# CERTIFICATE

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

hereby certifies in accordance with TÜV CERT procedure that

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

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

has established and applies a quality system for

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

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

Proof has been furnished that the requirements according to

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

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

Certificate Registration No. **04100 2000 1325**

The company has been certified since **2000**

TGA-ZM-30-96-00

Essen, 04.03.2004

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

# ISO14001 CERTIFICATE

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

We hereby certify that

**ECS MANUFACTURING (SHANZHEN) CO., LTD.**

by reason of its

**Environmental Management System**

has been awarded this certificate for compliance with the standard

**ISO14001:1996**

The Environmental Management System applies in the following area:

**ECS MANUFACTURING (SHANZHEN) CO., LTD. located at No. 20 & 26 (except 1F, 2F), Free Trade Zone, Shatuojiao, Shenzhen City, Guangdong Province, P. R. China. is engaged in manufacturing of Mother Board and Peripheral Card, and interrelated managerial activities.**

Date of issue: 28th Sept. 2004

Date of expiry: 27th Sept. 2007

Signed by:

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 Réglement sur le matériel brouilieur du Canada.

## About the Manual

The manual consists of the following:

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

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

**Chapter 3**
**Using BIOS**
Provides information on using the BIOS Setup Utility.
Go to ⇨ page 29

**Chapter 4**
**Using the Motherboard Software**
Describes the motherboard software
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**Chapter 5**
**SIS966/966L SATA RAID Setup Guide**
Provides information about SATA RAID Setup
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# Chapter 1
# *Introducing the Motherboard*

## Introduction

Thank you for choosing the 761GXM-M motherboard. This motherboard is a high performance, enhanced function motherboard that supports Socket AM2 for AMD Athlon 64 FX/ Athlon 64 X2 Dual-Core/Athlon 64/Sempron processors for high-end business or personal desktop markets.

The motherboard incorporates the SiS761GX Northbridge (NB) and SiS966(L) Southbridge (SB) chipsets. The SiS761GX Northbridge on this motherboard features the HyperTranport™ complaint bus driver technology to support AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/ Athlon 64/Sempron processors up to 2000 MT/s data rate. The Northbridge supports integrated Host-to-PCI Express Bridge, compliant with PCI Express Spec. 1.0a. Plus, SiS MuTIOL, a high bandwidth and mature technology, is incorporated to connect SiS761GX and SiS966(L) MuTIOL Media I/O together.

The SiS966(L) Southbridge on this motherboard supports Hi-Precision Event Timer (HPET) for Microsoft Windows with multiple DMA bus architecture that supports isochronous request and continuous packet transmission. It implements an EHCI compliant interface that supports up to eight USB 2.0 ports, and integrates AC'97 v2.3 compliant audio controller that features a 6-channel audio speaker outputs. The Southbridge integrates a Serial ATA host controller that is SATA v1.0a compliant, and supports 1.5Gb/s bandwidth for each serial port. It provides dual independent IDE channels and each of them supports PIO mode 0, 1, 2, 3, 4 and multiword DMA mode 0, 1, 2 and UltraDMA 133/100/66.

There is an advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM1, LPT, one VGA port and four USB ports, one optional LAN port, one optional 1394a port, and audio jacks for microphone, line-in, and line-out. This motherboard is designed in a Micro ATX form factor using a four-layer printed circuit board and measures 244 mm x 234 mm.

# Feature

## Processor

This motherboard uses socket AM2 that carries the following features:

- Accommodates AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/ Sempron 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 SiS761GX Northbridge (NB) and SiS966(L) Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

***SiS761GX (NB)***

- SiS MuTIOL is incorporated to connect SiS761GX and SiS966 MuTIOL Media I/O
- Supports HyperTransport™ Technology up to 2000 MT/s bandwidth
- Integrated MuTIOL 1G to PCI Express x1 Bridge, compliant with PCI Express spec.1.0a
- Supports up to 128 MB display memory with shared system memory
- High Performance & High quality 3D/2D Graphics Accelerator

***SiS966(L) (SB)***

- Integrated Multi-threaded I/O link Ensures Concurrency of Upstream/down Stream Data Transfer with 1.2 GB/s Bandwidth
- Compliant with PCI 2.3 specification supporting up to 6 PCI masters
- Compliant with PCI Express 1.0a
- Compliant with Serial ATA 1.0a specification
- Supports Dual IDE Master/Slave Controller supports Ultra DMA 133/100/66/33
- Compliant with AC'97/Intel High Definition Audio Codec(s) supporting 8-Channel audio outputs (optional)
- Integrated USB 2.0 Controller supporting up to eight ports

## Memory

- Supports DDR2 800/667/533/400 DDR SDRAM with Dual-channel DDR2 achitecture
- Accommodates two unbuffered DIMMs, with maximum memory size up to 16 GB

## Graphics

- Built-in 32-bit floating point format VLIW triangle setup engine
- Built-in a 1T pipelined 128-bit BITBLT graphics engine
- Built-in Direct Draw & GDI+ Accelerator
- Supports up to 2048 x 2048 texture size
- Share maximum 128 MB display memory

## 1394a FireWire (Optional)

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

## Onboard LAN (optional)

This motherboard may support either of the following LAN chipset:

| |
|---|
| • Supports 100/10 Mb/s N-Way Auto negotiation operation<br>• Half/Full duplex capability<br>• Supports Wake-on-LAN function and remote wake-up |
| • Integrate 10/100/1000 transceiver<br>• Supports PCI v2.3, 32-bit, 33/66MHz<br>• Supports fully with IEEE802.3, IEEE802.3u and IEEE802.3ab |
| • 10BASE-T/100BASE-TX IEEE 802.3u fast Ethernet transceiver<br>• Integrated voltage regulator to allow operation from a single 3.3V/ 2.5V supply source<br>• Supports HP auto-MDIX and Low-power mode |

## Audio (Optional)

This motherboard may support either of the following Audio chipset:

| |
|---|
| • Compliant with AC'97 v2.3 CODEC<br>• Supports 6-channel audio CODEC designed for PC multimedia systems<br>• Provides three analog line-level stereo input with 5-bit volume control: Line-in, CD, AUX<br>• Meets Microsoft WHQL/WLP 2.0 audio requirements |
| • 8-channel DAC support 24/20/16-bit PCM format for 7.1 audio solution<br>• Supports 192K/96K/48K/44.1KHz DAC sample rate<br>• Power support: Digital: 3.3V; Analog: 3.5V~5.25V<br>• Meets Microsoft WHQL/WLP 2.x audio requirements<br>• Direct Sound 3D™ compatible<br>• Dolby® Digital Encoder output for consumer electronic application |

## Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphics interface
- One PCI Express x1 slot
- Two 32-bit PCI slots
- One CNR slot (Optional)
- Two IDE connectors which support four IDE devices
- One floppy disk drive interface
- Two/Four(optional for SiS966) 7-pin SATA connectors

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

## Integrated I/O

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

- Two PS/2 ports for mouse and keyboard
- One serial port
- One parallel port
- One VGA port
- Four USB ports
- One LAN port (Optional)
- One IEEE 1394 port (Optional)
- Audio jacks for microphone, line-in and 6-Ch line-out & microphone, line-in and 8-Ch High Definition Audio line-out (optional)

## BIOS Firmware

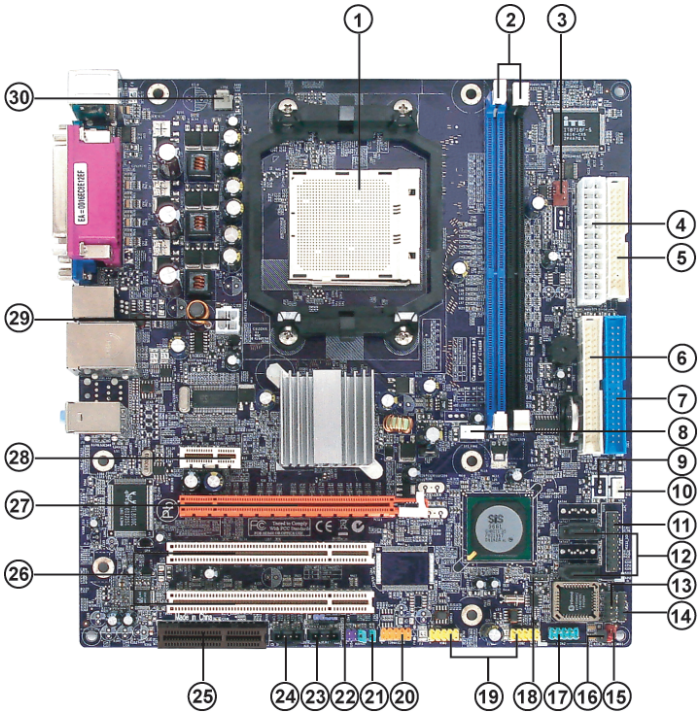
The motherboard uses AMI BIOS that enables users to configure many system features including the following:

- 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.*

## Motherboard Components



### *Table of Motherboard Components*

| LABEL | COMPONENT |
|---|---|
| 1 CPU Socket | Socket AM2 for Athlon FX/Athlon 64 X2 Dual Core/Athlon 64/Sempron processor |
| 2 DIMM1~2 | 240-pin DDR2 SDRAM slots |
| 3 CPU_FAN1 | CPU cooling fan connector |
| 4 ATX_POWER1 | Standard 24-pin ATX power connector |
| 5 FDD1 | Floppy diskette drive connector |
| 6 IDE2 | Sencondary IDE channel |
| 7 IDE1 | Primary IDE channel |
| 8 SYS_FAN1* | System cooling fan connector |
| 9 WOM1* | Wake on Modem connector |
| 10 WOL1* | Wake on LAN connector |
| 11 JLPC* | JLPC header |
| 12 SATA1~2 | Serial ATA connectors |
| 13 PANEL1 | Front panel switch/LED header |
| 14 IRDA1* | Infrared header |
| 15 CLR_CMOS1 | Clear CMOS jumper |
| 16 BIOS_WP1* | BIOS flash protect jumper |
| 17 COM2* | Onboard Serial port header |
| 18 JPT3* | JPT3 header |
| 19 USB1-2 | Front Panel USB headers |
| 20 1394A1* | Onboard 1394a header |
| 21 AUDIO1 | Front panel audio header |
| 22 SPDIFO1 | SPDIF out header |
| 23 AUX_IN1 | Auxiliary In header |
| 24 CD_IN1 | Analog audio input connector |
| 25 CNR1* | CNR slot |
| 26 PCI1~2 | 32-bit add-on card slots |
| 27 PCIE1 | PCI Express x16 slot |
| 28 PCIE2 | PCI Express x1 slot |
| 29 ATX12V | Auxiliary 4-pin power connector |
| 30 PWR_FAN* | Power fan connector |

"*" stands for optional components

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

# Chapter 2
# *Installing the Motherboard*

## Safety Precautions

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

## Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. Firstly, 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 floppy controller and four 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.

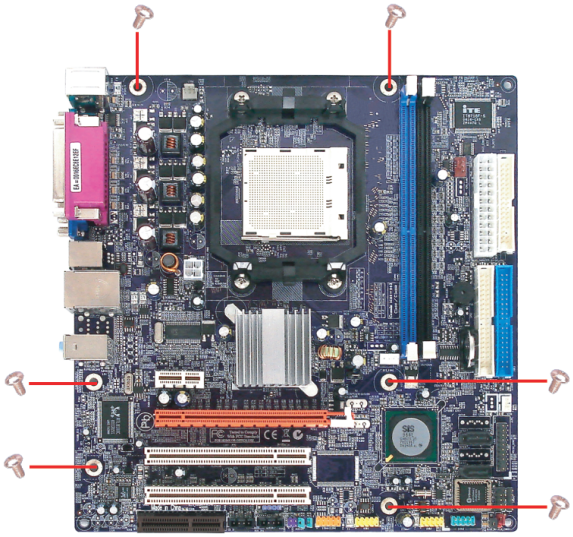
This motherboard carries a Micro ATX form factor of 244 X 234 mm. Choose a case that accommodates this form factor.

## 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 overtighten the screws as this can stress the motherboard.*

## Checking Jumper Settings

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

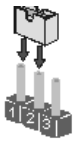
### *Setting Jumpers*

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

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

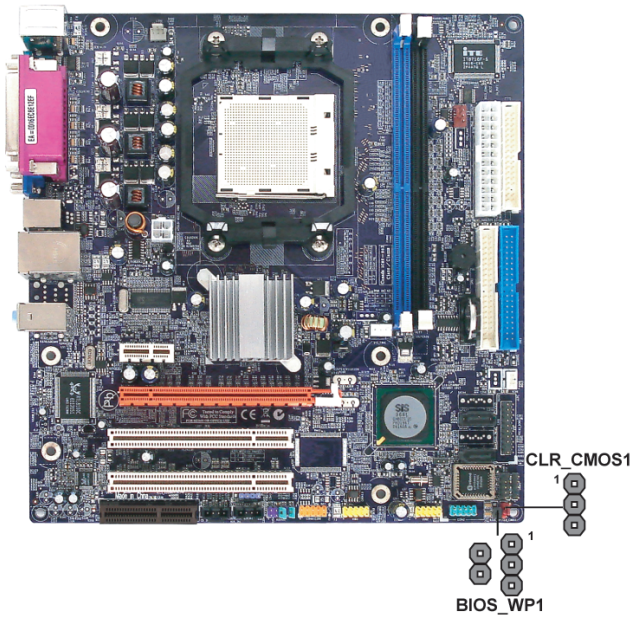
SHORT OPEN

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



### *Checking Jumper Settings*

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



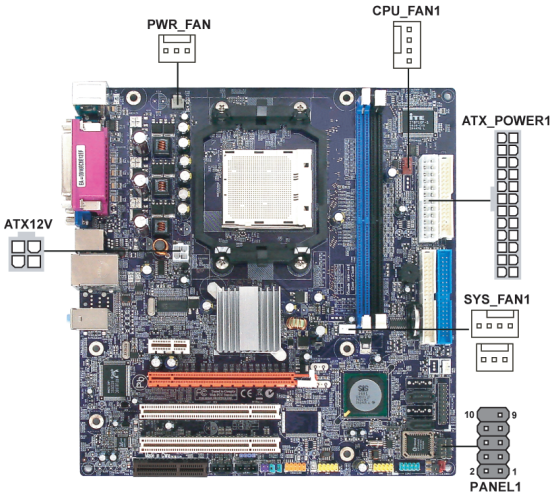

### *Jumper Settings*

| Jumper | Type | Description | Setting (default) | |
|---|---|---|---|---|
| **CLR_CMOS1** | 3-pin | CLEAR CMOS | 1-2: NORMAL<br>2-3: CLEAR CMOS<br>Before clearing the CMOS, make sure to turn the system off. |  1 CLR_CMOS1 |
| **BIOS_WP1 (optional)** | 2-pin | BIOS PROTECT | OPEN: DISABLE<br>SHORT: ENABLE |  BIOS_WP1 |
| **BIOS_WP1 (optional)** | 3-pin | BIOS PROTECT | 1-2: DISABLE<br>2-3: ENABLE |  1 BIOS_WP1 |

## Connecting Case Components

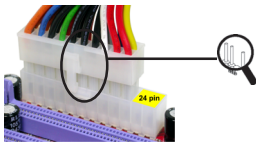
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN1**.
2 Connect the system cooling fan connector to **SYS_FAN1**.
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_POWER1**.
6 Connect the auxiliary case power supply connector to **ATX12V**.



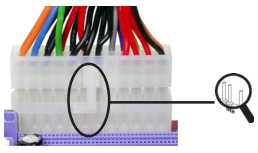

### *Connecting 20/24-pin power cable*

Users please note that the 20-pin and 24-pin power cables can both be connected to the ATX_POWER1 connector. With the 20-pin power cable, just align the 20-pin power cable with the pin 1 of the ATX_POWER1 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 falls on the left side of the ATX_POWER1 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 cling to the right side of ATX_POWER1 connector latch.

