR2 400)

When DDR2 Timing Setting by is set to Manual, use this item to set the DRAM frequency.

DQS Training Control (Skip DQS)

DQS training is used to place the DQS strobe in the center of the data eye.

CKE base power down mode (Enabled)

When in power down mode, if all pages of the DRAMs associated with a CKE pin are closed, then these parts are placed in power down mode. Only pre-charge power down mode is supported, not active power down mode.

CKE based powerdown (Per Channel)

The DRAM channel is placed in power down when all chip selects associated with the channel are idle.

Memclock tri-stating (Disabled)

This item enables or disables memclock tri-stating function.

Memory Hole Remapping (Enabled)

This item allows users to enable or disable memory hole remapping.

DDRII Timing Item (Disabled)

This item enables or disables users to set DRAM timing.

- **TwTr Command Delay (3 bus clocks):** Use this item to specify the Write to Read delay.
- **Trfc 0/1/2/3 for DIMM 0/1/2/3:** Use this item to specify the Row refresh cycle time.

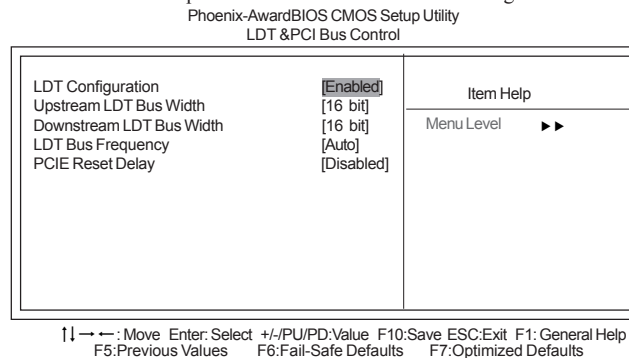
Using BIOS

- **(Twr) Write Recovery Time (3 bus clocks):** Use this item to specify the Write to Read delay.
- **(Trtp) Precharge Time (3 clocks):** Use this item to specify the Precharge Time.
- **(Trc) Row Cycle Time (26 bus clocks):** Use this item to specify the Row Cycle Time.
- **(Tcl) CAS# Latency (3):** This item determines the operation of SDRAM memory CAS(column address strobe). It is recommended that you leave this item at the default value. The 2T setting requires faster memory that specifically supports this mode.
- **(Trcd) RAS to CAS R/W Delay (6 clocks):** This is the amount of time a CAS is performed after a RAS.The lower the better, but some DRAM does not support low figures.
- **(Trrd) RAS to RAS Delay (6 clocks):** This item specifies the active-to-active delay of different banks.
- **(Trp) Row Precharge Time (6 clocks):** This item specifies the Row precharge to Active or Auto-Refresh of the same bank.
- **(Tras) Minimum RAS active Time (18 bus clocks):** This item determines the time RAS takes to read from and write to a memory cell.

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

► LDT & PCI Bus Control (Press Enter)

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



LDT Configuration (Enabled)

This item enables or disables the LDT configuration.

Upstream LDT Bus Width (16 bit)

This item allows users to manually adjust the upstream LDT bus width to be 8 bit or 16 bit.

Downstream LDT Bus Width (16 bit)

This item allows users to manually adjust the downstream LDT bus width to be 8 bit or 16 bit.

LDT Bus Frequency (Auto)

This item allows users to manually adjust the LDT Bus Frequency.

PCIE Reset Delay (Disabled)

This item enables or disables the PCIE reset delay.

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

Using BIOS

PCIE GFX Core Payload Size (64 Bytes)

This item allows users to manually adjust the PCIE GFX Core Payload size.

PCIE GPP Core Payload Size (64 Bytes)

This item allows users to manually adjust the PCIE GPP Core Payload size.

GFX0 Link Width (x16)

This item allows users to manually set the GFX Link Width.

GFX Multi Function Mode (Disabled)

This item allows users to enable or disable the GFX Multi Function Mode.

UMA Frame Buffer Size (32MB)

This item allows users to manually adjust the UMA frame buffer size, from 16MB to 128MB.

AGP Aperture Size (128MB)

This item allows users to manually adjust the AGP aperture size, from 32MB to 2GB.

GFX Clock Mode (Sync)

This item allows users to set the GFX Clock Mode to be Sync or Async. When this item is set to Sync, the following 3 item is activated.

- **Async GFX Clock (200MHz):** This item allows users to manually adjust the GFX clock, from 200MHz to 350MHz.
- **Async GFX Clock Source (14.318MHz OSC):** This item allows users to set the GFX Clock Source, either to be 14.318MHz OSC or 100MHz PCIE.
- **MCLK Spread Spectrum (Disabled):** This item allows users to enable or disable the MCLK spread spectrum function.

Video Display Devices (Auto)

This item allows users to manually select the video display device.

Tv Standard (NTSC)

This item allows users to manually select the TV picture format.

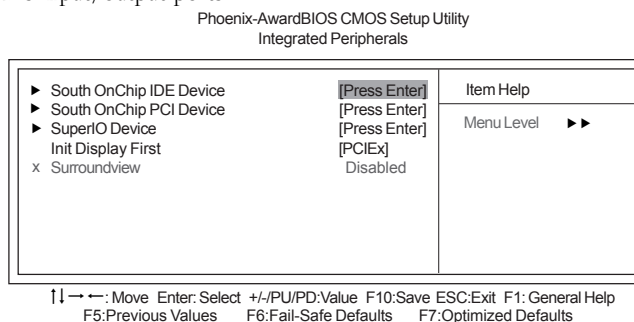
System BIOS Cacheable (Disabled)

This feature is only valid when the system BIOS is shadowed. It enables or disables the caching of the system BIOS ROM at F0000h-FFFFFh via the L2 cache. This greatly speeds up accesses to the system BIOS.

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

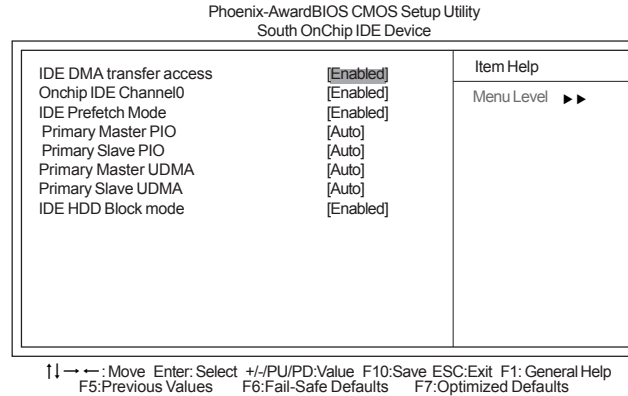
Integrated Peripherals

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

**Using BIOS**

► South OnChip IDE Device (Press Enter)

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



IDE DMA transfer access (Enabled)

This item allows you to enable the transfer access of the IDE DMA then burst onto the PCI bus and nonburstable transactions do not.

OnChip IDE Channel0 (Enabled)

Use this item to enable or disable the PCI IDE channels that are integrated on the motherboard.

IDE Prefetch Mode (Enabled)

The onboard IDE drive interface supports IDE prefetching, for faster drive access. If you install a primary and secondary add-on interface, set this field to Disable if the interface does not support prefetching.

Primary Master/Slave PIO (Auto)

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

Primary Master/Slave UDMA (Auto)

Each IDE channel supports a master device and a slave device. This motherboard supports UltraDMA technology, which provides faster access to IDE devices.

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this motherboard in order to use an UltraDMA device.

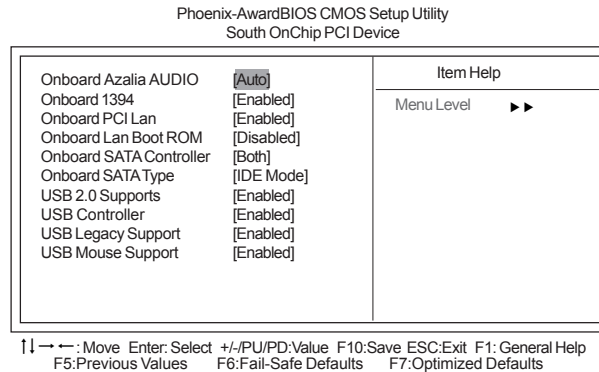
IDE HDD Block Mode (Enabled)

Enable this field if your IDE hard drive supports block mode. Block mode enables BIOS to automatically detect the optimal number of block read and writes per sector that the drive can support. It also improves the speed of access to IDE devices.

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

► South OnChip PCI Device (Press Enter)

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



Onboard Azalia AUDIO (Auto)

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

Onboard 1394 (Enabled)

This option allows you to enable or disable the onboard 1394 function.

Onboard PCI Lan (Enabled)

This option allows you to control the onboard LAN device.

Onboard LAN Boot ROM (Disabled)

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

Onboard SATA Controller (Both)

This item allows you to control Serial ATA controller.

Onboard SATA Type (IDE Mode)

This item allows you to manually specify the onboard Serial ATA Type.

USB 2.0 Supports (Enabled)

Enable this item if your system supports USB 2.0.

USB Controller (Enabled)

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

USB Legacy Support (Enabled)

Use this item to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

USB Mouse Support (Enabled)

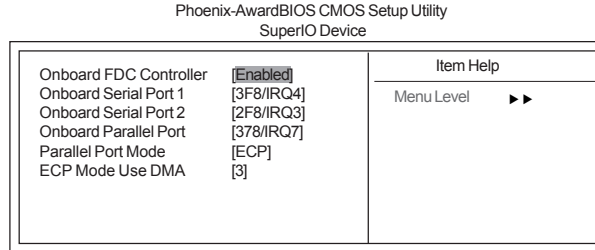
Enable this item if you plan to use a mouse connected through the USB port in a legacy operating system (such as DOS) that does not support Plug and Play.

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

Using BIOS

► SuperIO Device (Press Enter)

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



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

Onboard FDC Controller (Enabled)

This option enables the onboard floppy disk drive controller.

Onboard Serial Port 1/2 (3F8/IRQ4)(2F8/IRQ3)

This option is used to assign the I/O address and interrupt request (IRQ) for onboard serial port 1/2 (COM1/2).

Onboard Parallel Port (378/IRQ7)

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

Parallel Port Mode (ECP)

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

ECP Mode Use DMA (3)

When the onboard parallel port is set to ECP mode, the parallel port can use DMA 3 or DMA 1.

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

Init Display First (PCI Slot)

Use this item to specify whether your graphics adapter is installed in one of the PCI slots or is integrated on the motherboard. If a PCI graphics card is installed, the onboard VGA will be disabled.

Surroundview (Disabled)

This item allows you to enable or disable Surroundview function. Surroundview™ provides the power and convenience of multiadapter, multimonitor support for computers that use an AGP or PCI-E based graphics card in conjunction with ATI integrated graphics processors.

Power Management Setup

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

Phoenix-AwardBIOS CMOS Setup Utility
Power Management Setup

ACPI Suspend Type	[S3(STR)]	Item Help
HDD Power Down	[Disabled]	Menu Level ▶
Video Off Option	[Suspend -> Off]	
Video Off Method	[DPMS Support]	
MODEM Use IRQ	[3]	
Soft-Off by PWRBTN	[Instant-Off]	
PWRON After Pwr-Fail	[Off]	
▶ Resume Event Control	[Press Enter]	

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

ACPI Suspend Type (S3(STR))

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

HDD Power Down (Disabled)

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

Video Off Option (Suspend -> Off)

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

Video Off Method (DPMS Support)

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

MODEM Use IRQ (3)

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

Soft-Off by PWRBTN (Instant Off)

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

PWRON After PWR-Fail (Off)

This item enables your computer to automatically restart or return to its operating status.