### CPU_FAN1/SYS_FAN1: CPU/System cooling Fan Connector (optional)

| Pin | Signal Name | Function |
|---|---|---|
| 1 | GND | System Ground |
| 2 | +12V | Power +12V |
| 3 | Sense | Sense |
| 4 | Control | Control |

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

### PWR_FAN/SYS_FAN1: FAN Power Connectors (optional)

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

### ATX_POWER1: ATX 24-pin Power Connector

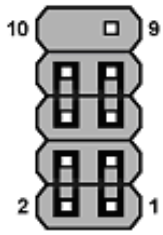
| Pin | Signal Name | Pin | Signal Name |
|---|---|---|---|
| 1 | +3.3V | 13 | +3.3V |
| 2 | +3.3V | 14 | -12V |
| 3 | Ground | 15 | Ground |
| 4 | +5V | 16 | PS_ON |
| 5 | Ground | 17 | Ground |
| 6 | +5V | 18 | Ground |
| 7 | Ground | 19 | Ground |
| 8 | PWRGD | 20 | -5V |
| 9 | +5VSB | 21 | +5V |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

### ATX12V: ATX 12V Power Connector

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

### *Front Panel Header*

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




PANEL1

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

** MSG LED (dual color or single color)*

#### *Hard Drive Activity LED*

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

#### *Power/Sleep/Message waiting LED*

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

#### *Reset Switch*

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

#### *Power Switch*

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

# Installing Hardware

## *Installing the Processor*

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

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

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

### Before installing the Processor

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

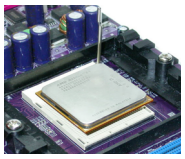
*Warning: Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.*

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

## CPU Installation Procedure

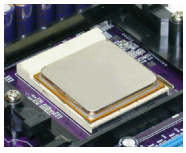
The following illustration shows CPU installation components.

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 Memory Modules*

This motherboard accommodates two 240-pin unbuffered Double Data Rate (DDR) SDRAM (Synchronous Dynamic Random Access Memory) memory modules, and can support DDR2 800/667/533/400 memory types. Each module can be installed with 8 GB of memory, and its total maximum memory size is 16 GB.

#### DDR2 SDRAM memory module table

| Memory module | Memory Bus |
|---|---|
| DDR2 400 | 200 MHz |
| DDR2 533 | 266 MHz |
| DDR2 667 | 333 MHz |
| DDR2 800 | 400 MHz |


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

**Table A: Unbuffered DIMM Address Timings and Drive Strengths for AM2 Package**

| DRAM Speed | DIMM1[1] | DIMM2[1] | Timing Mode | Address Timing Control Register | Output Driver Compensation Control Register |
|---|---|---|---|---|---|
| DDR2-400 | - | Any | 1T | 002F_2F2Fh | X011_1222h |
| DDR2-400 | Any | Any | 2T | 002F_2F2Fh | X011_1322h |
| DDR2-533 | - | Any | 1T | 002F_2F2Fh | X011_1222h |
| DDR2-533 | SRx16 | SRx16 | 2T | 002F_2F2Fh | X011_1322h |
| | SRx16 | SRx8 | | | |
| | SRx8 | SRx16 | | | |
| DDR2-533 | SRx8 | SRx8 | 2T | 0000_2F2Fh | X011_1322h |
| DDR2-533 | DRx8 | DRx8 | 2T | 0034_2F2Fh | X011_1322h |
| DDR2-533 | DRx8 | SRx16 | 2T | 0038_2F2Fh | X011_1322h |
| | SRx16 | DRx8 | | | |
| DDR2-533 | DRx8 | SRx8 | 2T | 0037_2F2Fh | X011_1322h |
| | SRx8 | DRx8 | | | |
| DDR2-667 | - | Any | 1T | 0020_2020h | X011_1222h |
| DDR2-667 | SRx16 | SRx16 | 2T | 0020_2020h | X011_1322h |
| | SRx16 | SRx8 | | | |
| | SRx8 | SRx16 | | | |
| DDR2-667 | SRx8 | SRx8 | 2T | 0030_2020h | X011_1322h |
| DDR2-667 | DRx8 | DRx8 | 2T | 002B_2020h | X011_1322h |
| DDR2-667 | DRx8 | SRx16 | 2T | 002C_2020h | X011_1322h |
| | SRx16 | DRx8 | | | |
| DDR2-667 | DRx8 | SRx8 | 2T | 002A_2020h | X011_1322h |
| | SRx8 | DRx8 | | | |
| DDR2-800 | - | Any | 2T | 0020_2520h | X011_3222h |
| DDR2-800 | Any | Any | 2T | 0020_2520h | X011_3222h |

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

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

The following DDR2 800/667/533/400 memory modules have been tested and qualified for use with this motherboard.

| Size | Vendor | Model Name |
|---|---|---|
| 256MB | CORSAIR | VC256MB533D24PB11D9CHM |
| | Eipida | 04180WB00 |
| | Infineon | HYS64T325001HU-3-A |
| | Kingston | HYB18T512260AF-3.7 |
| | Kingston | E5116AF-5C-E |
| | Kingmax | HY5PS121621 |
| | Nanya | NT5TU32M16AG-37B |
| | Ramaxel | E5116AF-5C-E |
| | SAMSUNG | K4T5163QB-ZCCC |
| 512MB | A-DATA | AD29608A88-3EG |
| | A-DATA | E5108AE-6E-E |
| | CORSAIR | 0434028-0 4PB11D9CHM |
| | CORSAIR | K4T51083QF-ZCD5 |
| | CORSAIR | VALUESELECT 32M8CEC |
| | Eipida | 04180WB01 |
| | GEIL | GL2L64MO88BA18W |
| | Infineon | Y818T512800AF373346778 |
| | Infinity | 0547W64M8 |
| | Kingston | HY5PS12821 |
| | Kingston | HY5PS56821 |
| | Kingston | HYB18T512800AF37 |
| | SAMSUNG | K4T51083QB-GCCC |
| | SAMSUNG | K4T51083QC |
| | SAMSUNG | K4T56083QF-ZCE6 |
| | SIS | SLX264M8-T6E |
| | SyncMAX | E5108AB-5C-E |
| | Transcend | K4T51083QC |
| | TwinMOS | Elpida 8D22JB-ED |
| | TwinMOS | Hynix 8D22JB-HX |
| | TwinMOS | K4T51083QB-GCCC |
| | TwinMOS | TMM6208G8M30B |
| 1GB | Apacer | E5108AB-5C-E |
| | Apacer | E5108AE-6E-E |
| | GEIL | AG8AKT5H120004 |
| | Infineon | HY818T512800AF3733344539 |
| | Infineon | HYB18T512800AF3S |
| | Kingmax | KKEA88E4AAKKG-37 |
| | UMAX | U2S12030TP-5C |
| | UMAX | U2S12030TP-6E |

## *Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive*

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

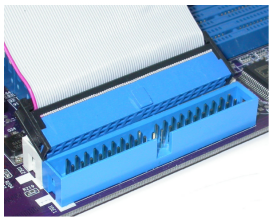
### About IDE Devices

Your motherboard has a primary and secondary IDE channel interface (IDE1 and IDE2). An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

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

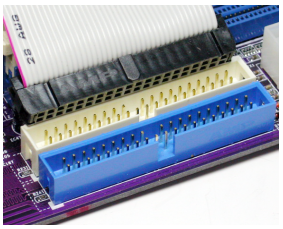
#### IDE1: Primary IDE Connector

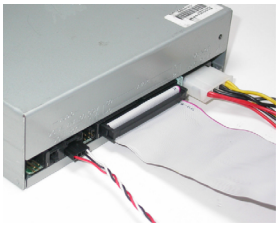
The first hard drive should always be connected to IDE1.



#### IDE2: Secondary IDE Connector

The second drive on this controller must be set to slave mode. The configuration is the same as IDE1.





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

### About UltraDMA

This motherboard supports UltraDMA 133/100/66. UDMA is a technology that accelerates the performance of devices in the IDE channel. To maximize performance, install IDE devices that support UDMA and use 80-pin IDE cables that support UDMA 133/100/66.

## About SATA Connectors

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

## Installing Serial ATA Hard Drives

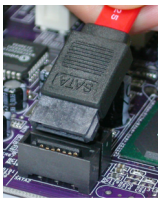
To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

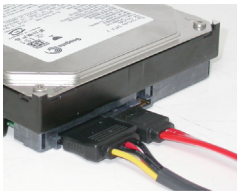
**SATA cable** (optional)

**SATA power cable** (optional)

Refer to the illustration below for proper installation:

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





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

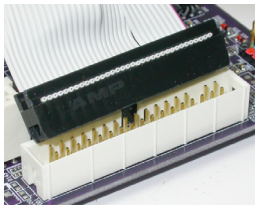
### *Installing a Floppy Diskette Drive*

The motherboard has a floppy diskette drive (FDD1) 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.*

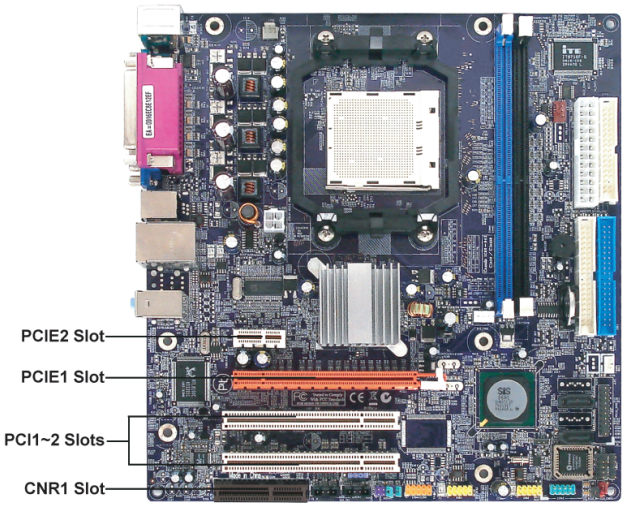
#### FDD1: Floppy Disk Connector

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



## *Installing Add-on Cards*

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




**PCIE2 slot** The PCI Express x1 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well

**PCIE1 slot** The PCI Express x16 slot is fully compliant to the PCI Express Base Specification revision 1.0a as well

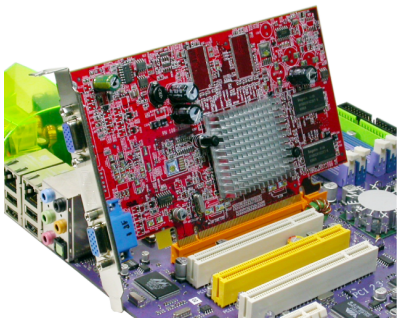
**PCI Slots** This motherboard is equipped with three standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

**CNR1 Slot (optional)** This slot is used to insert CNR cards with Modem and Audio functionality.

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

Follow these instructions to install an add-on card:

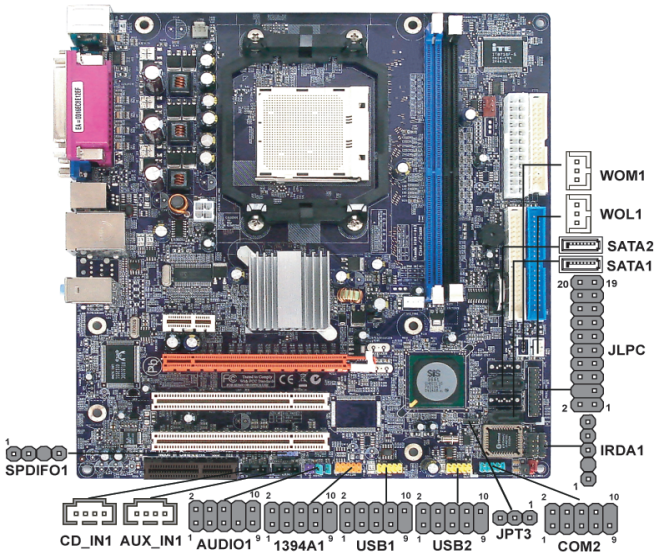
1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.



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

## *Connecting Optional Devices*

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




### AUDIO1: Front Panel Audio header

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

| Pin | Signal Name | Function |
|---|---|---|
| 1 | AUD_MIC | Front Panel Microphone input signal |
| 2 | AUD_GND | Ground used by Analog Audio Circuits |
| 3 | AUD_MIC_BIAS | Microphone Power |
| 4 | AUD_VCC | Filtered +5V used by Analog Audio Circuits |
| 5 | AUD_F_R | Right Channel audio signal to Front Panel |
| 6 | AUD_RET_R | Right Channel Audio signal to Return from Front Panel |
| 7 | REVD | Reserved |
| 8 | Key | No Pin |
| 9 | AUD_F_L | Left Channel Audio signal to Front Panel |
| 10 | AUD_RET_L | Left Channel Audio signal to Return from Front Panel |

### AUDIO1: Front Panel Audio header

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

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

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

### USB1~2: Front Panel USB headers

The motherboard has two 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 | USBPWR0 | Front Panel USB Power |
| 2 | USBPWR1 | Front Panel USB Power |
| 3 | USB_FP_P0- | USB Port 0 Negative Signal |
| 4 | USB_FP_P1- | USB Port 1 Negative Signal |
| 5 | USB_FP_P0+ | USB Port 0 Positive Signal |
| 6 | USB_FP_P1+ | USB Port 1 Positive Signal |
| 7 | GND | Ground |
| 8 | GND | Ground |
| 9 | Key | No pin |
| 10 | USB_FP_OC0 | Overcurrent signal |

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

### 1394A1: IEEE 1394a header (optional)

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

| Pin | Signal Name | Pin | Signal Name |
|---|---|---|---|
| 1 | TPA+ | 2 | TPA1- |
| 3 | GND | 4 | GND |
| 5 | TPB+ | 6 | TPB- |
| 7 | +12V | 8 | +12V |
| 9 | Key | 10 | GND |

### COM2: Onboard serial port connector (optional)

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

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

### WOL1: Wake On LAN connector (optional)

If you have installed an LAN card, use the cable provided with the card to plug into the WOL connector onboard. This enables the Wake On LAN (WOL1) feature. When your system is in a power-saving mode, any LAN signal automatically resumes the system. You must enable this item using the Power Management page of the Setup Utility in the BIOS. See Chapter 3 for more information.

| Pin | Signal Name | Function |
|---|---|---|
| 1 | 5VSB | +5V stand by power |
| 2 | GND | Ground |
| 3 | SENSE | Wake up signal (high active) |

### WOM1: Wake On Modem connector (optional)

If you have installed a modem, use the cable provided with the modem to plug into the motherboard WOM connector. This enables the Wake On Modem (WOM1) feature. When your system is in a power-saving mode, any modem 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 | SENSE | Wake up signal (low active) |

### SATA1/2: Serial ATA connectors

These connectors are use to support the new Serial ATA devices for the highest date 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 | - | - |

### IRDA1: Infrared header

The motherboard supports one Infrared (IRDA1) data port. Infrared port allows the wireless exchange of information between your computer and similarly equipped devices such as printers, laptops, Personal Digital Assistants (PDAs), and other computers.

| Pin | Signal Name | Function |
|---|---|---|
| 1 | VCC | IR Power |
| 2 | Key | No pin |
| 3 | IRRX | IrDA serial input |
| 4 | GND | Ground |
| 5 | IRTX | IrDA serial ouput |

### AUX_IN1: Auxiliary In connector (optional)

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

| Pin | Signal Name | Function |
|---|---|---|
| 1 | AUXIN_R | AXU In right channel |
| 2 | GND | Ground |
| 3 | GND | Ground |
| 4 | AUXIN_L | AXU In left channel |

### CD_IN1: Analog Audio Input header

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

### SPDIOF1: SPDIF out header

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

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

### JLPC: JLPC Connector (optional)

| Pin | Signal Name | Pin | Signal Name |
|---|---|---|---|
| 1 | LCLK | 2 | GND |
| 3 | LFRAME- | 4 | KEY |
| 5 | LREST- | 6 | SMBDAT |
| 7 | LAD3 | 8 | LAD2 |
| 9 | VCC3 | 10 | LAD1 |
| 11 | LAD3 | 12 | GND |
| 13 | VCC3 | 14 | RSVD |
| 15 | LAD0 | 16 | SIRQ |
| 17 | PPJ | 18 | GND |
| 19 | VCC3_DUAL | 20 | RSVD |

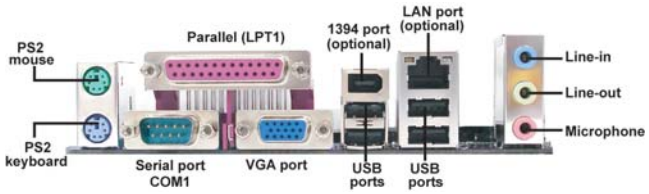
### JPT3: JPT3 header (optional)

This is an optional header that used for network identification.

| Pin | Signal Name |
|---|---|
| 1 | GND |
| 2 | PPJ |
| 3 | VCC3 |

## Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:




**PS2 Mouse** Use the upper PS/2 port to connect a PS/2 pointing device.

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

**Parallel Port (LPT1)** Use LPT to connect printer or other parallel communication devices.

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

**VGA Port** Connect your monitor to the VGA port.

**LAN Port (optional)** Connect an RJ-45 jack to the LAN port to connect your computer to the network.

**1394A1 Port (optional)** Use the 1394A1 port to connect any firewire device.

**USB Ports** Use the USB ports to connect USB devices.

**Audio Ports** Use the three audio ports 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.

# Chapter 3
# *Using BIOS*

## About the Setup Utility

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

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

The BIOS Setup Utility enables you to configure:

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

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

This chapter provides explanations for Setup Utility options.

### *The Standard Configuration*

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

This Setup Utility should be used:

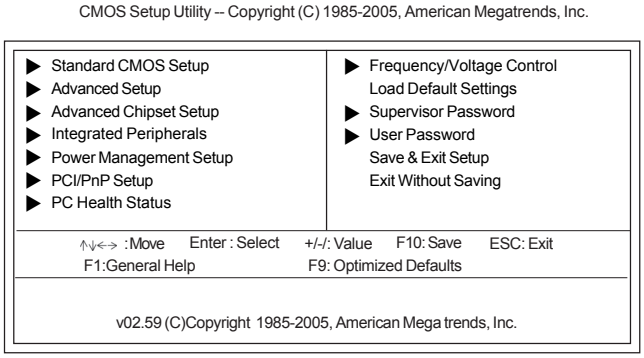
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security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

### *Entering the Setup Utility*

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

***Press DEL to enter SETUP***

Press the delete key to access the BIOS Setup Utility.




## *BIOS Navigation Keys*

The BIOS navigation keys are listed below:

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

### *Updating the BIOS*

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

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.
3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
5. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
6. At the A:\ prompt, type the Flash Utility program name and the filename of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
7. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

## Using BIOS

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

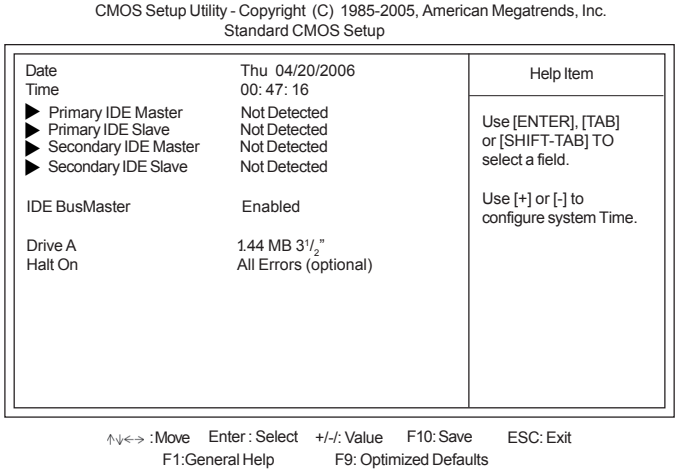
Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

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

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

## *Standard CMOS Setup*

This option displays basic information about your system.




### System Date and Time

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

### ►Primary/Secondary IDE Master/Slave

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

### IDE BusMaster (Enabled)

These items allow users to enable or disable IDE BusMater function.

### Drive A/ (1.44 MB $3^1/_2$)

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

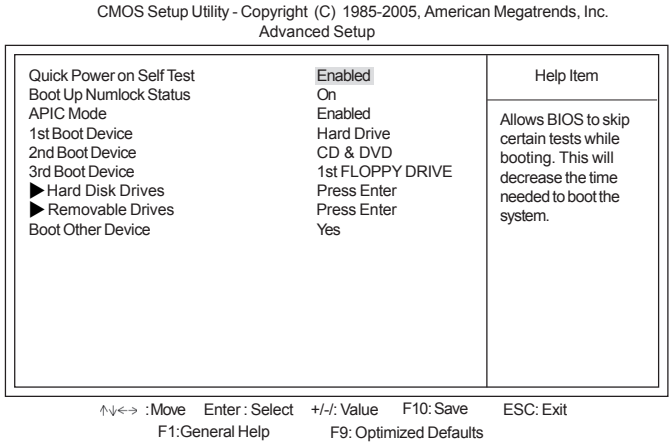
### Halt On (All Errors) (optional)

This items 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.

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

## *Advanced Setup*

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




### Quick 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.

### Boot Up Numlock Status (On)

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

### APIC Mode (Enabled)

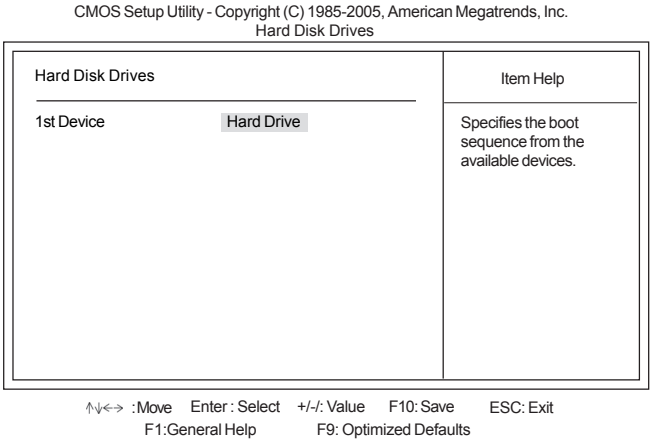
This item allows you to enable or disable the APCI (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

### 1st/2nd3rd Boot Device

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

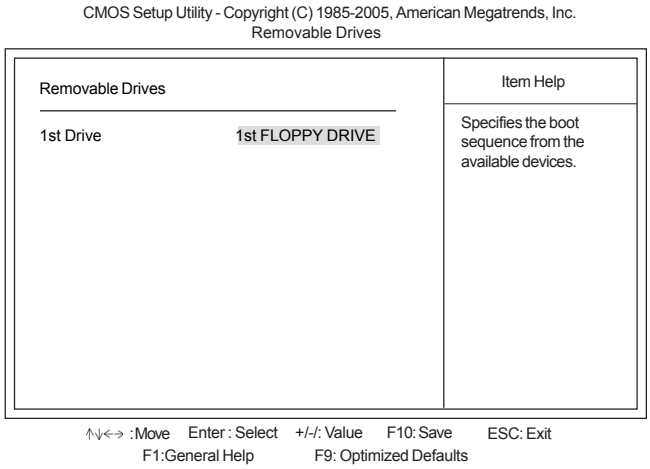
### ► Hard Disk Drives

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




### ► Removable Drives

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



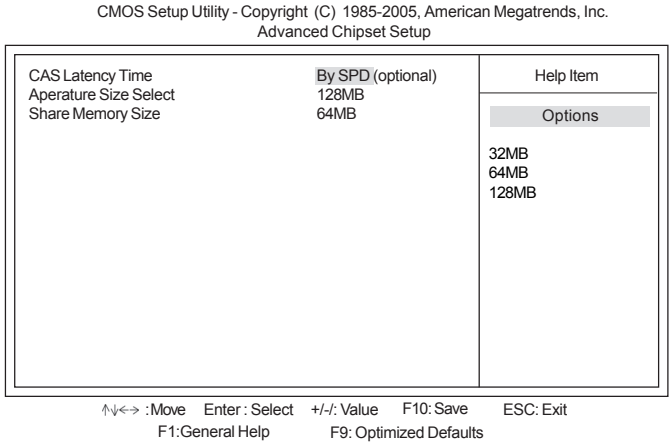

### Boot Other Device (Yes)

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.

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

## *Advanced Chipset Setup*

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




### CAS Latency Time (By SPD) (optional)

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

### Aperature Size Select (128MB)

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

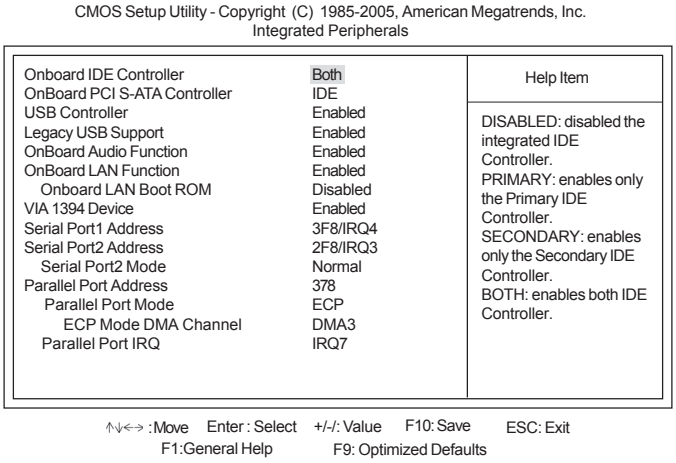
### Share Memory Size (64MB)

This item shows the VGA memory size borrowed from main memory capacity. In this case, 32MB is borrowed, which in the meanwhile the same the main memory loses.

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

## *Integrated Peripherals*

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




**Onboard IDE Controller (Enabled)**

Use this item to enable or disable the onboard IDE interface.

**Onboard PCI S-ATA Controller (IDE)**

Use this item to enable or disable the onboard PCI SATA controller.

**USB Controller (Enabled)**

Use this item to enable or disable the USB controller.

**Legacy USB 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 device at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

**OnBoard Audio Function (Enabled)**

Use this item to enable or disable the onboard Audio function.

**OnBoard LAN Function (Enabled)**

Use this item to enable or disable the onboard LAN function.

**OnBoard LAN Boot ROM (Disabled)**

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

**VIA 1394 Device (Enabled)**

Use this item to enable or disable the onboard VIA 1394 device.

**Serial Port1 Address (3F8/IRQ4)**

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

**Serial Port2 Address (2F8/IRQ3)**

Use this item to enable or disable the onboard COM2 serial port, and to assign a port address.

**Serial Port2 Mode (Normal)**

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

**Parallel Port Address (378)**

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

**Parallel Port Mode (ECP)**

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

**ECP Mode DMA Channel (DMA3)**

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

**Parallel Port IRQ (IRQ7)**

Use this item to assign IRQ to the parallel port.

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

## *Power Mangement Setup*

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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Power Management Setup

| | | Help Item |
|---|---|---|
| ACPI Suspend Type | S3 | |
| Soft-off by PWR-BTTN | Delay 4 Sec | Select the ACPI state used for System Suspend. |
| PWRON After PWR-Fail | Power Off | |
| Resume on Lan | Disabled | |
| Wake-Up by PME | Enabled | |
| Power On by Ring | Disabled | |
| USB KB Wake Up from S3 | Disabled | |
| PS2 Keyboard Wakeup | Disabled | |
| PS2 Mouse Wakeup | Disabled | |
| Resume on RTC Alarm | Disabled | |

↑↓←→: Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

**ACPI Suspend Type (S3)**

Use this item to define how your system suspends. In the default, S3, 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.

**Soft-Off By PWR-BTTN (Delay 4 Sec)**

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 (Power Off)**

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

**Resume on LAN (Disabled)**

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

**Wake-Up by PME (Enabled)**

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

**Power On by Ring (Disabled)**

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

**USB KB Wake Up from S3 (Disabled)**

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

**PS2 Keyboard Wakeup (Disabled)**

This item enable or disable you to allow keyboard activity to awaken the system from power saving mode.

**PS2 Mouse Wakeup (Disabled)**

This item enable or disable you to allow mouse activity to awaken the system from power saving mode.

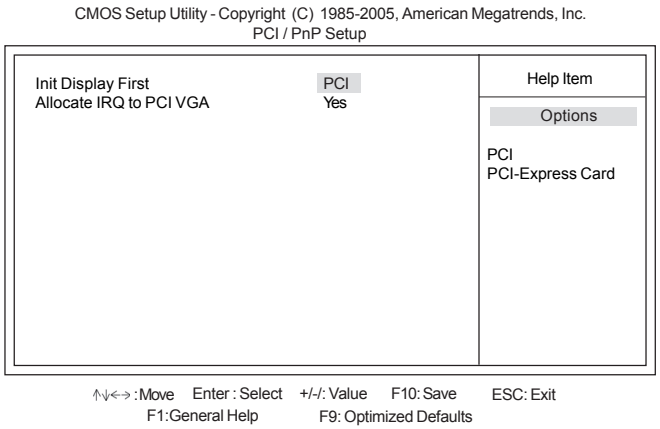
**Resume on RTC Alarm (Disabled)**

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

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

## *PCI / PnP Setup*

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




### Init Display First (PCI)

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.

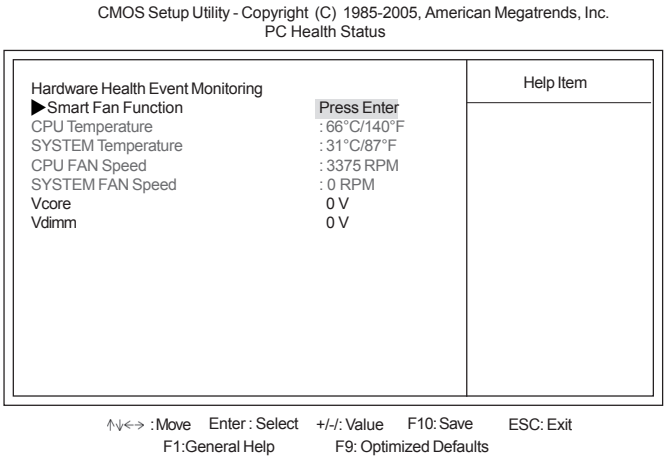
### Allocate IRQ to PCI VGA (Yes)

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

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

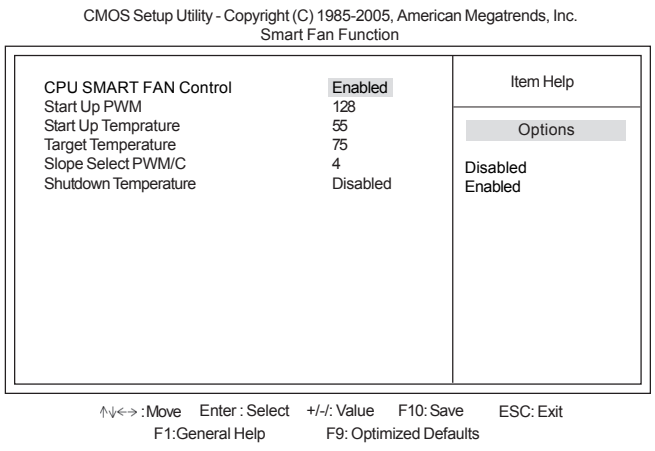
## *PC Health Status*

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




### ▶ Smart Fan Function

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




### SMART Fan Control (Enabled)

This item allows you to enable/disable the control of the system fan speed by changing the fan voltage.