Using BIOS

►Resume Event Control (Press Enter)

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

Phoenix-AwardBIOS CMOS Setup Utility
Resume Event Control

Resume By Ring	[Disabled]	Item Help
Resume By PCI PME	[Enabled]	
Resume By PCI-E	[Enabled]	
Resume By USB (S3)	[Disabled]	
Resume By PS/2 Mouse	[Disabled]	
Resume By PS/2 Keyboard	[Disabled]	
x Hot Key Resume	[Ctrl-F1]	Menu Level ►►
RTC Alarm Resume	[Disabled]	
x Date (of Month) Alarm	0	
x Time (hh:mm:ss) Alarm	0 0 0	

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

Resume by Ring (Disabled)

This item specifies whether the system will be awakened from power saving modes when activity or input signal of Ring device is detected.

Resume by PCI-E (Enabled)

This item specifies whether the system will be awakened from power saving modes when inserting PCI-Express card.

Resume by PCI PME (Enabled)

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

Resume by USB (S3) (Disabled)

This option allows the activity of the USB devices to wake up the system from S3 sleep state.

Resume by Mouse (Disabled)

This option allows the activity of the mouse device to wake up the system from sleeping status.

Resume by Keyboard (Disabled)

This option allows the activity of the keyboard device to wake up the system from sleeping status.

- **Hot Key Resume (Ctrl-F1):** Use this item to define the password when using the keyboard "hot key" to resume the system.

RTC Alarm Resume (Disabled)

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

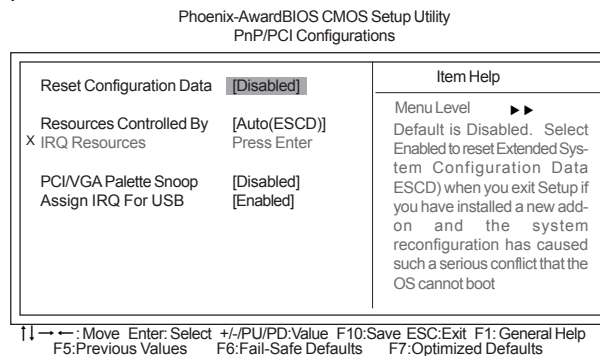
- **Date of Month:** Use this item to define the date of month when using the RTC alarm to resume the system.
- **Resume Time:** Use this item to define the time when using the RTC alarm to resume the system.

Press <Esc> to return to the Power Management Setup screen.

Using BIOS

PNP/PCI Configurations

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



Reset Configuration Data [Disabled]

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

Resources Controlled By Auto [Auto(ESCD)]

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

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

- **IRQ Resources [Press Enter]:** In the IRQ Resources submenu, if you assign an IRQ to Legacy ISA, then that Interrupt Request Line is reserved for a legacy ISA expansion card. Press <Esc> to close the IRQ Resources submenu.

PCI/VGA Palette Snoop [Disabled]

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

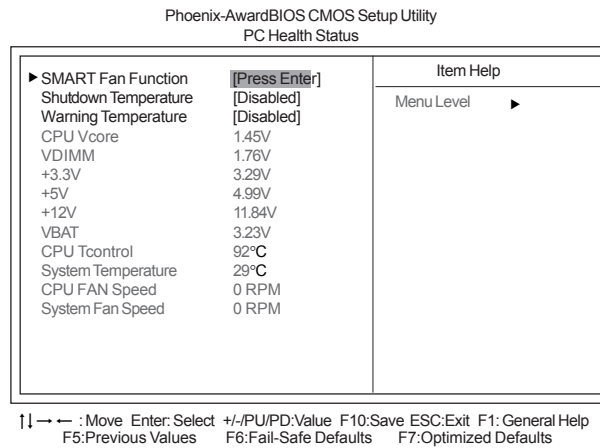
Assign IRQ For USB [Enabled]

Names the interrupt request (IRQ) line assigned to the USB on your system. Activity of the selected IRQ always awakens the system.

Using BIOS

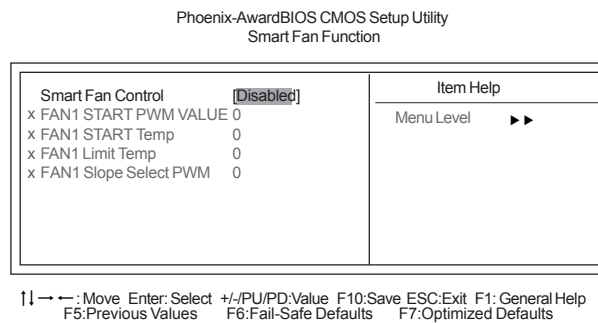
PC Health Status

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



▶ Smart Fan Function (Press Enter)

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



SMART Fan Control (Disabled)

Press Ctrl + F1 to show this item. This item allows you to enable/disable the control of the system fan speed by changing the fan voltage.

Fan1 start PWM value (0)

Press Ctrl + F1 to show this item. This item displays the PWM value smart fan starts.

Fan1 start Temp. ° C (0)

Press Ctrl + F1 to show this item which specifies the temperature value smart fan starts. When the CPU temperature is lower than the value, the fan will function at start PWM value.

FAN1 Limit Temp. ° C (0)

Press Ctrl + F1 to show this item. This item specifies the slope PWM value of smart fan.

Using BIOS

FAN1 Slope PWM value (0)

Press Ctrl + F1 to show this item. This item specifies the slope PWM value of smart fan.

Press <Esc> to return to the PC Health Status screen.

Shutdown Temperature (Disabled)

This item enables or disables you to set the maximum temperature the system can reach before powering down.

Warning Temperature (Disabled)

This item allows users to manually set the warning temperature of the system.

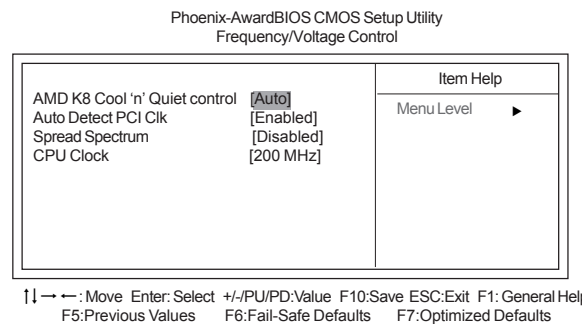
System Component Characteristics

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

- CPU Vcore
- VDIMM
- +3.3V
- +5V
- +12V
- VBAT
- CPU Tcontrol
- System Temperature
- CPU Fan Speed
- System Fan Speed

Frequency/Voltage Control

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

**AMD K8 Cool 'n' Quiet control (Auto)**

This item helps the system to lower the frequency when CPU idles. When the frequency decreases, the temperature will drop automatically as well.

Auto Detect PCI Clk (Enabled)

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

Spread Spectrum (Disabled)

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

CPU Clock (200 MHz)

This item allows users to manually adjust the CPU clock.

Using BIOS

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

Set Supervisor/User Password

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

ENTER PASSWORD

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

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

PASSWORD DISABLED

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

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

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

Save & Exit Setup

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

Exit Without Saving

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



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

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

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.



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

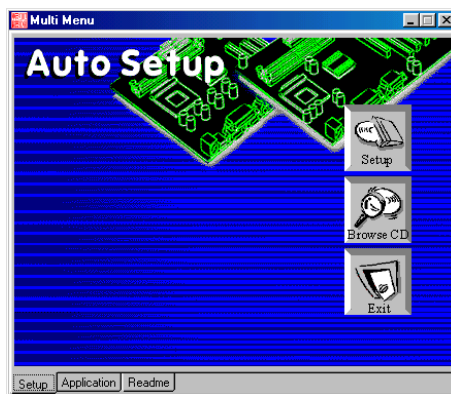
Auto-installing under Windows 2000/XP

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



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

The support software CD-ROM disc loads automatically under Windows 2000/XP. When you insert the CD-ROM disc in the CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



If the opening screen does not appear; double-click the file “setup.exe” in the root directory.

Using the Motherboard Software

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	<p>The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support CD.</p> <p>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.</p> <p>Some software is installed in separate folders for different operating systems.</p> <p>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.</p>
Exit	The EXIT button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the CD.

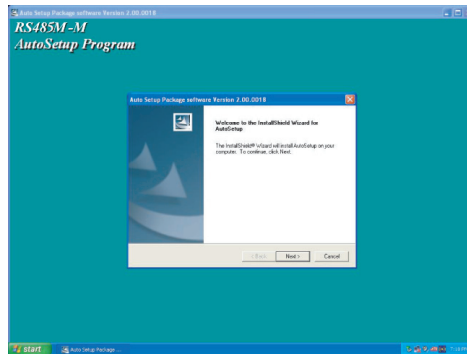
Read Me Tab

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:

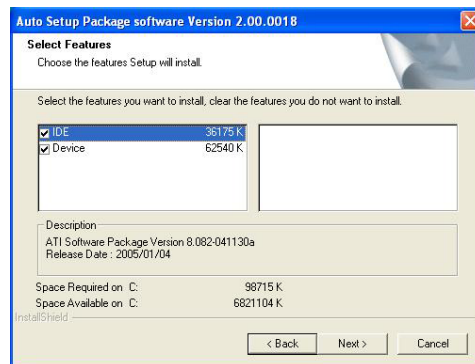


The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

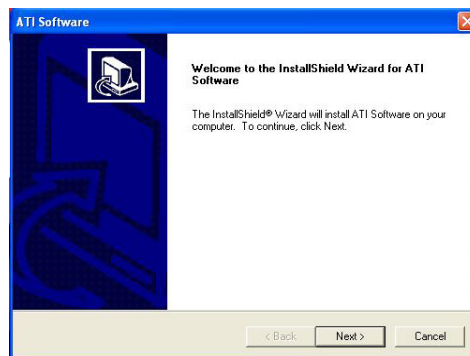
The motherboard identification is located in the upper left-hand corner.

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.

Using the Motherboard Software

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

This concludes Chapter 4.

Caractéristiques

Processeur

Cette carte mère utilise un socket AM2 ayant les caractéristiques suivantes :

- Peut recevoir les processeurs AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Prend en charge des vitesses d'interface HyperTransport™ (HT) allant jusqu'à 2000MT/s

La Technologie HyperTransport™ est une liaison point à point entre deux matériels, elle permet à des circuits intégrés d'échanger des informations à des vitesses bien plus élevées que ne le permettent les technologies à interconnexions actuellement disponibles.

Chipset

Les chipsets RS485 Northbridge (NB) et SB460 Southbridge (SB) sont basés sur une architecture novatrice et dimensionnable avec une fiabilité et des performances prouvées.

- RS485 (NB)**
- 1 x2 (extensible à x4) interface A-Link Express (conforme PCI Express 1.0a) pour connexion à la ATI IXP
 - Prend en charge un PCI Express x16 pour interface graphique, entièrement conforme à la spécification PCI Express révision 1.0a.
 - Moteur graphique 2D/3D intégré, double affichage, et un encodeur TV intégré pris en charge
 - Prise en charge de DirectX 9.0 complète (Vertex Shader version 2.0 et Pixel Shader version 2.0)
- SB460 (SB)**
- Interface 2/4-lane A-Link Express II au Northbridge ATI
 - Conforme aux spécifications PCI 2.3, jusqu'à 6 périphériques maîtrise de bus pris en charge
 - Quatre périphériques Serial ATA pris en charge, conforme aux spécifications Serial ATA 1.0, RAID 0 et RAID 1 accommodés
 - Contrôleur d'Hôte USB 2.0 intégré prenant en charge jusqu'à huit ports USB 2.0
 - Contrôleur IDE intégré prenant en charge les modes Ultra DMA 133/100/66/33

Mémoire

- SDRAM DDR2 800/667/533/400 DDR2 avec double canal pris en charge
- Reçoit deux DIMM sans tampon
- Jusqu'à 8 Go par DIMM avec une taille de mémoire maximum de 16 Go

Audio (Optionnel)

Cette carte mère prend en charge les chipsets Audio suivants:

- 8 canaux de format PCM 24/20/16-bits de support DAC pour solution audio 7.1
- Supporte la vitesse d'échantillonnage DAC de 192K/96K/48K/44,1KHz
- Support d'alimentation : Numérique : 3,3V; Analogique : 3,5V~5,25V
- Conforme aux exigences audio de Microsoft WHQL/WLP 2.x
- Compatible Direct Sound 3D™
- Sortie d'encodeur Dolby® Digital pour application électronique consommateur

- Conforme aux spécifications AC'97 2.3
- Prend en charge le CODEC audio 6 canaux destiné aux systèmes multi-média PC
- Offre trois entrées stéréo de niveau de ligne analogique avec contrôle de volume 5 bits: Ligne d'entrée, CD, AUX
- Conforme aux exigences audio de Microsoft WHQL/WLP 2.0

1394a FireWire (Optionnel)

- Entièrement conforme avec provisions de IEEE Std 1394-1995 pour les bus série de hautes performances et IEEE Std 1394a-2000
- Deux ports de câble entièrement conforme IEEE Std 1394a-2000 à 400M bits/s

LAN interne (Optionnel)

Cette carte mère prend en charge les chipsets LAN suivants :

<ul style="list-style-type: none"> • Supporte le fonctionnement en Auto-négociation N-Way en 10/100Mb/s • Prend en charge la capacité half/full duplex • Prend en charge la fonction Wake-On-LAN (WOL) (réveil par appel réseau) et le réveil à distance
<ul style="list-style-type: none"> • Émetteur-récepteur 10/100/1000 intégré • Prend en charge PCI v2.3, 32 bits, 33/66-MHz • Prise en charge totale de IEEE802.3, IEEE802.3u et IEEE802.3ab

Options d'extension

La carte mère est livrée avec les options d'extensions suivantes:

- Un PCI Express x16 pour Interface Graphique
- Un logement PCI Express x1
- Deux emplacements PCI v2.3 bits
- Un connecteur IDE de 40 broches prenant en charge jusqu'à 2 périphériques IDE
- Une interface de lecteur de disquette
- Quatre connecteurs SATA à 7 broches

La carte mère prenant en charge la maîtrise de bus UltraDMA avec vitesses de transfert de 133/100/66/33 Mo/s.

E/S intégrées

La carte mère possède un jeu complet de ports d'E/S et de connecteurs:

- Deux ports PS/2 pour souris et clavier
- Un port série
- Un port parallèle
- Un port VGA
- Quatre ports USB
- Un port 1394a (optionnel)
- Un port LAN (optionnel)
- Prises audio pour microphone, ligne d'entrée et ligne de sortie

Microprogramme BIOS

La carte mère utilise Award BIOS qui permet aux utilisateurs de configurer de nombreuses caractéristiques du système comprenant les suivantes:

- Gestion de l'alimentation
- Alarmes de réveil
- Paramètres de CPU
- Synchronisation du CPU et de la mémoire

Le microprogramme peut aussi être utilisé pour définir les paramètres pour les vitesses d'horloges de différents processeurs.



Certaines spécifications matérielles et éléments de logiciels peuvent être modifiés sans avertissement.

Feature

Prozessor

Dieses Mainboard verwendet einen AM2-Sockel mit den folgenden Eigenschaften:

- Nimmt AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core Prozessoren auf
- Unterstützt bis zu 2000MT/s HyperTransport™(HT) Interface-Geschwindigkeiten

HyperTransport™ Technologie ist ein Punkt-zu-Punkt Link zwischen zwei Geräten. Es ermöglicht integrierten Schaltkreisen einen Informationsaustausch mit wesentlich höherer Geschwindigkeit als bei gängigen Interconnect-Technologien.

Chipsatz

Die RS485 Northbridge (NB) und SB460 Southbridge (SB) Chipsätze basieren auf einer innovativen und skalierbaren Architektur mit bewiesener Zuverlässigkeit und Leistung.

- RS485(NB)**
- 1 x2 (auf x4 erweiterbar) A-Link Express Interface (entspricht PCI Express 1.0a) für die Verbindung zu ATI IXP
 - Unterstützt eine PCI Express x16 für Graphics Schnittstelle, vollständige Entsprechung zu den PCI Express Spezifikationen Revision 1.0a.
 - Integrierter 2D/3D-Grafikengine, Unterstützung für Dual-Display und einen integrierten TV-Encoder
 - Vollständige Unterstützung für DirectX 9.0 (Vertex Shader Version 2.0 und Pixel Shader Version 2.0)
- SB460 (SB)**
- 2/4-Lane A-Link Express II Schnittstelle zum ATI Northbridge
 - Entspricht PCI 2.3 Spezifikation, es werden bis zu 6 Busmaster-Geräte unterstützt
 - Unterstützung für vier Serial ATA-Geräte, entspricht Serial ATA 1.0 Spezifikation, nimmt RAID 0 und RAID 1 auf
 - Integrierter USB 2.0 Host-Controller unterstützt bis zu acht USB 2.0 Ports
 - Integrierter IDE-Controller unterstützt Ultra DMA 133/100/66/33 Modi

Speicher

- Unterstützung für DDR2 800/667/533/400 DDR2 SDRAM mit Dualkanal
- Es können zwei ungepufferte DIMMs aufgenommen werden.
- Bis zu 8 GB pro DIMM mit maximaler Speicherkapazität von bis zu 16 GB.

Audio (Optional)

Dieses Mainboard kann einen der folgenden Audio-Chipsätze unterstützen:

- 8-Kanal DAC Unterstützung 24/20/16-Bit PCM-Format für 7.1 Audio
- Unterstützt 192K/96K/48K/44.1KHz DAC Abtastrate
- Netzteilunterstützung: Digital: 3,3V; Analog: 3,5V~5,25V
- Entspricht den Anforderungen von Microsoft WHQL/WLP 2.x
- Kompatibel mit Direct Sound 3D™
- Dolby® Digital Encoderausgang für Endverbrauchergeräte

- Entspricht AC'97 2.3 Spezifikationen
- 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
- Entspricht den Microsoft WHQL/WLP 2.0 Audio-Anforderungen

1394a FireWire (Optional)

- Vollständige Entsprechung zu den Vorschriften des IEEE Std 1394-1995 für den Hochleistungs-Serial-Bus und IEEE Std 1394a-2000
- Zwei vollständig IEEE Std 1394a-2000 konforme Kabelports bei 400M Bits/s

Integriertes LAN (optional)

Dieses Mainboard kann einen der folgenden LAN-Chipsätze unterstützen:

<ul style="list-style-type: none"> • Unterstützt den Betrieb bei 10/100Mb/s N-Way Auto-Negotiation • Unterstützt Halb-/Vollduplex • Unterstützt Wake-On-LAN-Funktion und Remote-Wake-up
<ul style="list-style-type: none"> • Enthält 10/100/1000 Transceiver • Unterstützung von PCI v2.3, 32-Bit, 33/66-MHz • Vollständige Unterstützung für IEEE802.3, IEEE802.3u und IEEE802.3ab

Erweiterungsoptionen

Das Mainboard bietet die folgenden Erweiterungsoptionen:

- Ein PCI-Express x16 für eine Grafikschnittstelle
- Ein PCI Express x1 Steckplatz
- Zwei 32-bit PCI v2.3-Steckplätze
- Ein 40-Pin IDE-Stecker, der bis zu 2 IDE-Geräte unterstützt
- Ein Steckplatz für ein Diskettenlaufwerk
- Vier 7-Pin SATA-Stecker

Das Mainboard unterstützt UltraDMA Bus Mastering mit einer Übertragungsrate von 133/100/66/33 MB/Sek.

Integrierte I/O-Schnittstellen

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

- Zwei PS/2-Schnittstellen für Tastatur und Maus
- Eine serielle Schnittstelle
- Eine parallele Schnittstelle
- Eine VGA- Schnittstelle
- Vier USB-Schnittstellen
- Eine 1394a-Schnittstelle (optional)
- Eine LAN-Schnittstelle (optional)
- Audiobuchsen für Mikrofon, Line-In und Line-Out

BIOS Firmware

Dieses Mainboard setzt das AWARD BIOS ein, mit dem der Anwender viele Systemeigenschaften selbst konfigurieren kann, einschließlich der folgenden:

- Energieverwaltung
- Wake-up Alarm
- CPU-Parameter
- CPU- und Speichertiming

Mit der Firmware können auch Parameter für verschiedene Prozessortaktgeschwindigkeiten eingestellt werden.



Einige Hardware- und Software-Spezifikationen können jederzeit und ohne vorherige Ankündigung geändert werden.

Caratteristiche

Processore

La scheda madre utilizza una presa AM2 pin che offre le seguenti caratteristiche:

- Compatibilità con processori AMD Sempron/Athlon 64/Athlon 64 FX/Athlon64 X2 Dual-Core
- Supporto di velocità di interfaccia HyperTransport™ (HT) fino a 2000 MT/s

La tecnologia HyperTransport™ consente il collegamento point-to-point fra due dispositivi e quindi un trasferimento di informazioni tra circuiti integrati molto più veloce di quanto sia possibile con le attuali tecnologie di interconnessione.

Chipset

I chipset RS485 Northbridge (NB) e SB460 Southbridge (SB) sono basati su un'innovativa architettura scalabile e offrono collaudata affidabilità e prestazioni comprovate.

- RS485 (NB)**
- 1 interfaccia Express A-Link x2 (espandibile a x4), conforme a PCI Express 1.0a, per collegamenti a ATI IXP
 - Supporto di una PCI Express x16 per interfaccia grafica con conformità completa alla revisione 1.0a della specifica PCI Express
 - Motore grafico 2D/3D integrato, doppio display e supporto di encoder TV integrato
 - Supporto completo di DirectX 9.0 (Vertex Shader versione 2.0 e Pixel Shader versione 2.0)

- SB460 (SB)**
- Interfaccia A-Link Express II a 2/4 corsie al Northbridge ATI
 - Conforme alla specifica PCI 2.3 a 33 MHz, con supporto di fino a 6 periferiche master bus
 - Supporto di quattro periferiche ATA seriali, conforme alla specifica Serial ATA 1.0, compatibile con RAID 0 e RAID 1
 - Controller host USB 2.0 integrato con supporto di fino a otto porte USB 2.0
 - Controller IDE integrato con supporto di modalità Ultra DMA 133/100/66/33

Memoria

- Supporto di SDRAM DDR2 800/667/533/400 con Dual Channel
- Alloggia due DIMM unbuffered
- Dimensione massima della DIMM pari ad 8 GB per un ammontare massimo di 16 GB di memoria

Audio (Opzionale)

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

- 8 canali per formato PCM a 24/20/16 bit con supporto DAC per soluzioni audio 7.1
- Supporto di velocità di campionamento DAC a 192K/96K/48K/44,1 KHz
- Supporto alimentazione: Digitale: 3,3 V; Analogico: 3,5 V ~ 5,25 V
- Megfelel a Microsoft WHQL/WLP 2.x audio követelményeire
- Compatibile con Direct Sound 3D™
- Uscita Dolby® Digital Encoder per apparecchiature elettroniche di largo consumo

- Conforme alle specifiche AC'97 2.3
- Supporto di CODEC audio a 6 canali per sistemi PC multimediali
- Tre ingressi analogici stereo lineari con controllo volume a 5 bit: Line-In, CD, AUX
- Conforme ai requisiti audio di WHQL e WLP 2.0 di Microsoft

FireWire 1394a (Opzionale)

- Conformità completa a disposizioni IEEE Std 1394-1995 per bus seriale a elevate prestazioni e IEEE Std 1394a-2000
- Due porte cable a 400M bit/s conformi a IEEE Std 1394a-2000

LAN integrata (Opzionale)

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

<ul style="list-style-type: none"> • Supporto di NWay Auto-negotiation a 10/100 Mb/s • Supporto di funzionalità half/full duplex • Supporto di funzionalità Wake-On-LAN e riattivazione remota del sistema
<ul style="list-style-type: none"> • Transceiver 10/100/1000 integrato • Supporta PCI v2.3, 32-bit, 33/66-MHz • Supporto completo degli standard IEEE802.3, IEEE802.3u e IEEE802.3ab

Opzioni di espansione

La scheda madre è dotata delle seguenti opzioni di espansione:

- Un PCI Express x16 per interfaccia grafica
- Uno slot PCI Express x1
- Due slot PCI v2.3 a 32 bit
- Un connettore IDE a 40 pin per il supporto di fino a 2 dispositivi IDE
- Un'interfaccia per unità disco floppy
- Quattro connettori SATA a 7 pin

La scheda madre supporta bus master UltraDMA con tasso di trasferimento di 133/100/66/33 MB/s.