**Start Up PWM (128)**
Enable you to set the start up PWM value.
**Start Up Temprature (55)**
Enable you to set the start up temperature of the smart fan.
**Target Temprature (75)**
This item enables throttling when CPU targets the temperature.
**Slope Select PWM/C (4)**
This item enables you to set the PWM value per degree.
**Shutdown Temperature (Disabled)**
Enable you to set the maximum temperature the system can reach before powering down.

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

**System Component Characteristics**
These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- Vcore
- Vdimm

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

## *Frequency/Voltage Control*

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

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Frequency/Voltage Control

| | | |
|---|---|---|
| Processor | | Help item |
| Type | : AMD Processor model unknown | |
| CPU OVERCLOCK | 200 (optional) | CPU Freq Over Clock |
| Auto Detect DIMM/PCI Clk | Enabled | 200 to 255 MHz |
| Spread Spectrum | Disabled | |

↑↓←→ :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

**Processor**

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

**CPU OVERCLOCK (200) (optional)**

This item allows users to manually adjust the CPU clock.

**Auto Detect DIMM/PCI Clk (Enabled)**

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

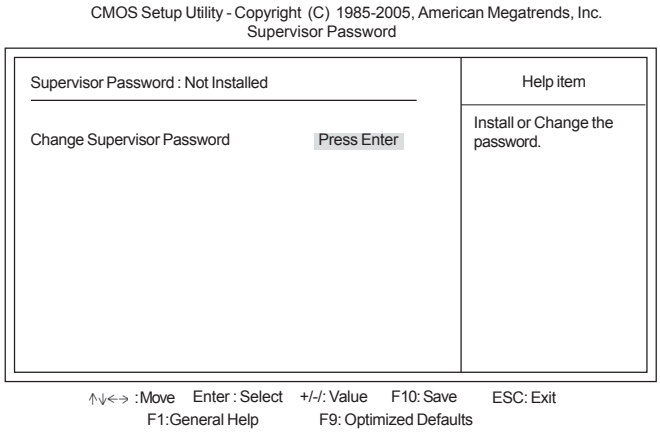
**Spread Spectrum (Disabled)**

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

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

## *Supervisor Password*

This page helps you install or change a password.




**Supervisor Password (Not Installed)**

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

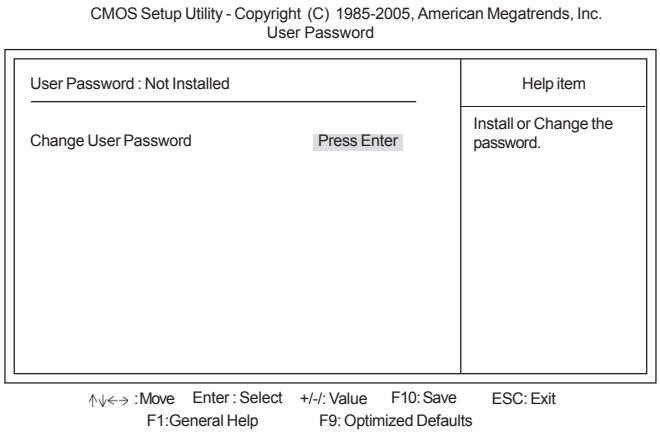
**Change Supervisor Password (Press Enter)**

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

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

## *User Password*

This page helps you install or change a password.




### User Password (Not Installed)

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

### Change User Password (Press Enter)

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

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

### *Load Default Settings*

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

### *Save & 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, select [OK] to save and exit, or select [Cancel] 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, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

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

# Chapter 4
# *Using the Motherboard Software*

## About the Software CD-ROM

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

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

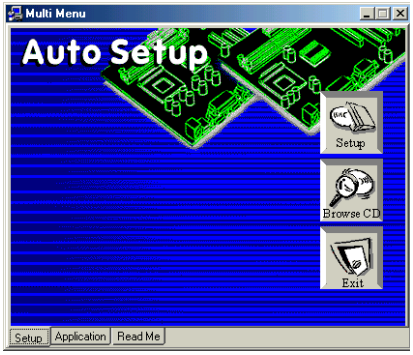
*The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Win-dows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Usersneed to download and install the update packages from the Microsoft DownloadCenter "before" install-ing HD audio driver bundled in the Driver CD. Please logon to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliestofor 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 Ex-plorer). Refer to the Utility Folder Installation Notes later in this chapter.*

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




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

### Setup Tab

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

### Application Tab

Lists the software utilities that are available on the CD.

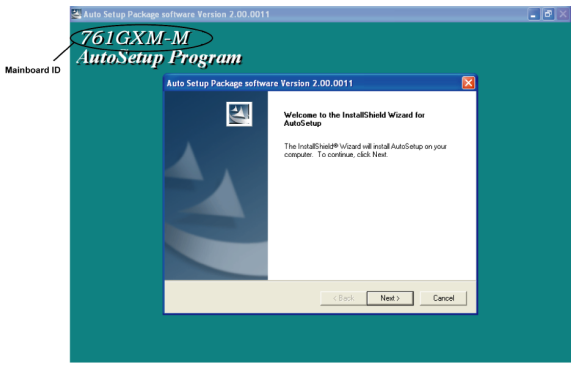
### Read Me Tab

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

## *Running Setup*

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

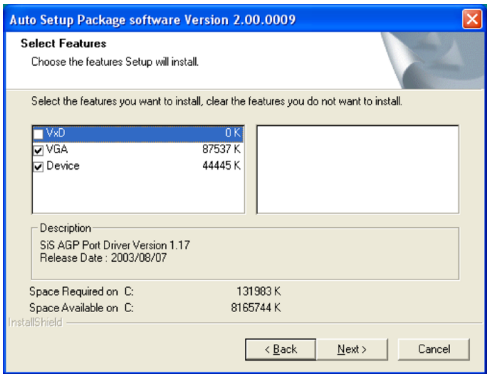
1. *Click **Setup**. The installation program begins:*



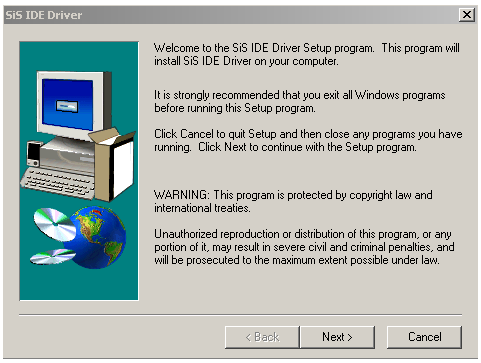

*The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.*

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

2. *Click **Next.** The following screen appears:*




3. *Check the box next to the items you want to install. The default options are recommended.*
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*




5. *Follow the instructions on the screen to install the items.*

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

## Manual Installation

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

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

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

## Utility Software Reference

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

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

### *AMI/AWARD Flash Utility*

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

### *WinFlash Utility*

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

This concludes Chapter 4.

# Chapter 5
# SiS966/966L SATA RAID Setup Guide

## Introduction for SiS966/966L SATA RAID Function

The 966 S-ATA controller supports four serial ATA on two independent ports, and The 966/966L S-ATA controller supports two serial ATA. The Serial ATA RAID is designed to provide a cost-effective, high performance RAID solution that adds performance and/or reliability to PC desktops and/or servers using Serial ATA/150 hard disks.

Serial ATA RAID function supports striping (RAID 0), mirroring (RAID 1), striping + mirroring (RAID 0+1) and span (JBOD). Please note that the function supports hard disk drives only and the 966L S-ATA controller don't support Striping + mirroring (Raid 0+1).

With striping, identical drives can read and write data in parallel to increase performance. Mirroring increases read performance through load balancing and elevator sorting while creating a complete backup of your files. Span would increase the logic hard disk space.

Serial ATA RAID striped arrays can double the sustained data transfer rate of Serial ATA/150. Serial ATA RAID fully supports Serial ATA/150 specification of up to 150 MB/sec per drive, depending on individual drive specifications.

## Features

- The SiS966 controller support four Serial ATA (Serial ATA RAID) drivers; while the SiS966/966L controller support two Serial ATA drivers.
- Support RAID function: RAID 0, RAID 1, RAID 0+1(SiS966 only), JBOD.
- Support bootable disk.
- Windows-based RAID Utility software tool (only support Windows XP and 2000).
- BIOS Utility.

## Support Operating Systems

Support Microsoft Windows 2000/XP Professional and Server/XP.

## What is RAID?

This section will give you an overview about the RAID system and introduce the basic background and glossary which you need to know before using "SiS RAID Controller Application".

1 **RAID:** (Redundant Array of Independent Disk Drives) use jointly several hard drives to increase data transfer rates and data security. It depends on the number of drives present and RAID function you select to fulfill the security or performance purposes or both.

2 **RAID 0:** Also known as "Stripping". All of the data are distributed evenly to all of the existing drives. You gain benefits on performance because the data transfer rate is multiplied by the number of drives. However, RAID 0 has high risks of data security. All of the stored data will be lost if even any one drive in the RAID set crashes.

3 **RAID 1:** Also known as "Mirroring". Two hard drives are required. The goal of RAID 0 is to ensure data security. Data is written to two or more drives synchronously. That is, 100% duplication of data from one drive to another.

3 **RAID 0+1**: Also known as “StripeMirror”. At least four hard drivers are required. RAID 0+1 is a combination of RAID 0 and RAID 1. Data is striped into two drives then mirrored. It provides high performance and high data protection. This is a costly solution as RAID 1 because the two mirrored drives represent an expensive insurance

4 **JBOD:** (Just a Bunch of Drives). Also known as “Spanning”. Two or more hard drives are required. Several hard disk types configured as a single hard disk. The hard drives are simply hooked up in series. This expands the capacity of your drive and results in a useable total capacity. However, JBOD will not increase any performance or data security.

## Installing Software Drivers

SiS provides RAID driver for SiS966/966L SATA with RAID function.

1 For RAID function, SiS966/966L support RAID 0, RAID 1, RAID 0+1(SiS966 only), and JBOD by software RAID driver only.
2 Support the function of installing windows to RAID array.

### *New Windows 2000/XP Installation*

1 Start the installation:
Boot from the CD-ROM. Press F6 when the message “Press **F6** key if you need to install third party SCSI or RAID driver” appears.
2 When the Windows 2000/XP Setup window is generated, press **S** key to specify an Additional Device(s).
3 Insert the driver diskette into drive A: and press Enter.
4 Choose one of the following items:
***“WinXP SiS Raid/IDE Controller”,***
***“Win2000 SiS Raid/IDE Controller”,***
that appears on screen, and then press the Enter key.
5 Press Enter to continue with installation or if you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, Press Enter to continue with installation.
6 From the Windows 2000/XP Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000/XP installation.
7 Please install the driver package again (ex. SiS RAID driver v1.00) while the operation system has been setup.

*If you would like to install windows to any RAID set, you should create RAID from BIOS utility or SiS 966*/966L *RAID Utility first and then follow the steps above.*

### *Existing Windows 2000/XP Installation*

1 Install the driver by executing SiS driver setup utility.
2 The drivers will be automatically installed.

### *Confirming Windows 2000/XP Driver Installation*

1 From Windows 2000/XP, open the Control Panel from “My Computer” followed by the System icon.
2 Choose the “Hardware” tab, then click the “Device Manager” tab.
3 Click the “+” in front of “SCSI and RAID Controllers” hardware type. The driver *“WinXP SiS180 Raid Controller*” (for RAID) or “*Win2000/XP SiS180 IDE Controller*” (for SATA) should appear.

# BIOS Utility Operation

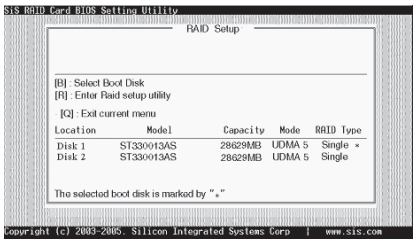
BIOS Utility supports windows 2000/XP.

## *Starting BIOS Utility*

1 Boot your system. If this is the first time you have booted with the SiS966/966L and the drives installed, the BIOS will display the following:

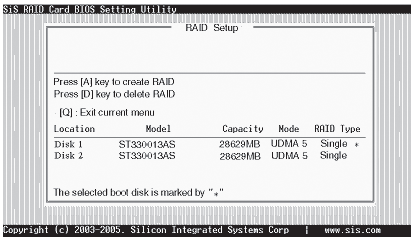
```
Silicon Integrated Systems Corp. RAID BIOS Setting Utility 1.00.0.XX
(c) 2003-2006 Silicon Integrated Systems Corp. All Rights Reserved.

Press <Ctrl.<S> to run BIOS Setting Utility
```

2 Press <Ctrl-S> keys to display the SiS966/966L Utility Main Menu.




3 You can press <B> key to select the boot disk on the 966/966L controller. The yellow highlight will show on the disk and you can switch it to select the disk you wanted. Press “Enter” key to select it and the selected boot device will be marked by “*****”. The default boot device will be set as **Disk 1**.

4 Press <R> to display the RAID setup menu below. This is the fastest and easiest method to creating your first array.



## *Create RAID*

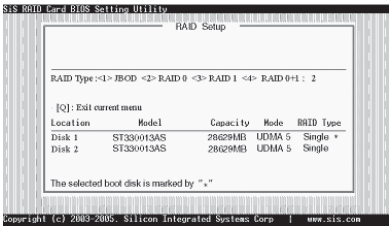
- SIS966/966L controller support RAID 0, RAID 1 and JBOD.

## *Creating a RAID 0 (Stripe) Array for Performance*

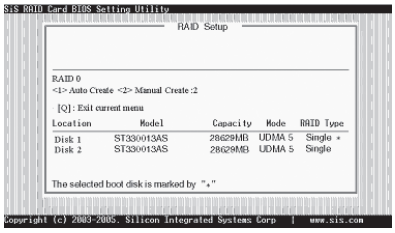
- SiS 180 enables users to create striped arrays with 1, 2, 3, or 4 drives.
- SiS966L supports 2 SATA drivers and SiS966 supports 4 SATA drivers to create a stripe array.

To create an array for best performance, follow these steps:

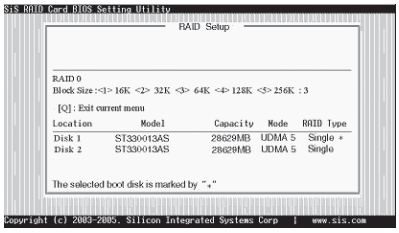
1 Press <A> to start creating a RAID array.
2 Press <2> and <Enter> to select RAID 0.



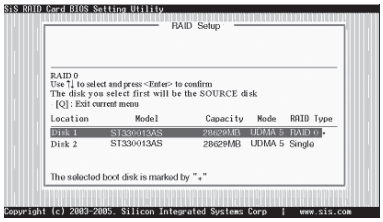

3 You will have two selections to create a RAID 0 array. **The default value is <1>**. If you select **<1>Auto Create**, you can create a RAID 0 array faster and easier. The Blocksize will be selected by its default value “64K”. The result after creating will be show on **step 8**. Besides, you also can select **<2>Manual Create**, see following steps.