I/O integrati

La scheda madre offre una serie completa di porte e connettori I/O:

- Due porte PS/2 per mouse e tastiera
- Una porta seriale
- Una porta parallela
- Una porta VGA
- Quattro porte USB
- Una porta 1394a (opzionale)
- Una porta LAN (opzionale)
- Prese jack audio per microfono, line-in e line-out

Firmware BIOS

La scheda madre si avvale del BIOS AWARD che consente la configurazione personalizzata di molte funzionalità del sistema, tra cui:

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

Il firmware consente inoltre di impostare i parametri per diverse velocità di clock del processore.



Alcune specifiche hardware e voci di software possono essere modificate senza preavviso.

Característica

Procesador

Esta placa principal usa Socket AM2 que ofrece las sigtes. características:

- Acomoda procesadores AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Soporta hasta las velocidades de interfaz 2000 MT/s HyperTransport™ (HT)

La Tecnología HyperTransport™ es un vínculo punto a punto entre dos dispositivos, habilita circuitos integrados para intercambiar la información en velocidades más rápidas que las tecnologías de interconexión disponibles actualmente.

Chipset

El chipset RS485 Northbridge (NB) y SB460 Southbridge (SB) se basan de una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

RS485 (NB)

- 1 interfaz x2 (expansible a x4) A-Link Express (conformidad PCI Express 1.0a) para conectar al ATI IXP
- Soporta un PCI Express x16 para la Interfaz de Gráficas, totalmente conforme con la Especificación PCI Express revisión 1.0a.
- Motor de gráficas 2D/3D integrada, muestra dual, y un decodificador de TV integrado soportado.
- Soporte total de DirectX 9.0 (Vertex Shader versión 2.0 y Pixel Shader versión 2.0)

SB460 (SB)

- Interfaz 2/4-lane A-Link Express II para el ATI Northbridge
- Conformidad con la especificación PCI 2.3, hasta dispositivos másters de bus 6 soportados
- Cuatro dispositivos Serial ATA soportados, conformidad con la especificación Serial ATA 1.0, acomodando RAID 0 y RAID 1
- Controlador Anfitrión USB 2.0 integrado que soporta hasta ocho puertos USB 2.0
- Controlador IDE integrado que soporta los modos Ultra DMA 133/100/66/33

Memoria

- DDR2 800/667/533/400 DDR2 SDRAM con soporte de Canal Dual
- Acomoda dos DIMMS sin buffer
- Hasta 8 GB por DIMM con el tamaño de memoria máximo hasta 16 GB

Audio (optativo)

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

- 8 canales de formato PCM de 24/20/16-bit de soporte DAC para la solución de audio 7.1
- Soporta índice de muestreo DAC 192K/96K/48K/44.1KHz
- Soporte de suministro: Digital: 3.3V; Analógico: 3.V~5.25V
- Satisface los requisitos de audio de Microsoft WHQL/WLP 2.x
- Compatible con Direct Sound 3D™
- Salida de Decodificador Digital Dolby® para la aplicación de los electrónicos de consumo

- Conformidad con las especificaciones AC'97 2.3
- Soporta CODEC de audio de 6 canales diseñados para los sistemas multimedia
- Provee tres entradas en estéreo a nivel de línea analógicas con control de volumen de 5-bit: Line-in, CD, AUX
- Satisface los requisitos de audio de Microsoft WHQL/WLP 2.0

1394a FireWire (optativo)

- Conformidad total con las provisiones de IEEE Std 1394-1995 para un bus serial de alto rendimiento y IEEE Std 1394a-2000
- Dos puertos de cable con conformidad total de IEEE Std 1394a-2000 en 400M bits/s

LAN Abordo (optativo)

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

<ul style="list-style-type: none">• Soporta operación de Autonegociación N-Way de 10/100Mb/s• Soporta capacidad duplex medio/completo• Soporta la función Wake-On-LAN y despertar remoto
<ul style="list-style-type: none">• Transceptor 10/100/1000 integrado• Soporta PCI v2.3, 32-bit, 33/66-MHz• Soporte total de IEEE802.3, IEEE802.3u y IEEE802.3ab

Opciones de Expansión

La placa principal viene con las sigtes. opciones de expansión:

- Un PCI Express x16 para la Interfaz de Gráficas
- Una ranura PCI Express x1
- Dos ranuras conforme con 32-bit PCI v2.3
- Un conector IDE de 40-pin soporta hasta 2 dispositivos IDE
- Una interfaz de la unidad de disco floppy
- Cuatro conectores SATA de 7-pin

La placa principal soporta el mastering de bus UltraDMA con índices de transferencia de 133/100/66/33 MB/s.

I/O Integrado

La placa principal tiene un juego completo de puertos y conectores I/O:

- Dos puertos PS/2 para ratón y teclado
- Un puerto serial
- Un puerto paralelo
- Un puerto VGA
- Cuatro puertos USB
- Un puerto 1394a (optativo)
- Un puerto LAN (optativo)
- Clavijas de audio para micrófono, entrada y salida de línea

BIOS Firmware

La placa principal usa AWARD BIOS que habilita usuarios para configurar muchas características de sistema que incluyen las sigtes:

- Administración de Alimentación
- Alarmas para despertar
- Parámetros de CPU
- Cronometraje de CPU y de memoria

También se lo puede usar el firmware para configurar los parámetros para diferentes velocidades de reloj de procesador.



Algunas especificaciones de hardware e ítems de software son sujetos a cambio sin aviso previo.

Características

Processador

Esta motherboard usa Ficha AM2 que possui as seguintes características:

- Acomoda processadores AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Suporta velocidades de interface de HyperTransport™ (HT) até 2000MT/s

Tecnologia de HyperTransport™ Té um link ponto-a-ponto entre dois dispositivos, permite circuitos integrados para trocar informação a velocidades muito mais elevadas que as disponíveis actualmente em tecnologias de interconexão.

Conjunto de Chips

O conjunto de chips RS485 Northbridge (NB) e SB460 Southbridge (SB) é baseado numa arquitectura inovadora e escalável com fiabilidade e performance provadas.

RS485 (NB)

- 1 x2 (expansível para x4) interface A-Link Express (compatível com PCI Express 1.0a) para ligação ao ATI IXP
- Suporta um PCI Express x16 para Interface de Gráficos, totalmente compatível coma revisão 1.0a da Especificação PCI Express.
- Dispositivo de gráficos integrado 2D/3D, visor duplo, e um codificador de TV integrado suportado
- Suporte completo DirectX 9.0 (Vertex Shader versão 2.0 e Pixel Shader versão 2.0)

SB460 (SB)

- Interface 2/4-lane A-Link Express II à ATI Northbridge
- Cumpre com a especificação 2.3 PCI, suporta até 6 dispositivos bus mestre
- Suporta quatro dispositivos ATA de Série, cumprindo com a especificação 1.0 ATA de Série, RAID 0 e RAID 1 acomodados
- Controlador Host 2.0 USB Integrado suportando até oito portas USB 2.0
- Controlador IDE integrado que suporta modos Ultra DMA 133/100/66/33

Memória

- DDR2 800/667/533/400 DDR2 SDRAM com suporte de Bicanal
- Acomoda dois DIMMs sem buffers
- Até 8 GB por DIMM com tamanho de memória máxima de até 16 GB

Áudio(opcional)

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

- Formato 24/20/16-bit PCM com suporte DAC de 8 canais para solução áudio 7.1
- Suporta taxa de amostragem DAC 192K/96K/48K/44.1KHz DAC
- Suporte de potência: Digital: 3.3V; Analógica: 3.5V~ 5.25V
- Cumpre com os requisitos áudio WHQL/WLP 2.x da Microsoft
- Compatível com Direct Sound 3D™
- Saída de codificador Dolby® Digital para aplicação electrónica de consumidor

- Cumpre com as especificações AC'97 2.3
- Suporta CODEC áudio com 6 canais concebido para sistemas multimédia para PC
- Fornece três entradas estéreo nível de linha analógicas com controlo de volume de 5 bits: Line-in, CD, AUX
- Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft audio

1394a FireWire (opcional)

- compatível com provisões de IEEE Std 1394-1995 para um bus de série de elevada performance e IEEE Std 1394a-2000
- Duas portas para cabo totalmente compatíveis com IEEE Std 1394a-2000 a 400M bits/s

Onboard LAN (opcional)

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

<ul style="list-style-type: none">• Suporta operação de Auto-negociação N-Way 10/100Mb/s• Suporta capacidade de duplex pela metade/ou na totalidade• Suporta função LAN de Despertar e despertar remoto
<ul style="list-style-type: none">• Transreceptor integrado 10/100/1000• Suporta PCI v2.3, 32-bit, 33/66-MHz• Suporta na totalidade IEEE802.3, IEEE802.3u e IEEE802.3ab

Opções de Expansão

A motherboard é fornecida com as seguintes opções de expansão:

- Um PCI Express x16 para Interface de Gráficos
- Uma ranhura PCI Express x1
- Dois ranhuras compatíveis com PCI v2.3 de 32 bits
- Um conector IDE de 40 pinos suportando até 2 dispositivos IDE
- Um interface com drive de disco flexível
- Quatro conectores SATA de 7 pin

A motherboard suporta um domínio bus UltraDMA bus com taxas de Transferência de 133/100/66/33 MB/s.

I/O Integrado

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

- Duas portas PS/2 para rato e teclado
- Uma porta de série
- Uma porta paralela
- Uma porta VGA
- Quatro portas USB
- Uma porta 1394a (opcional)
- Uma porta LAN (opcional)
- Fichas áudio para microfone, entrada de linha e saída de linha

Microprogramação BIOS

Esta motherboard usa AWARD BIOS que permitem aos utilizadores configurar muitas características do sistema incluindo as seguintes:

- Gestão de corrente
- Alarmes de despertar
- Parâmetros CPU
- Temporização de memória e CPU

A microprogramação poderá ser também usada para estabelecer parâmetros para diferentes velocidades de relógio do processador.



Algumas especificações de hardware e itens de software poderão ser sujeitos a alterações sem aviso prévio.

Multi-Language Translation

機能

プロセッサ

このマザーボードには、次の機能を持ったソケット AM2があります：

- AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core プロセッサの搭載に対応
- 転送率が最大2000MT/秒までの HyperTransport™ (HT)インターフェースを採用

HyperTransport™技術とは、二つのデバイスを1対1 (point-to-point)で接続する技術であり、従来のインターコネクト技術に比較して、集積回路同士の情報交換を高速化します。

チップセット

RS485 Northbridge (NB)とSB460 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。

- RS485 (NB)**
- 1つの x2 (x4に拡張可能) A-Link Express インターフェース (PCI Express 1.0a に対応)でATI IXPに接続
 - グラフィックインターフェースのPCI Express x16 インターフェースを搭載し、PCI Express Base Specification revision 1.0aに完全対応
 - 内蔵式2D/3Dグラフィックエンジン、デュアル表示、およびTVエンコーダーをサポート。
 - DirectX 9.0に完全対応 (Vertex Shader version 2.0とPixel Shader version 2.0)
- SB460 (SB)**
- 2/4-レーンのA-Link Express インターフェースでATI Northbridgeに接続
 - PCI 2.3 規格に対応し、最大6つまでのマスター装置の取り付けを可能に
 - 4つまでのSerial ATA 装置をサポートし、Serial ATA 1.0 規格に対応しており、且つRAID 0とRAID 1 の機能を提供
 - 内蔵のUSB 2.0 ホストコントローラで最大8つまでのUSB 2.0ポートをサポート
 - 内蔵のIDEコントローラでUltra DMA 133/100/66/33の諸モードをサポート

メモリ

- デュアルチャネルのDDR2 800/667/533/400 DDR2 SDRAMを採用
- 2つの非バッファードDIMMを搭載
- 各DIMMスロットに8 GBまで装着可能で、合計16GBまでをサポート

オーディオ(オプション)

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：

- | |
|---|
| <ul style="list-style-type: none"> • 8チャンネルのDACで、7.1オーディオソリューションの24/20/16-bit PCM形式をサポート • 192K/96K/48K/44.1KHz DAC サンプリング率をサポート • 電源サポート：3.3V(デジタル方式の場合)、3.5V~5.25V(アナログ方式の場合) • Microsoft WHQL/WLP 2.x オーディオ基準に準拠 • Direct Sound 3D™ に対応 • Dolby Digital Encoder出力で、家庭用電子製品への対応を可能に |
| <ul style="list-style-type: none"> • AC'97 2.3 規格に準拠 • PCマルチメディアシステムの6チャンネルオーディオCODECをサポート • 5ビット音声コントロール可能なアナログラインレベルのステレオ入力が3つ：ラインイン、CD、およびAUX • Microsoft WHQL/WLP 2.0 オーディオ要求に適合 |

1394a (オプション)

- “IEEE Std 1394-1995 for a high-performance serial bus and IEEE Std 1394a-2000”の基準に完全対応
- IEEE Std 1394a-2000 完全対応の2つのポートのそれぞれが400M bits/秒の転送率を実現

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：

<ul style="list-style-type: none">• 10/100Mb/s N-way自動ネゴシエーション操作をサポート• 半/全二重の機能をサポート• Wake-On-LAN (WOL)と遠隔wake-up機能をサポート
<ul style="list-style-type: none">• 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• IEEE802.3, IEEE802.3u, およびIEEE802.3abに完全対応

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。

- グラフィック用のPCI Express x16 インターフェイス が1つ
- PCI Express x1 スロットが1つ
- 32ビットPCI v2.3 互換性スロット が2つ
- 40ピンIDEコネクタ(2つまでのIDE装置を接続可能に)が1つ
- フロッピーディスクドライブインターフェイスが1つ
- 7ピンSATAコネクタ が4つ

このマザーボードは、133/100/66/33MB/秒の転送速度でのUltra DMA/バスマスタリングをサポートします。

統合の入出力ポート

マザーボードには、次のI/Oポートやコネクタを揃えています。

- マウスとキーボード用のPS/2ポート が2つ
- シリアルポート が1つ
- パラレルポート が1つ
- VGAポート が1つ
- USBポートが4つ
- 1394a ポート が1つ(オプション)
- LANポート が1つ(オプション)
- マイク、ラインイン、ラインアウト用オーディオジャック

BIOSファームウェア

本マザーボードはAWARD BIOSを採用し、次の機能を含む多様なシステムの構成をサポートします。

- 電源管理
- ウェークアップアラーム
- CPUパラメータ
- CPUとメモリとのタイミング

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



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

특성

프로세서

본 마더보드에 탑재된 소켓 AM2는 다음과 같은 기능을 제공합니다:

- AMD 샘플론/애슬론 64/애슬론 64 FX/애슬론 64 X2 Dual-Core 프로세서 사용
- HyperTransport™ (HT) 인터페이스 속도 최대 2000MT/s 지원

HyperTransport™ 기술은 두 장치간의 point-to-point 링크로, 집적 회로가 기존의 상호 연결 기술 보다 더 빠른 속도로 정보를 교환할 수 있다.

칩셋

RS485 Northbridge (NB) 및 SB460 Southbridge (SB) 칩셋은 혁신적이고 범용성을 지닌 아키텍처를 기반으로 인정된 신뢰성과 성능을 지닌다.

RS485 (NB)

- ATI IXP 연결을 위한 1 x2 (x4 확장 가능) A-Link Express 인터페이스 (PCI Express 1.0a 부합)
- 그래픽 인터페이스를 위한 1 개의 PCI Express x16 지원, PCI Express 1.0a 사양 호환.
- 통합 2D/3D 그래픽 엔진, 듀얼 디스플레이, 통합 TV 인코더 지원.
- DirectX 9.0 지원 (Vertex Shader 버전 2.0 및 Pixel Shader 버전 2.0)

SB460 (SB)

- ATI Northbridge의 2/4 레인 A-Link Express II 인터페이스.
- PCI 2.3 사양 부합, 최대 6 개의 버스 마스터 장치 지원
- 4 개의 시리얼 ATA 장치 지원, 시리얼 ATA 1.0 사양 부합, RAID 0 및 RAID 1
- 최대 8 개의 USB 2.0 포트를 지원하는 통합 USB 2.0 호스트 컨트롤러
- Ultra DMA 133/100/66/33 모드를 지원하는 통합 IDE 컨트롤러

메모리

- DDR2 800/667/533/400 DDR2 SDRAM, 듀얼 채널 지원
- 2 개의 unbuffered DIMM 사용
- DIMM 당 최대 8 GB, 최대 메모리 16 GB

오디오(선택 사항)

본 마더보드는 다음과 같은 오디오 칩셋을 지원합니다.

- 8 채널 DAC, 7.1 오디오 솔루션을 위해 24/20/16 비트 PCM 포맷 지원
- 192K/96K/48K/44.1KHz DAC 샘플 속도 지원
- 전원 지원: 디지털: 3.3V; 아날로그: 3.5V~5.25V
- Microsoft WHQL/WLP 2.x 오디오 요구 조건에 부합
- Direct Sound 3D™ 호환
- 일반 전자 제품을 위한 돌비® 디지털 인코더 출력

- AC'97 2.3 사양 부합
- PC 멀티미디어 시스템을 위해 디자인 된 6 채널 오디오 코덱 지원
- 5 비트 볼륨 컨트롤의 아날로그 라인 레벨 스테레오 입력 3개 : Line-in, CD, AUX
- 마이크로소프트 WHQL/WLP 2.0 오디오 요구 조건 부합

1394a 파이어 와이어(선택 사항)

- 고성능 시리얼 버스를 위한 IEEE Std 1394-1995 및 IEEE Std 1394a-2000 부합
- 400M bits/s 속도로 케이블 포트에 부합하는 2 개의 IEEE Std 1394a-2000

보드 내장 LAN (선택 사항)

본 마더보드는 다음과 같은 LAN 칩셋을 지원합니다:

<ul style="list-style-type: none">• 10/100Mb/s N-Way Auto-negotiation 작업 지원• Half/full 듀플렉스 지원• Wake-On-LAN(WOL) 기능 및 원격 wake-up 지원
<ul style="list-style-type: none">• 통합 10/100/1000 트랜시버• PCI v2.3, 32-bit, 33/66-MHz 지원• IEEE802.3, IEEE802.3u 및 IEEE802.3ab 지원

확장 옵션

본 마더보드의 확장 옵션은 다음과 같다:

- 그래픽 인터페이스를 위한 PCI 익스프레스 x16 1 개
- PCI Express x1 슬롯 1 개
- 32 비트 PCI v2.3 호환 슬롯 2 개
- 40 핀 IDE 커넥터 1 개, 최대 2 IDE 장치 지원
- 플로피 디스크 드라이브 인터페이스 1 개
- 7 핀 SATA 커넥터 4 개

마더보드는 전송 속도 133/100/66/33 MB/s의 UltraDMA 버스 마스터링을 지원한다.

통합 I/O

본 마더보드는 폴 셋트의 I/O 포트 및 커넥터가 있다:

- 마우스 및 키보드용 PS/2 포트 2 개
- 시리얼 포트 1 개
- 패러럴 포트 1 개
- VGA 포트 1 개
- USB 포트 4 개
- 1394a 포트 1 개 (선택 사항)
- LAN 포트 1 개 (선택 사항)
- 마이크, 라인 입력 및 라인 출력용 오디오 잭

BIOS 펌웨어

본 마더보드는 다음과 같은 시스템 특성을 구성할 수 있는 Award BIOS 를 사용한다:

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

펌웨어로 다른 프로세서 클럭 속도의 파라미터를 설정할 수도 있다.



몇 하드웨어 사양 및 소프트웨어 아이템은 사전 통보 없이 변경될 수 있습니다.

功能

處理器

此主機板使用具有如下特性的Socket AM2 插槽：

- 可安裝AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core 處理器
- 支援高達2000MT/秒的HyperTransport™ (HT)介面傳輸速率

HyperTransport™技術為以點對點方式連接兩台設備的技術，藉此，積體電路間能夠以後高於現有各種內部連接技術(interconnect technology)技術的速度來交換資訊。

晶片組

RS485 北橋(NB)及SB460 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。

RS485 (NB)

- 1個 2倍速 (可擴充至4倍速) A-Link Express介面 (PCI Express 1.0a 相容) 以連接ATI IXP
- 具有一個PCI Express x16的圖形介面，完全與 PCI Express Specification revision 1.0a 相容。
- 採用整合式2D/3D圖形引擎，支援雙螢幕，並內建有電視編碼器
- 完全支援 DirectX 9.0 (Vertex Shader version 2.0 及 Pixel Shader version 2.0)

SB460(SB)

- 具有2/4通路A-Link Express II 介面，藉此與ATI Northbridge晶片相連。
- 符合PCI 2.3 規格，支援高達6匯流排主控裝置
- 支援4個Serial ATA裝置，符合Serial ATA 1.0 規格，並提供RAID 0 及RAID 1功能
- 整合有USB 2.0主控器，可支援至8個USB 2.0埠
- 整合有IDE 控制器，可支援 Ultra DMA 133/100/66/33模式

記憶體

- 採用雙通道DDR2 800/667/533/400 DDR2 SDRAM
- 可安裝2個非緩衝式DIMM
- 各DIMM可安裝8GB記憶體，共可支援高達16GB的記憶體容量

音頻(選購)

本主機板支援以下其中一種音訊晶片組：

- 配備8通道之DAC，可支援 7.1音訊解決方案之24/20/16-bit PCM 格式
- 支援 192K/96K/48K/44.1KHz DAC 取樣率
- 電源支援： 3.3V(數位)、3.5V~5.25V(類比)
- 符合Microsoft WHQL/WLP 2.x 音訊規格
- Direct Sound 3D™ 相容
- 配備Dolby® Digital Encoder 輸出端子，可用來連接家用電子產品