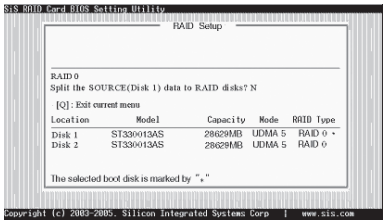

4 Press <1>-<5> keys and <Enter> to select Block Size. (Default:64K)



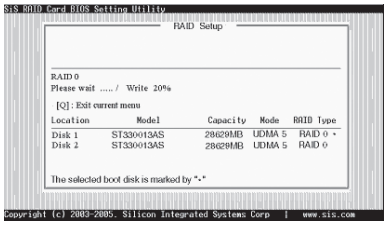
5 Use <↑ > < ↓ > to select disk, and press <Enter> to select disk, <Q> to exit. When you press <Enter> on the disk you wanted, the RAID Type will be changed from Single to RAID 0. An the disk you select first will be the SOURCE disk.



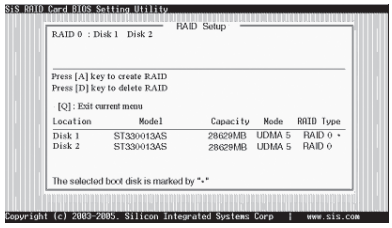

6 Next, you will see a message “Split the SOURCE(DISK x) data to RAID disks?”. Press <N> and <Enter> to create RAID 0 array only or press <Y> and <Enter> to split the data from source disk to other disks.




7 Starting splitting action, the following frame will be shown.

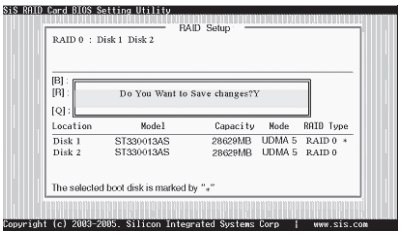



8 After all steps finished, press ,<Q> until escape the setup menu and RAID 0 array will be show on the top of the main frame.



9 Press <Q> again to exit this BIOS utility and the red message frame will show. Press <Y> and <Enter> to save changes.

10 Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.

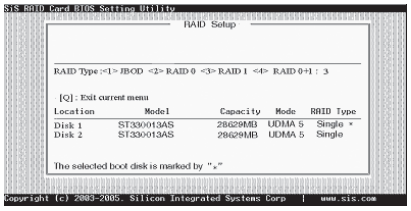



## *Creating a RAID 1 (Mirror) Array*

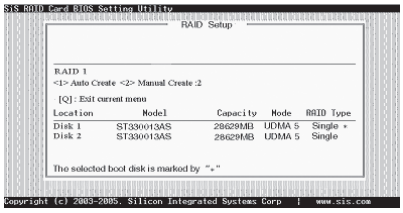
To create a Mirror array, follow these steps:

1 Press <A> to start creating a RAID array.

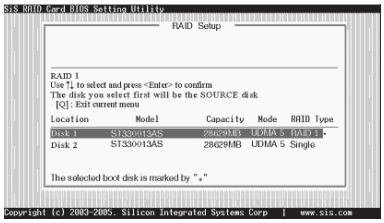
2 Press <3> and <Enter> to select Mirror.



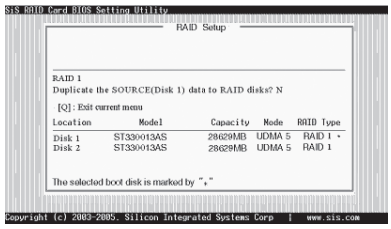

3 You will have two selections to create a RAID 1 array. **The default value is <1>**. If you select **<1>Auto Create**, you can create a RAID 1 array faster and easier. The result after creating will be show on **step 7**. Besides, you also can select **<2>Manual Create**, see following steps.



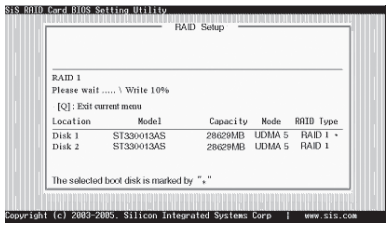
4 Use <↑ > < ↓ > to select disk, and press <Enter> to select disk, <Q> to exit. When you press <Enter> on the disk you wanted, the RAID Type will be changed from **Single** to **RAID 1**. The same as RAID 0, the disk you select first will be the SOURCE disk.



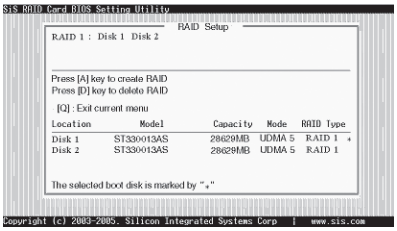

5 Next, you will see a message “Duplicate the SOURCE (DISK x) data to RAID disks?”. Press <N> and <Enter> to create RAID 1 array only or press <Y> and <Enter> to duplicate the data from source disk to mirror disk.




6 Starting duplicating action, the following frame will be showing.




7 After all steps finished, press <Q> until escape the setup menu and RAID 1 array will be show on the top of the main frame.



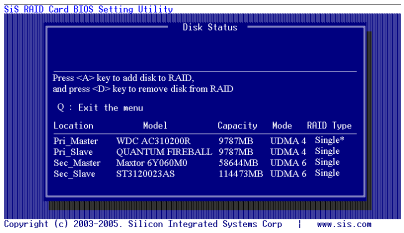
8 Press <Q> again to exit this BIOS utility and the red message frame will show as the same as the creation of the RAID 0 array. Press <Y> and <Enter> to save changes.

9 Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.

### *Creating a RAID 0+1 (Stripe-Mirror) Array*

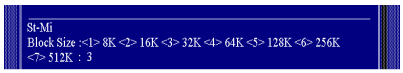
To create a Stripe-Mirror array, follow these steps:

1 Press <A> to start creating array.



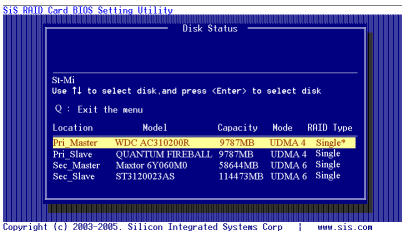

2 Press <4> and <Enter> to select Strpie-Mirror.


3 Press <1>%<7> keys and <Enter> to select Block Size. ( Default : 32K )

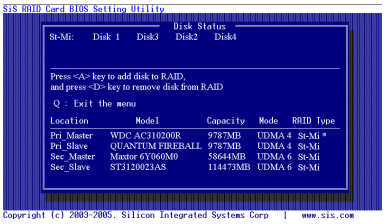



4 Press <1>%<2> keys and <Enter> to select Transfer Mode. ( Default : DMA )

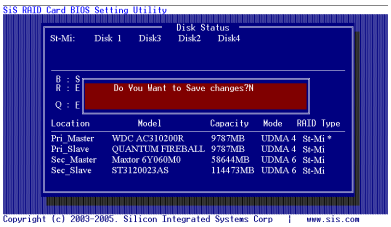

5 Use<'!> <"!> to select disk , and press <Enter> to select disk, <Q> to exit.



6 Press <Q> until escape the setup menu




7 Press <Y> and <Enter> to save changes.




8 Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.

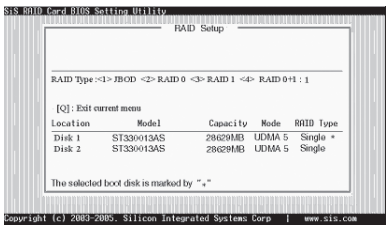
## *Creating a JBOD Array*

*1 SIS 180 enables users to create JBOD arrays with 2,3, or 4 drives.*

*2 SIS966 supports 4 SATA drivers (SIS966L supports 2 SATA drivers) to create a JBOD arrays.*

To create an JBOD array, follow these steps:

1 Press <A> to start creating a RAID array.
2 Press <1> and <Enter> to select JBOD.
3 You will have two selections to create a JBOD array. **The default value is <1>**. If you select **<1>Auto Create**, you can create a JBOD array faster and easier. The result after creating will be show on **step 5**. Besides, you also can select **<2>Manual Create**, see following steps.

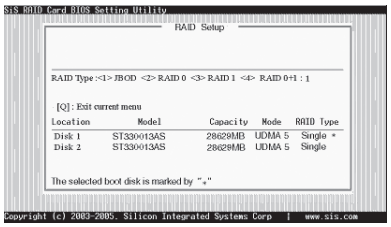


### *Creating a JBOD Array*

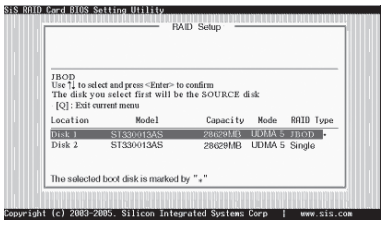
*1 SIS 180 enables users to create JBOD arrays with 2,3, or 4 drives.*
*2 SIS966 supports 4 SATA drivers (SIS966L supports 2 SATA drivers) to create a JBOD arrays.*

To create an JBOD array, follow these steps:

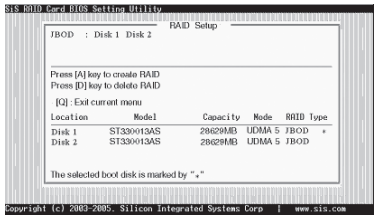
1 Press <A> to start creating a RAID array.
2 Press <1> and <Enter> to select JBOD.
3 You will have two selections to create a JBOD array. **The default value is <1>**. If you select **<1>Auto Create**, you can create a JBOD array faster and easier. The result after creating will be show on **step 5**. Besides, you also can select **<2>Manual Create**, see following steps.




4 Use <↑> < ↓ > to select disk, and press <Enter> to select disk, <Q> to exit. When you press <Enter> on the disk you wanted, the RAID Type will be changed from **Single** to **JBOD**.




5 After all steps finished, press <Q> until escape the setup menu and JBOD array will be show on the top of the main frame.




6 Press <Q> again to exit this BIOS utility and the red message frame will show as the same age as the creation of the RAID 0 array. Press <Y> and <Enter> to save changes.
7 Once the array has been created, you will need to FDISK and format the array as if it were a new single hard drive.

This concludes Chapter 5.

# Caractéristiques

## Processeur

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

- Peut recevoir les processeurs AMD Athlon 64 FX/Athlon 64 X2 double noyau/Athlon 64/Sempron
- 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 SiS761GX Northbridge (NB) et SiS966(L) Southbridge (SB) sont basés sur une architecture novatrice et dimensionnable avec une fiabilité et des performances prouvées.

***SiS761GX (NB)***

- SiS MuTIOL est incorporé pour connecter les ES Médias MuTIOL SiS761GX et SiS966
- Prend en charge la Technologie HyperTransport ™ jusqu'à une bande passante de 2000MT/s
- Pont MuTIOL 1G vers PCI Express x1 intégré, conforme à PCI Express spéc. 1.0a
- Prend une mémoire d'affichage allant jusqu'à 128Mo avec mémoire partagée
- Accélérateur Graphique 3D/2D de Haute Performance & Haute Qualité

***SiS966 (L) (SB)***

- Le lien Multiprocessus E/S intégré assure l'accès simultané de transfert de données en amont/aval avec une bande passante de 1,2Go/s.
- Conforme aux spécifications PCI 2.3 prenant en charge jusqu'à 6 maîtres PCI
- Conforme à PCI Express 1.0a
- Conforme aux spécifications ATA 1.0a Série
- Supporte le contrôleur Double IDE Maître/Esclave supportant UltraDMA 133/100/66/33
- Conforme au(x) codec(s) audio de haute définition AC'97/Intel prenant en charge les sorties audio à 8 canaux (optionnel)
- Contrôleur USB 2.0, prenant en charge jusqu'à 8 ports USB 2.0

## Mémoire

- SDRAM DDR2 800/667/533/400 DDR2 avec architecture DDR2 en double canal
- Peut recevoir deux DIMM sans tampon, taille mémoire maximum de 16 Go

## Graphique

- Moteur d'installation en triangle VLIW au format de virgule flottante en 32 bits intégré
- Moteur graphique BITBLT 128 bits en pipeline en 1T intégré
- Accélérateur Direct Draw & GDI+ Intégré
- Supporte jusqu'à la taille de texture de 2048 x 2048
- Partage une mémoire d'affichage de 128 Mo maximum

## 1394a FireWire (Optionnel)

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

## LAN interne (optionnel)

Cette carte mère prend en charge les chipsets LAN suivants :

| |
|---|
| • Fonctionnement en auto-négociation N-way 100/10 Mb/s<br>• Prend en charge le fonctionnement en half/full duplex<br>• Prise en charge de Réveil par LAN et réveil distant |
| • Emetteur-récepteur intégré 10/100/1000<br>• PCI v2.3, 32 bits, 33/66 MHz<br>• Entièrement conforme à IEEE 802.3, IEEE802.3u et IEEE802.3ab |
| • Emetteur-récepteur fast Ethernet 10BASE-T/100BASE-TX IEEE 802.3u<br>• Régulateur de tension intégré pour permettre un fonctionnement à partir d'une source d'alimentation 3,3/2,5V unique<br>• Prend en charge HP auto-MDIX et le mode Alimentation basse |

## Audio (Optionnel)

Cette carte mère prend en charge les chipsets Audio suivants:

| |
|---|
| • Conforme aux spécifications AC'97 2.3<br>• Prend en charge le CODEC audio 6 canaux destiné aux systèmes multi-média PC<br>• Offre trois entrées stéréo de niveau de ligne analogique avec contrôle de volume 5 bits: Ligne d'entrée, CD, AUX<br>• Conforme aux exigences audio de Microsoft WHQL/WLP 2.0 |
| • 8 canaux de format PCM 24/20/16-bits de support DAC pour solution audio 7.1<br>• Supporte la vitesse d'échantillonnage DAC de 192K/96K/48K/44,1KHz<br>• Support d'alimentation : Numérique : 3,3V; Analogique : 3,5V~5,25V<br>• Conforme aux exigences audio de Microsoft WHQL/WLP 2.x<br>• Compatible Direct Sound 3D™<br>• Sortie d'encodeur Dolby® Digital pour application électronique consommateur |

## Options d'extension

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

- Un logement PCI Express x16 pour interface Graphique
- Un logement PCI Express x1
- Deux logements PCI 32 bits
- Un logement CNR (Optionnel)
- Deux connecteurs IDE prenant en charge jusqu'à quatre périphériques IDE
- Une interface de lecteur de disquette
- Deux/Quatre connecteurs SATA à 7 broches (en option pour SiS966)

Cette carte mère prend en charge la maîtrise de bus Ultra DMA avec des vitesses de transfert de 133/100/66 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 LAN (Optionnel)
- Un port IEEE 1394 (Optionnel)
- Prises audio pour microphone, ligne d'entrée et ligne de sortie 6 canaux & microphone, ligne d'entrée et ligne de sortie audio haute définition à 8 canaux (en option)

## Microprogramme BIOS

La carte mère utilise AMI 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 Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/Sempron 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 SiS761GX Northbridge (NB) und SiS966(L) Southbridge (SB) Chipsätze basieren auf einer innovativen und skalierbaren Architektur mit bewiesener Zuverlässigkeit und Leistung

***SiS761GX (NB)***

- SiS MuTIOL verbindet SiS761GX und SiS966 MuTIOL Media IO
- Unterstützt HyperTransport ™Technologie mit einer Bandbreite von bis zu 2000 MT/s
- Integriertes MuTIOL 1G zu PCI Express x1 Bridge, entspricht PCI Express Spez.1.0a
- Unterstützt bis zu 128MB Anzeigenspeicher mit Shared Memory
- Hochleistungsfähiger Qualitäts-3D/2D-Grafikbeschleuniger

***SiS966 (L) (SB)***

- Integriertes Multi-Threaded I/O-Link gewährleistet die Gleichzeitigkeit der Upstream/Downstream-Datentransfers mit einer Bandbreite von 1.2 GB/s
- Entspricht PCI 2.3 Spezifikation und unterstützt bis zu 6 PCI-Masters
- Entspricht PCI Express 1.0a
- Entspricht Serial ATA 1.0a Spezifikation
- Unterstützt Dual IDE Master/Slave Controller, unterstützt UltraDMA 133/100/66/33
- Entspricht AC'97/Intel High Definition Audio Codec(s), unterstützt 8-Kanal Audioausgabe (optional)
- USB 2.0 Controller, unterstützt bis zu 8 USB 2.0 AnschlüssePort.