- 相容於AC'97 2.3 規格
- 支援為個人電腦多媒體系統設計的6聲道音訊CODEC功能
- 提供具有5位元音量控制功能的3種類比線級立體音效輸入：Lin-in、CD、及AUX
- 符合Microsoft WHQL/WLP 2.0 音訊規格

1394a FireWire (選購)

- 完全支援"IEEE Std 1394-1995 for a high-performance serial bus 及 IEEE Std 1394a-2000" 規格
- 2個IEEE Std 1394a-2000連接埠，傳輸速率達400M bits/秒

內建區域網路 (選購)

本主機板搭載有如下其中一種LAN晶片組：

<ul style="list-style-type: none">• 支援 10/100Mb/s N-way 自動協調作業• 支援半/全雙工功能• 支援區域網路喚醒(Wake-On-LAN)及遠端喚醒功能
<ul style="list-style-type: none">• 整合有10/100/1000 收發器• 支援PCI v2.3, 32位元, 33/66-MHz• 完全支援IEEE802.3、IEEE802.3u 及IEEE802.3ab

擴充選項

本主機板包括下列擴充選項：

- 1 個繪圖卡用PCI Express x16 介面
- 1 個PCI Express x1 插槽
- 2 個32位元PCIv2.3插槽
- 1 個40針IDE連接器，最多可連接2個IDE裝置
- 1 個軟碟機介面
- 4 個7針SATA插頭

本主機板支援傳輸率133/100/66/33 MB/秒下的Ultra DMA 匯流排主控功能。

整合 I/O

主機板具有一組齊全的 I/O 連接埠及連接頭：

- 2 個 PS/2 埠，供滑鼠與鍵盤使用
- 1 個串列埠
- 1 個平行埠
- 1 個VGA埠
- 4 個USB埠
- 1 個1394a 埠(選購)
- 1 個區域網路埠(選購)
- 麥克風音頻插座、線級輸入及線級輸出。

BIOS 韌體

本主機板使用AWARD BIOS，使用者可以組態設定許多系統功能，包括如下：

- 電源管理
- 喚醒警鈴
- CPU參數
- CPU及記憶體の時脈定時

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

主板使用一个 Socket AM2 插座，此插座具有以下特点：

- 支持 AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core 处理器
- 支持 2000 MT/s HyperTransport™ (HT) 接口速度

HyperTransport™ 技术是一种在两台设备间进行点到点连接的技术，它可以让集成电路使用比当前互连技术更高的速度进行信息交换。

芯片组

RS485 北桥 (NB) 和 SB460 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。

- RS485 (NB)**
- 1 x2 (可扩展到 x4) A-Link Express 接口 (符合 PCI Express 1.0a 标准) 用于连接到 ATI IXP
 - 支持 1 个 PCI Express x16 用于图形接口，完全符合 PCI Express 规格 1.0a。
 - 支持集成 2D/3D 图形引擎、双显示和集成 TV 编码器
 - 完全支持 DirectX 9.0 (Vertex Shader 版本 2.0 和 Pixel Shader 版本 2.0)

- SB460 (SB)**
- 到 ATI 北桥的 2/4-lane A-Link Express II 接口
 - 符合 PCI 2.3 规格，最多支持 6 个总线设备
 - 支持 4 个串行 ATA 设备，符合串行 ATA 1.0 规格，支持 RAID 0 和 RAID 1
 - 集成 USB 2.0 主控器，最多支持 8 个 USB 2.0 端口
 - 集成 IDE 控制器，支持 Ultra DMA 133/100/66/33 模式

内存

- DDR2 800/667/533/400 DDR2 SDRAM 双通道支持
- 支持 2 个非缓冲 DIMM
- 每个插槽支持 8 GB，总共最大可支持 16 GB

音频(可选)

此主板支持以下任何一种音频芯片组：

- | |
|---|
| <ul style="list-style-type: none">• 8 通道 DAC，支持 24/20/16 位 PCM 格式用于 7.1 音频解决方案• 支持 192K/96K/48K/44.1KHz DAC 采样速率• 电源支持：数字亮：3.3V；模拟量：3.5V-5.25V• 符合 Microsoft WHQL/WLP 2.x 音频要求• 符合 Direct Sound 3D™ 规格• 用于消费类电子应用的杜比®数字编码器 |
| <ul style="list-style-type: none">• 兼容 AC'97 v2.3 规格• 支持为 PC 多媒体系统设计的 6 声道音频编解码器• 提供 3 路带 5 位音量控制的模拟线路电平立体声输入：线入、CD 和 AUX• 符合 Microsoft WHQL/WLP 2.0 音频要求 |

1394a 火线 (可选)

- 完全符合用于高性能串行总线的 IEEE Std 1394-1995 和 IEEE Std 1394a-2000
- 2 个符合 IEEE Std 1394a-2000 标准的电缆端口, 传输速率可达 400M bits/s

Onboard LAN (可选)

此主板支持以下任何一种 LAN 芯片组:

<ul style="list-style-type: none">• 支持 10/100Mb/s N 路自协商工作• 支持半双工/全双工工作• 支持 LAN 唤醒 (WOL) 功能和远程唤醒功能
<ul style="list-style-type: none">• 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、IEEE802.3u 和 IEEE802.3ab

扩展选项

此主板提供如下扩展选项:

- 1 个用于图形接口的 PCI Express x16
- 1 个 PCI Express x1 插槽
- 2 个 32 位 PCI v2.3 扩展槽
- 1 个 40-pin IDE 接口, 可支持 2 个 IDE 设备
- 1 个软驱接口
- 4 个 7-pin SATA 接口

主板支持 Ultra DMA 总线控制, 传输速率可达 133/100/66/33MB/s。

集成 I/O

此主板具有完整的 I/O 端口和插孔:

- 2 个用于连接鼠标和键盘的 PS/2 端口
- 1 个串口
- 1 个并口
- 1 个 VGA 端口
- 4 个 USB 端口
- 1 个 1394a 端口 (可选)
- 1 个 LAN 端口 (可选)
- 麦克风、线入和线出声音插孔

BIOS

此主板使用 AWARD BIOS, 可以让用户自己配置以下系统功能:

- 电源管理
- 唤醒报警
- CPU 参数
- CPU 和记忆定时

还可用于设置不同处理器时钟速度的参数。



某些硬件规格和软件项目若有更改恕不另行通知。

Характеристики

Процессор

Данная материнская плата размещает сокет AM2 и обладает следующими характеристиками:

- Размещает процессоры AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Поддерживает технологию 2000 MT/s HyperTransport™ (HT)

Технология HyperTransport™ обеспечивает связь двух устройств по протоколу point-to-point, позволяя гораздо более быстрый обмен информацией между интегральными микросхемами, чем тот, который обеспечивается существующими технологиями.

Чипсет

Чипсеты RS485 «Северный мост» (Northbridge, NB) и SB460 «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

RS485 (NB)

- Один разъем A-Link Express x2 (с возможностью расширения до x4) (совместимый с PCI Express 1.0a) для подключения ATI IXP
- Поддерживает один слот PCI Express x16 для графического интерфейса; полностью совместима со спецификацией PCI Express rev. 1.0a.
- Поддерживает встроенное ядро обработки 2D/3D графики, вывод изображения на два экрана, встроенный чип TV encoder
- Полностью поддерживает DirectX 9.0 (Vertex Shader версия 2.0 и Pixel Shader версия 2.0)

SB460 (SB)

- 2/4-дорожечный интерфейс A-Link Express II к северному мостику ATI
- Совместимость со спецификацией PCI 2.3, поддержка до 6 устройств типа master
- Поддержка четырех устройств Serial ATA, совместимость со спецификацией Serial ATA 1.0, размещение RAID 0 и RAID 1
- Встроенный контроллер хоста USB 2.0 с поддержкой до восьми портов USB 2.0
- Встроенный контроллер IDE с поддержкой режимов Ultra DMA 133/100/66/33

Память

- DDR2 800/667/533/400 DDR2 SDRAM с поддержкой двухканального режима
- Обслуживает 2 модуля небуферизованной памяти DIMM
- Обслуживает до 8 ГБ на модуль DIMM (максимально до 16 ГБ памяти)

Аудио(опционально)

Данная плата может поддерживать любой из нижеследующих чипсетов аудио.

- Поддерживает 8-канальный DAC в 24/20/16-битном PCM формате для аудио вер. 7.1
- Поддерживает частоту сэмплирования DAC 192K/96K/48K/44.1 КГц
- Электропитание: цифровой режим: 3.3V; аналоговый режим: 3.5V~5.25V
- Соответствует требованиям Microsoft WHQL/WLP 2.x аудио
- Совместимость с Direct Sound 3D™
- Выход Dolby® Digital Encoder для применения в бытовой электронике

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

1394a FireWire (опционально)

- Полная совместимость с требованиями стандарта IEEE Std 1394-1995 для скоростных серийных шин и стандарта IEEE Std 1394a-2000
- Два кабельных порта, совместимых с IEEE Std 1394a-2000, со скоростью передачи 400М бит/с

Встроенный сетевой адаптер LAN (опционально)

Встроенный сетевой адаптер LAN обладает следующими характеристиками:

<ul style="list-style-type: none">• Поддерживает автоматическое определение скорости и режима соединения 10/100Mb/s• Поддержка режимов Half и Full Duplex• Поддерживает функции Wake-On-LAN и remote wake-up
<ul style="list-style-type: none">• Интегрированный трансивер 10/100/1000• Поддержка PCI v2.3, 32-бит, 33/66-МГц• Поддерживает IEEE802.3, IEEE802.3u и IEEE802.3ab

Возможности расширения

Существуют следующие опции расширения данной материнской платы:

- Один разъем для карты графики PCI Express x16
- Один слот PCI Express
- Два 32-битных слота PCI v2.3
- Один 40-пиновый коннектор IDE с поддержкой до 2 устройств IDE
- Один разъем для накопителя на гибких дисках
- Четыре разъема 7-pin SATA

Плата поддерживает технологию захвата управления шиной UltraDMA bus mastering со скоростью передачи данных 133/100/66/33 МБ/сек.

Интегрированный вход/выход

Плата снабжена полным набором портов входа/выхода и разъемов:

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

BIOS

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

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

BIOS допускает также установку параметров для различных частот процессора.



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

Cechy

Procesor

Ta płyta główna wyposażona jest w gniazdo AM2 i posiada następujące właściwości:

- Obsługuje procesory firmy AMD typu Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Obsługuje złącze HyperTransport™ (HT) z szybkością do 2000MT/s

Technologia HiperTransportu™ jest protokołem komunikacji między dwoma urządzeniami, który umożliwia układom zcalonym wymieniać informacje z dużo większymi szybkościami niż dotychczas stosowane technologie wzajemnych połączeń.

Chipset

Mostek północny (NB) RS485 i mostek południowy (SB) SB460 chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalności.

RS485 (NB)

- 1 złącze x2 (rozszerzalne do x4) A-Link Express (zgodne ze standardem PCI Express 1.0a) służące do podłączenia ATI IXP
- Obsługuje jedno gniazdo PCI Express x16 przeznaczone dla karty graficznej, w pełni zgodne z protokołem PCI Express w wersji 1.0a
- Zintegrowany kontroler graficzny 2D/3D, wyjście na dwa monitory oraz zintegrowany koder obsługujący TV
- W pełni obsługuje DirectX 9.0 (Vertex Shader wersja 2.0 i Pixel Shader wersja 2.0)

SB460 (SB)

- 2/4-ścieżkowe połączenie A-Link Express II z mostkiem północnym ATI
- Zgodne ze standardem PCI w wersji 2.3 obsługujące do 6 urządzeń bus master
- Obsługująca cztery urządzenia Serial ATA, zgodne ze standardem Serial ATA wersja 1.0, przystosowana do RAID 0 i RAID 1
- Zintegrowany kontroler USB 2.0 obsługujący do do ośmiu gniazd USB 2.0
- Zintegrowany kontroler IDE obsługujący tryby pracy Ultra DMA 133/100/66/33

Pamięć

- DDR2 800/667/533/400 DDR2 SDRAM z obsługą dwu kanałów
- Zaopatrzony w dwa gniazda niebuforowanej pamięci typu DIMM
- Obsługuje pamięć DIMM do pojemności 8 GB każda; maksymalna możliwa pojemność pamięci do 16 GB

Audio (opcjonalnie)

Ta płyta główna obsługuje wszystkie z niżej wymienionych chipsetów audio.

- Obsługuje 8 kanałów DAC w formacie 24/20/16-bit PCM w standardzie audio 7.1
- Obsługuje częstotliwości próbkowania 192K/96K/48K/44.1KHz DAC
- Zasilacz obsługuje odbiorniki 3.3V cyfrowe i 3.5V~5.25V analogowe
- Zgodna ze specyfikacją Microsoft WHQL/WLP 2.x audio
- Zgodny z Direct Sound 3D™
- Wyjście Dolby® Digital Encoder dla zastosowań konsumenckich

- Zgodne ze specyfikacją AC'97 w wersji 2.3
- Obsługuje 6 kanałów audio CODEC dla komputerowych systemów multimedialnych
- Zapewnia trzy wejściowe, analogowe linie stereo z 5 bitową regulacją głośności: Line-in, CD, AUX
- Spełnia wymagania stawiane audio przez firmę Microsoft w systemie WHQL/WLP 2.0

1394a FireWire (opcjonalnie)

- W pełni zgodna z zabezpieczeniem standardu IEEE 1394-1995 dla wysokiej wydajności szyny szeregowej oraz standardu IEEE 1394a-2000
- Dwa złącza całkowicie zgodne ze standardem IEEE 1394a-2000 o szybkości przesyłania 400M bits/s

Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

- | |
|---|
| <ul style="list-style-type: none">• Obsługuje N-drożne automatycznie ustalone operacje z szybkościami 10/100Mb/s• Zdolność Half/Full duplex• Obsługuje funkcję Wake-On-LAN (WOL) i zdalnie sterowane wake-up (uruchamianie komputera) |
| <ul style="list-style-type: none">• Zintegrowany terminal nadawczo-odbiorczy 10/100/1000• Obsługuje 32 bitowe PCI w wersji 2.3 o częstotliwościach 33/66-MHz• Całkowicie zgodny z IEEE802.3, IEEE802.3u and IEEE802.3ab |

Możliwości rozbudowy

Płyta główna wyposażona jest w następujące gniazda:

- Jedno gniazdo PCI Express x16 dla karty graficznej
- Jedno gniazdo PCI Express x1
- Dwa 32-bitowych gniazda zgodnych z PCI w wersji 2.3
- Jedno 40-nóżkowe złącze obsługujące do 2 urządzeń IDE
- Jedno złącze obsługujące stacje dyskiety
- Cztery 7-nóżkowe złącza SATA

Płyta główna obsługuje szynę UltraDMA z szybkością transferu 133/100/66/33 MB/s.

Zintegrowane We/Wy

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

- Dwa gniazda PS/2 dla myszy i klawiatury
- Jedno gniazdo szeregowo
- Jedno gniazdo równoległe
- Jedno gniazdo VGA
- Cztery gniazda USB
- Jedno gniazdo 1394a (opcjonalnie)
- Jedno gniazdo LAN (opcjonalnie)
- Gniazdo wejściowe mikrofonowe, gniazdo wejściowe i wyjściowe dźwięku (audio)

Firmowy BIOS

Płyta główna wyposażona jest w BIOS firmy AWARD, który pozwala użytkownikowi konfigurować wiele cech systemu włączając w to następujące właściwości:

- Zarządzanie poborem mocy
- Alarmy typu Wake-up
- Parametry pracy procesora
- Ustalenia szybkości pracy procesora i pamięci

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

Processor

Tato základní deska využívá patici Socket AM2 nabízející následující vlastnosti:

- Podpora procesorů AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Podpora rychlostí rozhraní HyperTransport™ (HT) až 2000 MT/s

Technologie HyperTransport™ je přímým spojením mezi dvěma zařízeními, umožňující integrovaným obvodům výměnu informací vyššími rychlostmi, než jaké nabízejí současné technologie.

Čipová sada

Čipy northbridge (NB) RS485 a southbridge (SB) SB460 jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

- RS485 (NB)**
- 1 x2 (rozšiřitelné až na x4) rozhraní A-Link Express (splňuje požadavky standardu PCI Express 1.0a) pro připojení k ATI IXP
 - Podpora jednoho rozhraní PCI Express x16 pro grafiku, zcela splňující základní požadavky standardu PCI Express, revize 1.0a.
 - Integrované 2D/3D grafické jádro, dvojitě zobrazení a integrovaný dekodér TV
 - Plná podpora DirectX 9.0 (Vertex Shader verze 2.0 a Pixel Shader verze 2.0)

- SB460 (SB)**
- 2/4kanálové rozhraní A-Link Express II se severním můstkem ATI Northbridge
 - Splňuje požadavky standardu PCI 2.3 s podporou až 6 hlavních kanálů
 - Podpora čtyř sériových rozhraní ATA, splňuje požadavky standardu Serial ATA 1.0, součástí jsou řadiče RAID 0 a RAID 1
 - Integrované hostitelské řadiče USB 2.0 podporující až osm portů
 - Integrovaný řadič IDE podporující Ultra ATA s režimy 133/100/66/33

Paměť

- Paměti DDR2 800/667/533/400 DDR2 SDRAM s dvoukanálovým přenosem
- Instalovat je možné až dva DIMM moduly bez vyrovnávací paměti
- Až 8 GB paměti na jeden modul DIMM s maximální velikostí paměti do 16 GB

Zvuk (volitelně)

Tato základní deska může podporovat libovolnou zvukovou čipovou sadu.

- 8 kanálů převodníku DAC podporuje 24/20/16bitový formát PCM pro zvukový výstup 7.1
- Podpora vzorkovací frekvence převodníku DAC 192k/96k/48k/44,1kHz
- Podpora napájení: Digitální: 3,3 V; Analogové: 3,5 V ~ 5,25 V
- Splňuje požadavky na audio zařízení Microsoft WHQL/WLP 2.x
- Kompatibilita s Direct Sound 3D™
- Výstup digitálního enkodéru Dolby® pro použití s elektronickými zařízeními uživatele

- Splňuje požadavky standardu AC'97 2.3
- Podpora 6kanálového zvukového kodeku určeného pro multimediální PC systémy
- Nabízí tři analogové linkové stereo vstupy s 5bitovým řízením hlasitosti: LINE-IN, CD, AUX
- Splňuje požadavky pro audio zařízení Microsoft WHQL/WLP 2.0

1394a FireWire (volitelně)

- Plná podpora standardu IEEE 1394–1995 pro vysokovýkonnou sériovou sběrnici a IEEE standard 1394a–2000
- Dva kabelové porty podle standardu IEEE 1394a–2000 s rychlostí až 400 Mb/s

Vestavění síťové rozhraní LAN (volitelně)

Vestavěné síťové rozhraní LAN nabízí následující možnosti:

<ul style="list-style-type: none">• Podpora 10/100Mb/s N–cestného automatického přepínání provozu• Poloviční a plný duplex• Podpora funkce Wake–On–LAN(WOL) a aktivace na dálku
<ul style="list-style-type: none">• Integrovaný transceiver 10/100/1000• Podpora rozhraní PCI v2.3, 32bitové, 33/66 MHz• Plná podpora IEEE802.3, IEEE802.3u a IEEE802.3ab

Možnosti rozšíření

Základní deska je dodávána s následujícími možnostmi rozšíření

- Jedna patice PCI Express x16 pro grafickou kartu
- Jedna patice PCI Express x1
- Dva 32bitové patice PCI v2.3
- Jeden 40kolíkový konektor IDE podporující připojení 2 zařízení standardu IDE
- Jedno rozhraní pro disketovou mechaniku
- Čtyři 7kolíkové konektor SATA

Základní deska podporuje sběrnici Ultra DMA s přenosovými rychlostmi 133/100/66/33 MB/s.

Integrovaný vstup/výstup

Základní deska je vybavena kompletní sadou vstupních portů a konektorů I/O:

- Dva porty PS/2 pro myš a klávesnici
- Jeden sériový port
- Jeden paralelní port
- Jeden VGA port
- Čtyři USB porty
- Jeden port 1394a (volitelně)
- Jeden port LAN (volitelně)
- Zvukové konektory pro mikrofon, zvukový vstup a výstup

Firmware BIOS

Základní deska využívá BIOS formy AWARD, který uživateli umožňuje nakonfigurovat mnoho systémových parametrů, včetně následujících:

- Řízení spotřeby
- Alarmy při spouštění systému
- Parametry CPU
- Časování CPU a paměti

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



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

Multi-Language Translation

Caracteristici

Procesorul

Această placă de bază suportă un socket AM2 care are următoarele caracteristici:

- Funcționează cu procesoare AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Suportă interfețe HyperTransport™ (HT) cu viteze de până la 2000 MT/s

Tehnologia HyperTransport™ este o legătură punct-la-punct între două aparate, care permite viteze mult mai mari de schimb al informațiilor între circuitele integrate, decât cel asigurat de tehnologiile de interconectare actuale.

Setul de chipuri

Seturile de chipuri RS485 Northbridge (NB) și SB460 Southbridge (SB) se bazează pe o arhitectură inovatoare și scalabilă, care s-a impus deja prin fiabilitate și performanță.