## Speicher

- Unterstützt DDR2 800/667/533/400 DDR2 SDRAM mit Dualkanal DDR2-Architektur
- Nimmt zwei ungepufferte DIMMs auf; die maximale Speichergröße beträgt bis zu 16 GB

## Grafik

- Integrierter 32-Bit Fließkomma VLIW-Triangle Setup Engine
- Integrierter 1T pipelined 128-Bit BITBLT-Grafik-Engine
- Eingebauter Direct Draw & GDI+ Beschleuniger
- Unterstützt bis zu 2048 x 2048 Strukturengröße
- Maximal 128 MB shared Display Memory

## 1394a FireWire (Optional)

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

## Onboard LAN (optional)

Dieses Mainboard kann einen der folgenden LAN-Chipsätze unterstützen:

| |
|---|
| • 100/10 Mb/s N-Way Auto-Negotiation-Betrieb<br>• Unterstützt Halb-/Vollduplex<br>• Unterstützung für Wake-on-LAN und Remote Wake-up |
| • Integrierter 10/100/1000 Transceiver<br>• PCI v2.3, 32-Bit, 33/66MHz<br>• Vollständige Entsprechung zu IEEE 802.3, IEEE802.3u und IEEE802.3ab |
| • 10BASE-T/100BASE-TX IEEE 802.3u Fast Ethernet-Transceiver<br>• Integrierter Spannungsregler für den Betrieb von einer einzelnen 3.3/2.5V Quelle<br>• Unterstützt HP Auto-MDIX und Low-Power-Modus |

## Audio (optional)

Dieses Mainboard kann einen der folgenden Audio-Chipsätze unterstützen:

| |
|---|
| • Entspricht AC'97 v2.3 CODEC<br>• Unterstützt 6-Kanal Audio CODEC, entwickelt für Multimedia PC-Systeme<br>• Stellt drei analoge Line-Level Stereoeingänge mit 5-bit Lautstärkeregelung zur Verfügung: Line-in, CD, AUX<br>• Entspricht den Microsoft WHQL/WLP 2.0 Audio-Anforderungen |
| • 8-Kanal DAC Unterstützung 24/20/16-Bit PCM-Format für 7.1 Audio<br>• Unterstützt 192K/96K/48K/44.1KHz DAC Abtastrate<br>• Netzteilunterstützung: Digital: 3,3V; Analog: 3,5V~5,25V<br>• Entspricht den Anforderungen von Microsoft WHQL/WLP 2.x<br>• Kompatibel mit Direct Sound 3D™<br>• Dolby® Digital Encoderausgang für Endverbrauchergeräte |

## Erweiterungsoptionen

Das Mainboard bietet die folgenden Erweiterungsoptionen:

- Ein PCI Express x16 Steckplatz für Grafikschnittstelle
- Ein PCI Express x1 Steckplatz
- Zwei 32-Bit PCI-Steckplätze
- Einen Steckplatz für CNR (optional)
- Zwei IDE-Stecker, die bis zu vier IDE-Geräte unterstützen
- Ein Steckplatz für ein Diskettenlaufwerk
- Zwei/vier (optional für SiS966) 7-Pin SATA-Stecker

Dieses Mainboard unterstützt Ultra DMA Bus-Mastering mit Transferraten von 133/100/66MB/s.

## 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 LAN-Schnittstelle (optional)
- Eine IEEE 1394-Schnittstelle (optional)
- Audiobuchsen für Mikrofon, Line-in und 6-Kanal Line-out & Mikrofon, Line-in und 8-Kanal High Definition Audio Line-out (optional)

## BIOS Firmware

Dieses Mainboard setzt das AMI 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:

- Compatibile con processori AMD Athlon 64 FX/Athlon 64 X2 Dual Core/ Athlon 64/Sempron
- 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 SiS761GX Northbridge (NB) e SiS966 (L) Southbridge (SB) sono basati su un'innovativa architettura scalabile e offrono collaudata affidabilità e prestazioni comprovate.

***SiS761GX (NB)***

- La tecnologia SiS MuTIOL incorporata consente di collegare insieme MuTIOL Media I/O SiS 761GX e SiS 966
- Supporto di tecnologia HyperTransport™ con larghezza di banda fino a 2000 MT/s
- Bridge MuTIOL 1G/PCI Express x1 integrato conforme alla specifica PCI Express 1.0a
- Supporto di memoria video fino a 128MB con memoria condivisa
- Acceleratore grafico 3D/2D a elevate prestazioni e qualità

***SiS966 (L) (SB)***

- La tecnologia MuTIOL (Multi-threaded I/O link) integrata garantisce il trasferimento contemporaneo di dati in ingresso e in uscita con larghezza di banda di 1.2 GB/s
- Conforme alle specifiche PCI 2.3, in grado di supportare fino a 6 master PCI.
- Conforme a PCI Express 1.0a
- Conforme alla specifica ATA Seriale 1.0a
- Supporto di doppio controller IDE Master/Slave: Supporto di UltraDMA 133/100/66/33
- Conforme a specifiche AC'97/Intel High Definition Audio con supporto di uscite audio a 8 canali (opzionale)
- Controller USB 2.0, con supporto di fino a 8 porte USB 2.0

## Memoria

- Supporto di SDRAM DDR2 800/667/533/400 DDR2 con architettura DDR2 Dual Channel
- Compatibile con due DIMM senza buffer con una capacità massima di memoria di 16 GB

## Grafica

- Motore triangle setup con architettura VLIW a virgola mobile a 32 bit integrato
- Motore grafico BITBLT a 128 bit con pipeline 1T integrato
- Acceleratore GDI+ e Direct Draw integrati
- Supporto di dimensioni di trama fino a 2048 x 2048
- Condivisione della memoria di display fino a 128 MB

## FireWire 1394a (Opzionale)

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

## LAN integrata (opzionale)

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

| |
|---|
| • Operazioni di auto-negoziazione N-way 100/10 Mb/s<br>• Supporto di funzionalità half/full duplex<br>• Supporto di funzionalità Wake-on-LAN e riattivazione remota |
| • Transceiver 10/100/1000 integrato<br>• PCI v2.3, a 32 bit, 33/66 MHz<br>• Piena compatibilità con IEEE 802.3, IEEE802.3u e IEEE802.3ab |
| • Scheda Ethernet 10BASE-T/100BASE-TX IEEE 802.3u<br>• Regolatore di voltaggio integrato per permettere le operazioni da una singola fonte di alimentazione a 3,3/2,5V<br>• Supports di HP auto-MDIX e della modalità ad alimentazione ridotta |

## Audio (Opzionale)

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

| |
|---|
| • Conforme alle specifiche AC'97 2.3<br>• Supporto di CODEC audio a 6 canali per sistemi PC multimediali<br>• Tre ingressi analogici stereo lineari con controllo volume a 5 bit: Line-In, CD, AUX<br>• Conforme ai requisiti audio di WHQL e WLP 2.0 di Microsoft |
| • 8 canali per formato PCM a 24/20/16 bit con supporto DAC per soluzioni audio 7.1<br>• Supporto di velocità di campionamento DAC a 192K/96K/48K/44,1 KHz<br>• Supporto alimentazione: Digitale: 3,3 V; Analogico: 3,5 V ~ 5,25 V<br>• Megfelel a Microsoft WHQL/WLP 2.x audio követelményeine<br>• Compatibile con Direct Sound 3D™<br>• Uscita Dolby® Digital Encorder per apparecchiature elettroniche di largo consumo |

## Opzioni di espansione

La scheda madre è dotata delle seguenti opzioni di espansione:

- Uno slot PCI Express x16 per interfaccia grafica
- Uno slot PCI Express x1
- Due slot PCI a 32 bit
- Una slot CNR (opzionale)
- Due connettori IDE per il supporto di fino a quattro dispositivi IDE
- Un'interfaccia per unità disco floppy
- Due/quattro (opzionali per SiS966) connettori SATA a 7 pin

La scheda madre supporta la funzionalità di bus mastering Ultra DMA con velocità di trasferimento di 133/100/66 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 LAN (opzionale)
- Una porta IEEE 1394 (opzionale)
- Prese jack audio per microfono, line-in e line-out e microfono a 6 canali, line-in e line-out per audio ad alta definizione a 8 canali (opzionale)

## Firmware BIOS

La scheda madre si avvale del BIOS AMI 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 Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/Sempron
- 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 SiS761GX Northbridge (NB) y SiS966 (L) Southbridge (SB) se basan de una arquitectura innovadora y escalable con fiabilidad y rendimiento comprobados.

***SiS761GX (NB)***

- SiS MuTIOL está incorporado para conectar SiS761GX y SiS966 MuTIOL Media IO
- Soporta la HyperTransport ™Technology hasta una ancha de banda de 2000 MT/s
- MuTIOL 1G a PCI Express x1 Bridge integrado, conforme con el PCI Express espec.1.0a
- Soporta hasta la memoria de muestra de 128MB con memoria compartida
- Acelerador de Gráficas 3D/2D de Alto Rendimiento & Alta Calidad

***SiS966 (L) (SB)***

- Vínculo Multi-threaded I/O integrado Asegura Concurrencia de la Transferencia de Datos Superior/Inferior con Ancha de banda de 1.2 GB/s
- Conformidad de la especificación PCI 2.3 que soporta hasta 6 másters PCI
- Conformidad de PCI Express 1.0a
- Conformidad con la especificación Serial ATA 1.0a
- Soporta Controlador Dual IDE Master/Esclavo y soporta UltraDMA 133/100/66/33
- Conformidad con el Codec de Audio de Alta Definición Intel/AC'97 que soporta salidas de audio de 8 canales (opcional)
- Controlador USB 2.0, soporta hasta 8 puertos USB 2.0

## Memoria

- Soporta DDR2 SDRAM DDR2 800/667/533/400 con arquitectura DDR2 de canal dual
- Acomoda dos DIMMs sin buffer, hasta 16 GB de tamaño de memoria máximo

## Graphics

- Motor de setup triangular VLIW de formato de punto flotante de 32-bit incoporado
- Un motor de gráficas BITBLT de 128-bit a línea de tubo 1T incorporado
- Acelerador Direct Draw & GDI+ Incorporado
- Soporta hasta tamaño de textura de 2048 x 2048
- Comparte memoria de muestra de un máximo de 128 MB

## 1394a FireWire (opcional)

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

## LAN Abordo (opcional)

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

| |
|---|
| • Operación de autonegociación N-way de 100/10 Mb/s<br>• Soporta capacidad duplex medio/completo<br>• Soporta la función Wake-On-LAN y despertar remoto |
| • Transreceptor 10/100/1000 integrado<br>• PCI v2.3, 32-bit, 33/66 MHz<br>• Conformidad total con IEEE 802.3, IEEE802.3u y IEEE802.3ab |
| • Transceptor de Ethernet rápido 10BASE-T/100BASE-TX IEEE 802.3u<br>• Regulador de voltaje integrado para permitir operación de una sola fuente de suministro 3.3/2.5V<br>• Soporta HP auto-MDIX y el modo Suministro Bajo |

## Audio (opcional)

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

| |
|---|
| • Conformidad con las especificaciones AC'97 2.3<br>• Soporta CODEC de audio de 6 canales diseñaods para los sistemas multimedia<br>• Provee tres entradas en estéreo a nivel de línea análogicas con control de volumen de 5-bit: LIne-in, CD, AUX<br>• Satisface los requisitos de audio de Microsoft WHQL/WLP 2.0 |
| • 8 canales de formato PCM de 24/20/16-bit de soporte DAC para la solución de audio 7.1<br>• Soporta índice de muestreo DAC 192K/96K/48K/44.1KHz<br>• Soporte de suministro: Digital: 3.3V; Analógico: 3.V~5.25V<br>• Satisface los requisitos de audio de Microsoft WHQL/WLP 2.x<br>• Compatible con Direct Sound 3D™<br>• Salida de Decodificador Digital Dolby® para la aplicación de los electrónicos de consumo |

## Opciones de Expansión

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

- Una renura PCI Express x16 para la interfaz de Gráficas
- Una renura PCI Express x1
- Dos ranuras PCI de 32-bit
- Una ranura de CNR (opcional)
- Dos conectores IDE que soporta hasta cuatro dispositivos IDE
- Una interfaz de la unidad de disco floppy
- Dos/Cuatro (opcional para SiS966) conectores SATA de 7-pin

Esta placa principal soporta Ultra DMA bus mastering con índices de transferencia de 133/100/66MB/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 LAN (opcional)
- Un puerto IEEE 1394 (opcional)
- Clavijas de audio para micrófono, entrada de línea y salida de línea & micrófono de 6 canales, entrada de línea y salida de línea de Audio de Alta Definición de 8 canales (opcional)



# BIOS Firmware

La placa principal usa AMI 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 Athlon 64 FX/Athlon 64 X2 Dual-Core/ Athlon 64/Sempron
- 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 SiS761GX Northbridge (NB) e SiS966 (L) Southbridge (SB) é baseado numa arquitectura inovadora e escalável com fiabilidade e performance provadas.