RS485 (NB)

- O interfață x2 (extensibil la x4) A-Link Express (compatibilă cu PCI Express 1.0a) pentru conectare la ATI IXP
- Suportă un PCI Express x16 pentru Graphics Interface, ce corespunde specificațiilor PCI Express, revizia 1.0a.
- 2D/3D motor graphics integrat, dual display, suportă un TV-encoder
- Suport deplin DirectX 9.0 (Vertex Shader, versiunea 2.0 și Pixel Shader, versiunea 2.0)

SB460 (SB)

- interfață 2/4-lane A-Link Express II pentru un ATI Northbridge
- Compatibilă cu specificația PCI 2.3, suportând până la 7 unități bus master
- Suportă patru unități Serial ATA, compatibilă cu specificația Serial ATA 1.0, RAID 0 și RAID 1 încorporat
- Controler gazdă USB 2.0, suportând până la opt porturi USB 2.0
- Controler IDE integrat care suportă modulele Ultra DMA 133/100/66/33

Memoria

- Suport DDR2 800/667/533/400 DDR2 SDRAM cu canal dual
- Poate funcționa cu două module DIMM fără zonă tampon
- Poate funcționa cu module DIMM de cel mult 8 GB, iar cantitatea maximă de memorie este de 16 GB

Audio (opțional)

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

- Suport DAC 8 canale format PCM 24/20/16-bit pentru soluții audio 7.1
- Suport 192K/96K/48K/44.1KHz DAC sample rate
- Suport curent: Digital: 3.3V; Analog: 3.5V~5.25V
- Compatibilă cu specificațiile audio Microsoft WHQL/WLP 2.x
- Compatibil cu Direct Sound 3D™
- Leșire Dolby® Digital Encoder pentru aplicațiile electronice ale clientului

- Compatibil cu specificația AC'97 2.3
- Suportă CODEC cu șase 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
- Corespunde cerințelor audio Microsoft WHQL/WLP 2.0

1394a Fire Wire (opțional)

- Compatibil deplin cu prevederile standardului IEEE 1394-1995, oferind un bus serial de înaltă performanță și compatibilitate cu standardul IEEE 1394a-2000
- Două porturi de cablu compatibile deplin cu standardul IEEE 1394a-2000, la viteza de 400 Mb/s

Onboard LAN (opțional)

Onboard LAN are următoarele caracteristici:

<ul style="list-style-type: none">• Suportă operații de autonegociere N-way de 10/100 Mb/s• Posibilitate semi-duplex și duplex complet• Suportă funcția Wake-On-LAN și trezirea de la distanță
<ul style="list-style-type: none">• Unitate de emisie/recepție 10/100/1000 integrat• Suportă PCI, versiunea 2.3, de 32 biți, la 33/66 MHz• Compatibilitate deplină cu IEEE802.3, IEEE802.3u și IEEE802.3ab

Opțiuni de extindere

Placa de bază este dotată următoarele posibilități de extindere:

- Un PCI Express de 16x pentru interfața grafică
- Un slot PCI Express x1
- Două sloturi de 32 biți compatibile PCI, versiunea 2.3
- Un conector 40-pin IDE care suportă până la 2 dispozitive IDE
- O interfață pentru unitate floppy
- Patru conectoare SATA 7-pin

Placa de bază suportă bus mastering UltraDMA cu viteze de transfer de 133/100/66/33 MB/s

I/O integrată

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

- Două porturi PS/2, pentru mouse și tastatură
- Un port serial
- Un port paralel
- Un port VGA
- Patru porturi USB
- Un port 1394a (opțional)
- Un port LAN (opțional)
- Mufe audio pentru microfon, intrare și ieșire audio

Firmware BIOS

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

- Gestionarea energiei
- Alarmer de trezire
- Parametri CPU
- Temporizare CPU și memorie

Acest firmware poate fi utilizat și pentru a seta parametrii diferitelor frecvențe de comandă ale procesorului.



Anumite specificații hardware și elemente de software pot fi modificate fără înștiințare prealabilă.

Multi-Language Translation

Спецификация

Процесор

Тази дънна платка използва сокет AM2 със следните спецификации:

- Поддръжка на процесори AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core
- Поддръжка на технологията HyperTransport™ (HT) със скорост до 2000MT/s

Технологията HyperTransport™ е връзка точка-до-точка (point-to-point) между две устройства, която предоставя възможност интегрираните вериги да обменят информация на много по-висока скорост от досегашно съществуващите технологии.

Чипсет

Чипсетът със северен мост RS485 (NB) и южен мост SB460 (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

RS485 (NB)

- Интерфейс A-Link Express x2 с възможност за разширение до x4 (съвместим с PCI Express 1.0a) за връзка към ATI IXP
- Поддръжка на един порт PCI Express x16 за графичен интерфейс, напълно съвместим със спецификацията PCI Express 1.0a.
- интегрирано 2D/3D графично ядро с поддръжка на два монитора и вграден TV encoder
- Пълна поддръжка на DirectX 9.0 (Vertex Shader версия 2.0 и Pixel Shader версия 2.0)

S460 (SB)

- Интерфейс A-Link Express II с 2 или 4 конектора към Северния мост ATI
- Съвместимост със спецификацията PCI 2.3 с поддръжка на до 6 bus master устройства
- Поддръжка на четири устройства Serial ATA, съвместимо със спецификацията Serial ATA 1.0, поддръжка на RAID 0 и RAID 1
- Интегриран контролер USB 2.0 с поддръжка до осем порта USB 2.0
- Интегриран IDE контролер Ultra DMA 133/100/66/33

Памет

- Поддръжка на двуканална памет DDR2 800/667/533/400 DDR2 SDRAM
- поддръжка на до два небуферирани DIMM слота
- до 8 GB памет на 1 DIMM канал с максимален капацитет 16 GB

Аудио (опция)

Тази дънна платка поддържа следните аудио спецификации:

- 8-канален цифрово-аналогов преобразовател с поддръжка на 24/20/16-bit PCM формат за 7.1 канален звук.
- Поддръжка на честота 192K/96K/48K/44.1KHz
- Захранване: цифрово: 3.3V; аналогово: 3.5V~5.25V
- аудио - съвместимо с спецификацията Microsoft WHQL/WLP 2.x
- съвместимост с Direct Sound 3D™
- Изход с вграден Dolby® Digital Encoder за връзка с домашни аудио/видео уреди.

- Съвместимост със спецификацията AC'97 2.3
- Поддръжка на 6-канален аудио кодек за мултимедийни компютърни системи
- Три аналогови линейни стерео входа с 5-битов контрол на силата на звука: Line-in, CD, AUX
- Съответствие с изискванията на Microsoft WHQL/WLP 2.0

1394a FireWire контролер (опция)

- Пълна съвместимост със стандартите IEEE 1394 -1995 за високоскоростна серийна шина и IEEE 1394a -2000
- Два кабелни порта (400M bits/s) напълно съвместими със стандарта IEEE 1394a-2000

Интегриран мрежов контролер (опция)

Спецификация на интегрирания мрежов контролер:

<ul style="list-style-type: none">• Поддръжка на режими: 10/100 Mb/s с функция за определяне оптималната скорост на трансфер (N-Way Auto-negotiation).• Режим: Half/Full duplex• поддръжка на функция за "събуждане" Wake-On-LAN и дистанционен wake-up
<ul style="list-style-type: none">• Интегриран 10/100/1000 контролер• поддръжка на PCI v2.3, 32-bit, 33/66-MHz• Пълна поддръжка на стандартите IEEE802.3, IEEE802.3u и IEEE802.3ab

Възможности за разширяване

Дънната платка има следните разширителни възможности:

- Един слот PCI Express x16 за графичен интерфейс
- Един слот PCI Express x1
- Два слота 32-bit PCI v2.3
- Един 40-pin IDE конектор за поддръжка на до 2 IDE устройства
- Един конектор за флопидисково устройство
- Четири 7-щифтови SATA конекторас

Тази дънна платка поддържа UltraDMA директно управление на шината със скорости на трансфер 133/100/66/33 MB/s.

Интегриран Вход/Изход контролер

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

- два PS/2 порта за мишка и клавиатура
- един сериен порт
- един паралелен порт
- един VGA порт
- четири USB порта
- един 1394a порт (опция)
- един LAN порт (опция)
- Аудио жакове за микрофон, линеен вход и линеен изход

BIOS Firmware

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

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

настройка на скоростта на часовника на процесора



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

Multi-Language Translation

Jellemző

Processzor

Ez az alaplap az alábbi jellemzőkkel bíró AM2 socket-el van ellátva:

- AMD Sempron/Athlon 64/Athlon 64 FX/Athlon 64 X2 Dual-Core processzorokkal működik
- Maximum 2000 MT/s HyperTransport™ (HT) sebességű interfészt támogat

A HyperTransport™ technológia egy ponttól pontig való kapcsolat két készülék között, és segítségével az integrált áramkörök közötti információcsere sebessége sokkal nagyobb, mint a jelenleg rendelkezésre álló összekapcsolási technológiák esetében.

Lapkakészlet

A RS485 Northbridge (NB) és SB460 Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

- RS485 (NB)**
- Egy 2-szeres (4-szeresre bővíthető) A-Link Express interfész (PCI Express 1.0a kompatibilis) az ATI IXP kapcsolására
 - támogat egy PCI Express-t x16 Graphics Interface számára és teljes mértékben megfelel a to the PCI Express 1.0a Műszaki Előírásainak.
 - Integrált 2D/3D graphics motor, duális megjelenítés és támogat egy integrált TV-kódolót
 - Teljes DirectX 9.0 támogatás (Vertex Shader 2.0 és Pixel Shader 2.0)
- SB460 (SB)**
- 2/4-lane A-Link Express II interfész az ATI Northbridge-hez
 - A PCI 2.3-as specifikációjával kompatibilis, akár 6 bus master eszközt támogat
 - Négy soros ATA eszközt támogat, kompatibilis a soros ATA 1.0 specifikációjával, RAID 0 és RAID 1 beépítve
 - Beépített USB 2.0 gazda vezérlő, legtöbb nyolc USB 2.0 portot támogat
 - Beépített IDE vezérlő, amely az Ultra DMA 133/100/66/33 módokat támogatja

Memória

- DDR2 800/667/533/400 DDR2 SDRAM, duál csatorna támogatásával
- Két puffermentes DIMM egységgel működik
- Maximum 8 GB-os DIMM egységeket támogat, maximális memória 16 GB

Audio (opcionális)

Ez az alaplap a következő Audio lapkakészletek bármelyikét támogatja.

- 8 csatornás DAC támogatás 24/20/16-bit PCM formátum 7.1 hangberendezésre
- 192K/96K/48K/44.1KHz DAC sample rate támogatással
- Áramellátás: Digitális: 3.3V; Analóg: 3.5V~5.25V
- Megfelel a Microsoft WHQL/WLP 2.x audio követelményeinek
- Kompatibilis a Direct Sound 3D™ technológiával
- Dolby® Digital Encoder digitális kóder kimenet a vevő elektromos alkalmazásaihoz

- Megfelel az AC'97 2.3-as specifikációnak
- A számítógép multimédiás rendszereinek szánt hat csatornás audio CODEC-et támogat
- Három analóg sztereo bemenetet biztosít 5 bites hangerő vezérléssel: bemenet, CD, AUX
- Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeinek

1394a FireWire (opcionális)

- Teljesen kompatibilis az IEEE 1394-1995 szabvány előírásaival, csúcsteljesítményű soros busszal, és megfelel az IEEE 1394a-2000 szabványnak
- Két, az IEEE 1394a-2000 szabvánnyal teljesen kompatibilis kábelportok, 400 Mbit/s sebességen

Alaplapon levő LAN (opcionális)

Az alaplapon levő LAN jellemzői:

<ul style="list-style-type: none">• 10/100Mb/s N-Way automatikus beállítással• Fél-/teljes duplex• Támogatja a Wake-On-LAN(WOL) funkciót és a távoli ébresztést
<ul style="list-style-type: none">• Integrált 10/100/1000 adó-vevő• Támogatja a 32 bites, 33/66 MHz-es PCI 2.3-as változatát• Teljesen megfelel az IEEE802.3, IEEE802.3u és IEEE802.3ab szabványoknak

Bővítési lehetőségek

Az alaplap a következő bővítési lehetőségekkel rendelkezik:

- Egy 16-szoros PCI Express a grafikus interfész számára
- Egy db. PCI Express x1 slot
- Két 32 bites, a PCI 2.3-as változatával kompatibilis foglalát
- Egy 40-pin IDE konnektor, mely támogatja 2 db. 2 IDE készüléket
- Egy hajlékonylemez meghajtó interfész
- Négy 7 tűs SATA csatlakozó

Az alaplap támogatja az UltraDMA bus mastering megoldást, 133/100/66/33 MB/s sebességen

Beépített I/O

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

- Két PS/2 port az egér és a billentyűzet számára
- Egy soros port
- Egy párhuzamos port
- Egy VGA port
- Négy USB port
- Egy 1394a port (opcionális)
- Egy LAN port (opcionális)
- Audio csatlakozók mikrofon, bemenet és kimenet számára

BIOS Firmware

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

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

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



Bizonyos hardverjellemzők és szoftverelemek előzetes bejelentés nélkül módosulhatnak.

Multi-Language Translation