***SiS761GX (NB)***

- O SiS MuTIOL vem incorporado para ligar SiS761GX e SiS966 MuTIOL Media IO juntamente
- Suporta Tecnologia de HyperTransport ™ de largura de banda até 2000MT/s
- Bridge integrada MuTIOL 1G to PCI Express x1, compatível com a espec. 1.0a PCI Express
- Suporta memória de visualização até 128MB com memória partilhada
- Acelerador de Gráficos 3D/2D de Elevada Qualidade & Elevada Performance

***SiS966 (L) (SB)***

- Link I/O multi-fios integrado que assegura uma concorrência de transferência de dados de fluxo elevada/baixa com largura de banda de 1.2 GB/seg.
- Cumpre com especificação PCI 2.3 suportando até 6 PCI masters
- Compatível com PCI Express 1.0a
- Cumpre com especificação ATA 1.0a
- Suporta Controlador IDE Master/Slave duplo que suporta UltraDMA 133/100/66/33
- Compatível com a(s) Codec Áudio Alta Definição AC'97/ Intel suportando saídas áudio com 8 canais (opcional)
- Controlador USB 2.0, suportando até 8 portas USB 2.0

## Memória

- Suporta DDR2 800/667/533/400 DDR2 SDRAM com arquitectura DDR2 bicanal
- Acomoda dois DIMMs sem buffers, com até 16 GB de limite de memória máxima

## Gráficos

- Incorporado com dispositivo de configuração triangular VLIW com formato de ponto flutuante de 32 bit
- Incorporado com dispositivo de gráficos BITBLT de 128 bit em paralelo 1T
- Direct Draw Incorporado & GDI+ Acelerador
- Suporta até 2048 x 2048 de formato de textura
- Partilha máxima de memória de visor de 128 MB

## 1394a FireWire (opcional)

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

## Onboard LAN (opcional)

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

| |
|---|
| • Funcionamento de auto-negociação 100/10 Mb/s N-way<br>• Suporta capacidade de duplex pela metade/ou na totalidade<br>• Suporte Wake-on-LAN e wake-up remoto |
| • Transmissor 10/100/1000 integrado<br>• PCI v2.3, de 32 bits, 33/66 MHz<br>• Totalmente compatível com IEEE 802.3, IEEE802.3u e IEEE802.3ab |
| • Transreceptor de Ethernet rápida 10BASE-T/100BASE-TX IEEE 802.3u<br>• Regulador de voltagem integrado para permitir o funcionamento a partir de uma única fonte de alimentação 3.3/2.5V<br>• Suporta modo HP auto-MDIX e de baixa potência |

## Áudio(opcional)

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

| |
|---|
| • Cumpre com as especificações AC'97 2.3<br>• Suporta CODEC áudio com 6 canais concebido para sistemas multimédia para PC<br>• Fornece três entradas estéreo nível de linha analógicas com controlo de volume de 5 bits: LIne-in, CD, AUX<br>• Cumpre com os requisitos áudio WHQL/WLP 2.0 da Microsoft audio |
| • Formato 24/20/16-bit PCM com suporte DAC de 8 canais para solução áudio 7.1<br>• Suporta taxa de amostragem DAC 192K/96K/48K/44.1KHz DAC<br>• Suporte de potência: Digital: 3.3V; Analógica: 3.5V~ 5.25V<br>• Cumpre com os requisitos áudio WHQL/WLP 2.x da Microsoft<br>• Compatível com Direct Sound 3D™<br>• Saída de codificador Dolby® Digital para aplicação electrónica de consumidor |

## Opções de Expansão

A motherboard é fornecida com as seguintes opções de expansão:

- Uma ranhura PCI Express x16 para Interface de Gráficos
- Uma ranhura PCI Express x1
- Uma ranhura de Aumento da Rede de Comunicações (opcional)
- Dois ranhuras PCI de 32 bit
- Dois conectores IDE que suportam até quatro dispositivos IDE
- Um interface com drive de disco flexível
- Dois/Quatro conectores SATA de 7 pinos (opcional para SiS966)

Esta motherboard suporta mastering bus Ultra DMA com taxas de transferência de 133/100/66MB/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 LAN (opcional)
- Uma porta IEEE 1394 (opcional)
- Fichas áudio para microfone, line-in e line-out de 6 can. & microfone, line-in e line-out áudio de Elevada Definição de 8 can. (opcional)



## Microprogramação BIOS

Esta motherboard usa AMI 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 alteraçõessem aviso prévio.*

# 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 Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/Sempron プロセッサ搭載可能
- 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

SiS761GX Northbridge (NB)とSiS966 (L) 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。

***SiS761GX (NB)***

- SiS MuTIOL でMuTIOL Media IOチップセットであるSiS761GX とSiS966 とを接続
- HyperTransport™ 技術をサポートで最大 2000MT/秒の帯域幅を提供
- PCI Express x1 Bridge接続用のMuTIOL 1Gを内蔵し 、PCI Express spec.1.0aに対応
- 最大 128MB までビデオメモリの共有を可能に
- 高性能で高品質の3D/2D グラフィック・アクセラレータを搭載

***SiS966(L) (SB)***

- マルチスレッド I/O リンクを内蔵で、帯域幅が1.2 GB/sの双方向の同時転送を可能に
- PCI2.3規格に準拠することで、最大6つまでのPCIマスター設備の取り付けが可能
- PCI Express 1.0aに対応済み
- シリアルATA 1.0a仕様に準拠し
- デュアルIDE マスタ/スレーブ・コントローラで UltraDMA 133/100/66/33をサポート
- AC'97/Intel High Definition Audio Codec(s)規格に対応し、8チャネルのオーディオ出力を可能に (オプション)
- USB 2.0 コントローラで、最大8つまでの USB 2.0 ポートを提供

## メモリ

- DDR2 800/667/533/400 DDR2 SDRAM に対応し、デュアルチャネル DDR2 構成を実現
- 搭載されている2つの非バッファーDIMMで最大16 GBまでのメモリーの取り付けを可能に

## グラフィック

- 32ビット浮動小数点形式VLIWトライアングルセットアップエンジンを内蔵
- 1つの1T パイプライン化128ビットBITBLT グラフィックエンジンを内蔵
- Direct Draw & GDI+ アクセラレータを内蔵
- 最大2048 x 2048までの texture サイズに対応
- グラフィックメモリ128 MBめで共有

日本語

## 1394a Fire Wire(オプション)

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

## オンボードLAN (オプション)

当マザーボードは次のLANチップセットのいずれかを搭載しております:

| |
|---|
| • 100/10 Mb/s Nウェイ自動折衝動作<br>• 半/全二重の機能をサポート<br>• Wake-on-LAN と遠隔 wake-upとの機能をサポート |
| • 10/100/1000 トランシーバーを搭載済み<br>• 32ビット33/66 MHzモードのPCI v2.3仕様<br>• IEEE 802.3、IEEE802.3u および IEEE802.3abに完全対応 |
| • 10BASE-T/100BASE-TX IEEE 802.3u 高速イーサーネットトランシーバー<br>• 統合式電圧調節器で 単一の3.3/2.5V電源サプライにより動作を実現<br>• HPのauto-MDIX と低消費電力モードをサポート |

## 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:

| |
|---|
| • AC’97 2.3 規格に準拠<br>• PCマルチメディアシステムの6チャネルオーディオCODECをサポート<br>• 5ビット音声コントロール可能のアナログラインレベルのステレオ入力が3つ:ラインイン、CD、およびAUX<br>• Microsoft WHQL/WLP 2.0 オーディオ要求に適合 |
| • 8チャネルのDACで、 7.1オーディオソリューションの24/20/16-bit PCM形式をサポート<br>• 192K/96K/48K/44.1KHz DAC サンプリング率をサポート<br>• 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)<br>• Microsoft WHQL/WLP 2.x オーディオ基準に準拠<br>• Direct Sound 3D™ に対応<br>• Dolby® Digital Encoder出力で、家庭用電子製品への対応を可能に |

## 拡張オプション

本マザーボードでは、次の拡張機能が利用できます。

- グラフィック・インターフェース用のPCI Express x16スロット が1つ
- PCI Express x1 スロットが1つ
- 32ビットPCIスロット が2つ
- CNR スロット が1つ (オプション)
- IDEヘッダーが2つ (4つのIDEデバイスの接続を可能)
- 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ピン仕様のSATAコネクタが2つ(オプションのSiS966である場合は4つ)

このマザーボードは、133/100/66MB/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
- LANポート が1つ(オプション)
- IEEE 1394 ポート が1つ(オプション)
- マイクロホン、ライン入力/6チャンネルライン出力マイクロホン、ライン入力/8チャンネルのHigh Definition Audio準拠のライン出力(オプション)との接続可能のオーディオジャック

## BIOSファームウェア

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

- 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。*

日本語

# 특성

## 프로세서

본 마더보드에 탑재된 소켓 AM2는 다음과 같은 기능을 제공한다:

- AMD 애슬론 64 FX/애슬론 64 X2 듀얼 코어/애슬론 64/샘프론 프로세서 탑재
- 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

SiS761GX Northbridge (NB) 및 SiS966 (L) Southbridge (SB) 칩셋은 혁신적이고 범위성을 지닌 아키텍쳐를 기반으로 인정된 신뢰성과 성능을 지닌다.

***SiS761GX (NB)***

- SiS MuTIOL로 SiS761GX 와 SiS966 MuTIOL 미디어 IO 연결
- HyperTransport ™Technology 에 최대 대역폭 2000MT/s 지원
- PCI Express x1 브리지에 통합 MuTIOL 1G 사용, PCI Express 사양 1.0a 호환
- 공유 메모리와 함께 최대 128MB 디스플레이 메모리 지원
- 고 성능, 고 품질의 3D/2D 그래픽 가속기

***SiS966 (L) (SB)***

- 통합 멀티 쓰레드 I/O 링크를 통해 대역폭 1.2 GB/s 로 데이터 전송의 업스트림/다운스트림의 동시성(Concurrency) 확보
- 최대 6 개의 PCI 마스터를 지원하는 PCI 2.3 사양과 부합
- PCI Express 1.0a 호환
- 시리얼 ATA 1.0a 사양과 부합, 절전 모드 지원
- 듀얼 IDE 주/부 컨트롤러, UltraDMA 133/100/66/33 지원
- AC'97 부합/8 채널 오디오 출력을 지원하는 인텔 HD 오디오 코덱(선택 사항)
- USB 2.0 컨트롤러, 최대 8 개의 USB 2.0 포트 지원

## 메모리

- 듀얼 채널 DDR2 아키텍처를 지닌 DDR2 800/667/533/400 DDR2 SDRAM
- 2 개의 unbuffered DIMMs, 최대 메모리 크기 16 GB

## 그래픽

- 32 비트 플로팅 포인트 포맷 VLIW 트라이앵글 셋업 엔진 내장
- 1T pipelined 128 비트 BITBLT 그래픽 엔진 내장
- 빌트인 Direct Draw & GDI+ 가속기
- 최대 텍스처 크기 2048 x 2048 지원
- 최대 128 MB 디스플레이 메모리 공유

## 1394a 파이어 와이어(선택 사항)

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

## 보드 내장 LAN (선택 사항)

본 마더보드는 다음과 같은 LAN 칩셋을 지원합니다:

| |
|---|
| • 100/10 Mb/s N-way 자동 감지<br>• Half/full 듀플렉스 지원.<br>• Wake-on-LAN 및 원격 wake-up 지원 |
| • 통합 10/100/1000 트랜시버<br>• PCI v2.3, 32 비트, 33/66 MHz<br>• IEEE 802.3, IEEE802.3u 및 IEEE802.3ab 규격 부합 |
| • 10BASE-T/100BASE-TX IEEE 802.3u 패스트 이더넷 트랜시버<br>• 3.3/2.5V의 전원 공급원을 지원하는 통합 전압 조정기<br>• HP auto-MDIX 및 절전 모드 지원 |

## 오디오(선택 사항)

본 마더보드는 다음과 같은 오디오 칩셋을 지원합니다.

| |
|---|
| • AC'97 2.3 사양 부합<br>• PC 멀티미디어 시스템을 위해 디자인 된 6 채널 오디오 코덱 지원<br>• 5 비트 볼륨 컨트롤의 아날로그 라인 레벨 스테레오 입력 3개 : Line-in, CD, AUX<br>• 마이크로소프트 WHQL/WLP 2.0 오디오 요구 조건 부합 |
| • 8 채널 DAC, 7.1 오디오 솔루션을 위해 24/20/16 비트 PCM 포맷 지원<br>• 192K/96K/48K/44.1KHz DAC 샘플 속도 지원<br>• 전원 지원: 디지털: 3.3V; 아날로그: 3.5V~5.25V<br>• Microsoft WHQL/WLP 2.x 오디오 요구 조건에 부합<br>• Direct Sound 3D™ 호환<br>• 일반 전자 제품을 위한 돌비®디지털 인코더 출력 |

## 확장 옵션

본 마더보드의 확장 옵션은 다음과 같다:

- 그래픽 인터페이스 용 PCI Express x 16 슬롯 1 개
- PCI Express x 1 슬롯 1 개
- 32 비트 PCI 슬롯 2 개
- CNR 슬롯 1 개 (선택 사항)
- 최대 4개의 IDE 장치를 지원하는 IDE 커넥터 2 개
- 플로피 디스크 드라이브 인터페이스 1 개
- 7 핀 SATA 커넥터 2개/4 개(SiS966 옵션)

본 마더보드는 전송 속도 133/100/66MB/s 로 Ultra DMA 버스 마스터링을 지원한다.

## 통합 I/O

본 마더보드는 풀 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
- LAN 포트 1 개 (선택 사항)
- IEEE 1394 포트 1 개 (선택 사항)
- 마이크, 라인 입력, 6 채널 라인 출력 및 마이크, 라인 입력 및 8 채널 HD 오디오 라인 출력(옵션)용 오디오 잭

## BIOS 펌웨어

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

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

펌웨어로 다른 프로세서 클록 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：

- 適用於 AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/Sempron 處理器
- 支援高達2000 MT/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

SiS761GX北橋(NB)及SiS966 (L)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。

***SiS761GX (NB)***

- 設置有SiS MuTIOL，用以連接SiS761GX 及SiS966 MuTIOL Media IO晶片組
- 支援 HyperTransport™ 技術，提供高達2000 MT/s 的頻寬
- 內建 MuTIOL 1G 來連接 PCI Express x1 Bridge，相容於PCI Express spec.1.0a
- 支援共享高達128MB 的顯示記憶體
- 具有高效能、高品質之3D/2D 繪圖加速器

***SiS966 (L) (SB)***

- 內建多緒 I/O 連結，實現1.2 GB/秒 頻寬的同步上下行資料串流傳輸
- 相容於 PCI 2.3規格，支援6個PCI主控器
- 相容於PCI Express 1.0a規格
- 符合序列ATA 1.0 a規格
- 支援雙 IDE主從控制器，可支援UltraDMA 133/100/66/33
- 相容於支援8聲道音訊輸出功能之AC'97/Intel高傳真音效編碼解碼器(High Definition Audio Codec)規格（選購）
- USB 2.0 控制器，藉此支援高達8個USB 2.0埠

## 記憶體

- 支援DDR2 800/667/533/400 DDR2 SDRAM，提供雙通道DDR2 架構
- 設有2個非緩衝DIMM，最多可安裝16 GB記憶體

## 繪圖卡

- 內建32位元浮點方式VLIW 幾何運算圖形加速引擎(triangle setup engine)
- 內建一1T 管線化128位元BITBLT繪圖引擎
- 內建有 Direct Draw & GDI+ 加速器
- 支援高達2048 x 2048 texture 尺寸
- 共享高達 128 MB之顯示記憶體

繁體中文

## 1394a Fire Wire (選購)

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

## 內建區域網路（選購）

本主機板搭載有如下其中一種LAN晶片組：

- 100/10 Mb/s N路自動協商動作
- 支援半/全雙工功能
- 支援區域網路喚醒(Wake-On-LAN)及遠端喚醒功能

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- 整合有10/100/1000 收發器
- PCI v2.3規格，32位元 33/66 MHz
- 完全相容於IEEE 802.3、IEEE802.3u 及IEEE802.3ab

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- 10BASE-T/100BASE-TX IEEE 802.3u 快速乙太網路收發器
- 內建穩壓器，藉此以一個3.3/2.5V電源穩定運作
- 支援 HP 的auto-MDIX 及 省電模式

## 音頻(選購)

本主機板支援以下其中一種音訊晶片組：

- 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

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- 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

## 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 擴充槽
- 1 個PCI Express x1 擴充槽
- 2 個 32-bit PCI 插槽
- 1個通訊網路附加卡(CNR)插槽(選購)
- 2 個 IDE 接頭，支援 4個 IDE 裝置
- 1 個軟碟機介面
- 2個/4個(SiS966選購) 7針 SATA連接器

本主機板支援傳輸率133/100/66 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 個區域網路埠(選購)
- 1 個IEEE 1394埠(選購)
- 麥克風、line級輸入及6聲道line級輸出&麥克風、line級輸入及8聲道高傳真音效line級輸出 (選購)音訊插孔

## BIOS 韌體

本主機板使用AMI BIOS，使用者可以組態設定許多系統功能，包括如下：

- 電源管理
- 喚醒警鈴
- CPU參數
- CPU及記憶體的時脈定時

此外，也可藉由參數的設定，調整處理器的時脈速度。

*部份硬體規格和軟體內容可能會在未經通知的情況下更動，敬請見諒。*

# 功能

## 处理器

主板使用一个 Socket AM2 插座，此插座具有以下特点：

- 支持 AMD Athlon 64 FX/Athlon 64 X2 双核/Athlon 64/Sempron 处理器
- 支持 2000MT/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

SiS761GX 北桥 (NB) 和 SiS966 (L) 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。

***SiS761GX (NB)***

- SiS MuTIOL 将 SiS761GX 和 SiS966 MuTIOL Media IO 结合
- 支持 HyperTransport™ 技术，带宽可达 2000MT/s
- 集成 MuTIOL 1G 到 PCI Express x1 桥路，符合 PCI Express 1.0a 标准
- 最大支持 128MB 显存，共享内存
- 高质量和高性能 3D/2D 图形引擎

***SiS966 (L) (SB)***

- 集成多线程 I/O 连接，确保 1.2GB/s 带宽的并发上行/下行数据传输
- 符合 PCI 2.3 规格，最多支持 6 个 PCI 主控器
- 符合 PCI Express 1.0a 规格
- 符合串行 ATA 1.0a 规格
- 支持双 IDE 主/从控制器，支持 UltraDMA 133/100/66/33
- 符合支持 8 路音频输出的 AC'97/Intel 高精度音频编解码器规格（可选）
- USB 2.0 控制器，支持 8 个 USB 2.0 端口

## 内存

- 支持DDR2 800/667/533/400 DDR2 SDRAM，双通道 DDR2 架构
- 支持 2 个非缓冲 DIMM，内存最大支持 16 GB

## 图形

- 内建 32 位浮点式 VLIW 三角设置引擎
- 内建一个 1T 管道 128 位 BITBLT 图形引擎
- 内建 Direct Draw & GDI+ 加速器
- 支持 2048 x 2048 纹理尺寸
- 最大共享 128 MB 显存

## 1394a 火线（可选）

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

## Onboard LAN（可选）

此主板支持以下任何一种 LAN 芯片组：

| |
|---|
| • 100/10 Mb/s N 路自侦测运行<br>• 支持半双工/全双工工作<br>• 支持 LAN 唤醒 (WOL) 功能和远程唤醒功能 |
| • 集成 10/100/1000 收发器<br>• PCI v2.3，32-位，33/66-MHz<br>• 完全支持 IEEE 802.3、IEEE802.3u 和 IEEE802.3ab |
| • 10BASE-T/100BASE-TX IEEE 802.3u 高速以太网收发器<br>• 允许单 3.3/2.5V 供电的集成电压调理器<br>• 支持 HP 自动 MDIX 和低电压模式 |

## 音频(可选)

此主板支持以下任何一种音频芯片组：

| |
|---|
| • 兼容 AC'97 v2.3 规格<br>• 支持为PC多媒体系统设计的 6 声道音频编解码器<br>• 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<br>• 符合 Microsoft WHQL/WLP 2.0 音频要求 |
| • 8 通道 DAC，支持 24/20/16 位 PCM 格式用于 7.1 音频解决方案<br>• 支持 192K/96K/48K/44.1KHz DAC 采样速率<br>• 电源支持： 数字亮：3.3V；模拟量：3.5V~5.25V<br>• 符合 Microsoft WHQL/WLP 2.x 音频要求<br>• 符合 Direct Sound 3D™ 规格<br>• 用于消费类电子应用的杜比® 数字编码器 |

## 扩展选项

此主板提供如下扩展选项：

- 1 个 用于图形接口的 PCI Express x16 插槽
- 1 个 PCI Express x1 插槽
- 2 个 32 位 PCI 扩展插槽
- 1 个通信网络转接 插槽 (可选)
- 2 个 IDE 接口，可支持 4 个 IDE 设备
- 1 个 软驱接口
- 2/4（可选 SiS966）7 针 SATA 接口

主板支持 Ultra DMA 总线控制，传输速率可达 133/100/66MB/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 LAN 端口（可选）
- 1 个 IEEE 1394 端口（可选）
- 音频插孔，用于麦克风、线入和 6 路线出 & 麦克风、线入和 8 路高清晰音频线出（可选）

## BIOS

此主板使用 AMI BIOS，可以让用户自己配置以下系统功能：

- 电源管理
- 唤醒报警
- CPU 参数
- CPU 和记忆定时

还可用于设置不同处理器时钟速度的参数。.

*某些硬件规格和软件项目若有更改恕不另行通知。*

# Характеристики

## Процессор

Данная материнская плата размещает сокет AM2 и обладает следующими характеристиками:

- Размещает процессоры AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/ Athlon 64/Sempron
- 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 SiS761GX «Северный мост» (Northbridge, NB) и SiS966 (L) «Южный мост» (Southbridge, SB) построены с использованием инновационной масштабируемой архитектуры, обеспечивающей высокую надежность и производительность.

***SiS761GX (NB)***

- Для соединения мостов SiS761GX и SiS966 MuTIOL Media IO используется шина SiS MuTIOL
- Поддерживается технология HyperTransport ™, обеспечивающая пропускную способность до 2000MT/s
- Встроенный мостик MuTIOL 1G to PCI Express x1, совместимый со спецификацией PCI Express вер.1.0a
- Поддержка видеопамяти до 128MB (разделенная память)
- Поддержка высокопроизводительного акселератора высококачественной графики 3D/2D

***SiS966 (L) (SB)***

- Встроенный интерфейс входа/выхода Multi-thread I/O link, обеспечивающий трансфер данных в обоих направлениях со скоростью 1,2 ГБ/с
- Совместимость со спецификацией PCI 2.3, поддерживающей до 6 PCI master-устройств
- Совместимость с PCI Express 1.0a
- Совместимость со спецификацией Serial ATA 1.0a
- Поддержка контроллера двойного IDE Master/Slave, поддержка UltraDMA 133/100/66/33
- Совместимость с аудио КОДЕК AC'97/Intel High Definition и поддержка 8-канального аудио-выхода(опционально)
- Контроллер USB 2.0 с поддержкой до 8 портов USB 2.0

## Память

- DDR2 800/667/533/400 DDR2 SDRAM с двухканальной архитектурой DDR2
- Размещает два модуля небуферируемой памяти DIMM с максимальным объемом памяти до 16 ГБ

## Графика

- Интегрированный 32-битовый модуль VLIW triangle setup для вычислений в режиме плавающей запятой
- Интегрированный графический модуль 1T pipelined 128-bit BITBLT
- Встроенный акселератор Direct Draw & GDI+
- Поддержка размеров текстуры до 2048 x 2048
- Разделяемая память дисплея максимум 128 МБ

## 1394a FireWire (опционально)

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

## Встроенный сетевой адаптер LAN (опционально)

Встроенный сетевой адаптер LAN обладает следующими характеристиками:

| |
|---|
| • Режим автовыбора 100/10 Mb/s N-way<br>• Поддержка режимов Half и Full Duplex<br>• Функция Wake-on-LAN и удаленного пробуждения |
| • Встроенный трансивер 10/100/1000<br>• PCI v2.3, 32-бит, 33/66 МГц<br>• Полная совместимость с IEEE 802.3, IEEE802.3u и IEEE802.3ab |
| • Трансивер Fast Ethernet 10BASE-T/100BASE-TX IEEE 802.3u<br>• Встроенный регулятор напряжения, допускающий питание от одного источника 3.3/2.5 Br<br>• Поддерживает режимы HP авто-MDIX и Low-power |



## Аудио(опционально)

Данная плата может поддерживать любой из нижеследующих чипсетов аудио.

| |
|---|
| • Совместимость со спецификацией AC'97 2.3<br>• Поддерживает 6-канальный аудио CODEC для мультимедиальных компьютерных систем<br>• Обеспечивает три аналоговых стереовхода с 5-битной регуляцией громкости: Line-in, CD, AUX<br>• Соответствие требованиям для аудио Microsoft WHQL/WLP 2.0 |
| • Поддерживает 8-канальный DAC в 24/20/16-битном PCM формате для аудио вер. 7.1<br>• Поддерживает частоту сэмплирования DAC 192K/96K/48K/44.1 КГц<br>• Электропитание: цифровой режим: 3.3V; аналоговый режим: 3.5V~5.25V<br>• Соответствует требованиям Microsoft WHQL/WLP 2.x аудио<br>• Совместимость с Direct Sound 3D™<br>• Выход Dolby® Digital Encoder для применения в бытовой электронике |

## Возможности расширения

Существуют следуюшие опции расширения данной материнской платы:

- Один слот PCI Express x16 для графического интерфейса
- Один слот PCI Express x1
- Два 32-битовых слота PCI
- Один слот CNR (опционально)
- Два разъема IDE с поддержкой до четырех устройств IDE
- Один разъем для накопителя на гибких дисках
- Два/четыре (опционально для SiS966) 7-штырьковых коннектора SATA

Плата поддерживает захват управления шиной Ultra DMA со скоростью передачи 133/100/66МБ/с.

## 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 LAN (опционально)
- Один порт IEEE 1394 (опционально)
- Гнезда аудио для микрофона, входа и 6-канального выхода, а также  микрофона, входа и 8-канального выхода High Definition (опционально)

## BIOS

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

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

BIOS допускает также установку параметров для различных частот процессора.

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

# Cechy

## Procesor

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

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

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

## Chipset

Mostek północny (NB) SiS761GX i mostek południowy (SB) SiS966 (L) chipsetu oparty jest na nowatorskiej i skalowalnej architekturze o sprawdzonej niezawodności i funkcjonalnoœci.

***SiS761GX (NB)***

- SiS MuTIOL jest włączony w celu zapewnienia połączenia między urządzeniami SiS761GX i SiS966 MuTIOL Media IO
- Zabezpiecza technologię HiperTransportu ™ w paśmie do 2000MT/s
- Zintegrowany MuTIOL 1G z mostkiem PCI Express x1, zgodny ze specyfikacją PCI Express w wersji 1.0a
- Zabezpiecza do 128 MB pamięci wideo z pamięci wspólnej
- Obsługa zintegrowanego akseleratora grafiki 3D/2D

***SiS966 (L) (SB)***

- Zintegrowane We/Wy Multi-thread zapewniające konkurencyjne linie przesyłania danych Upstream/ Downstream z szybkością 1.2 GB/s
- Zgodnie z protokołem PCI 2.3 obsługuje do 6 urządzeń PCI typu masters
- Zgodny ze specyfikacją PCI Express w wersji 1.0a
- Zgodnie z protokołem Serial ATA 1.0a
- Obsługuje kontroler podwójnego IDE Master/Slave, obsługuje UltraDMA 133/100/66/33
- Zgodny z protokołem AC'97/Intel High Definition Audio Codec(s), obsługuje 8 kanałowe wyjście audio (opcjonalnie)
- Kontroler USB 2.0 obsługujący do 8 gniazd USB 2.0

## Pamięć

- DDR2 800/667/533/400 DDR2 SDRAM z architekturą dwukanałową DDR2
- Przystosowana do obsługi dwu banków niebuforowanej pamięci DIMM o pojemności do 16 GB.

## Grafika

- Wbudowany 32-bitowy procesor formatu zmiennoprzecinkowego VLIW triangle setup
- Wbudowany 128-bitowy procesor graficzny 1Tpipelined BITBLT
- Wbudowany przyśpieszacz Direct Draw & GDI+
- Obsługuje tekstury do rozmiarów 2048 x 2048
- Współużytkowanie maksymalnie 128 MB pamięci graficznej

## 1394a FireWire (opcjonalnie)

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

## Zintegrowana obsługa sieci LAN (opcjonalnie)

Zintegrowana obsługa sieci LAN posiada następujące właściwości:

| |
|---|
| • Możliwe operacje 100/10 Mb/s N-way Auto-negotiation<br>• Zdolność Half/Full duplex<br>• Obsługuje Wake-on-LAN i zdalne wake-up |
| • Zintegrowany transceiver LAN 10/100/1000<br>• 32 bitowa szyna PCI w wersji 2.3, 33/66 MHz<br>• Całkowita zgodność z standardem IEEE 802.3, IEEE802.3u i IEEE802.3ab |
| • Terminal szybkiego Ethernetu 10BASE-T/100BASE-TX IEEE 802.3u<br>• Zintegrowany regulator napięcia umożliwiający zasilanie w zakresie 2,5 / 3,3 V<br>• Praca w trybach HP auto-MDIX i Low-power |

## Audio (opcjonalnie)

Ta płyta główna obsługuje wszystkie z niżej wymienionych chipsetów audio.

| |
|---|
| • Zgodne ze specyfikacją AC'97 w wersji 2.3<br>• Obsługuje 6 kanałów audio CODEC dla komputerowych systemów multimedialnych<br>• Zapewnia trzy wejściowe, analogowe linie stereo z 5 bitową regulacją głośności: Line-in, CD, AUX<br>• Spełnia wymagania stawiane audio przez firmę Microsoft w systemie WHQL/WLP 2.0 |
| • Obsługuje 8 kanałów DAC w formacie 24/20/16-bit PCM w standardzie audio 7.1<br>• Obsługuje częstotliwości próbkowania 192K/96K/48K/44.1KHz DAC<br>• Zasilacz obsługuje odbiorniki 3.3V cyfrowe i 3.5V~5.25V analogowe<br>• Zgodna ze specyfikacją Microsoft WHQL/WLP 2.x audio<br>• Zgodny z Direct Sound 3D™<br>• Wyjście Dolby® Digital Encoder dla zastosowań konsumenckich |

## Możliwości rozbudowy

Płyta główna wyposażona jest w następujące gniazda:

- Jedno gniazdo do karty graficznej typu PCI Express x16
- Jedno gniazdo PCI Express x1
- Dwa 32-bitowe gniazda PCI
- Jedno gniazdo CNR (opcjonalnie)
- Dwa złącza IDE mogące obsłużyć do czterech urządzeń IDE
- Jedno złącze obsługujące stacje dyskietek
- Dwa/cztery (opcjonalnie dla mostka SiS966) 7 nóżkowe złącza SATA

Płyta główna obsługuje magistralę Ultra DMA o szybkościach przesyłu 133/100/66MB/s.

## Zintegrowane We/Wy

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

- Dwa gniazda PS/2 dla myszy i klawiatury
- Jedno gniazdo szeregowe
- Jedno gniazdo równoległe
- Jedno gniazdo VGA
- Cztery gniazda USB
- Jedno gniazdo LAN (opcjonalnie)
- Jedno gniazdo IEEE 1394 (opcjonalnie)
- Gniazda dla mikrofonu, wejścia audio i 6 kanałowego wyjścia audio oraz mikrofonu, wejścia audio i 8 kanałowego wyjścia audio High Definition (opcjonalnie).

## Firmowy BIOS

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

- Zarządzanie poborem mocy
- Alarmy typu Wake-up
- Parametry pracy procesora
- Ustalenia szybkoœci pracy procesora i pamiêci

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

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

# Vlastnosti

## Procesor

Tato základní deska využívá patici Socket AM2 nabízející následující vlastnosti:

- Připojení procesorů AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/ Sempron
- 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) SiS761GX a southbridge (SB) SiS966 (L) jsou založeny na inovativní a škálovatelné architektuře s ověřenou spolehlivostí a výkonností.

***SiS761GX (NB)***

- SiS MuTIOL je určen ke vzájemnému propojení SiS761GX a SiS966 MuTIOL Media IO
- Podpora technologie HyperTransport ™s maximální šířkou pásma 2000 MT/s
- Integrovaný můstek MuTIOL 1G pro PCI Express 1x, splňující standardy sběrnice PCI Express verze 1.0a
- Podpora až 128MB paměti grafického systému (sdílená paměť)
- Podpora vysoce výkonného 3D/2D grafického akcelerátoru s vysokou kvalitou

***SiS966 (L) (SB)***

- Integrované rozhraní I/O s více kanály zajišťuje současný přenos dat oběma směry se šířkou pásma 1.2 GB/s
- Splňuje požadavky standardu PCI 2.3 s podporou 6 hlavních kanálů PCI
- Shoda se standardem PCI Express 1.0a
- Splňuje požadavky standardu Serial ATA 1.0a
- Podpora duálního řídicího/řízeného řadiče IDE – UltraDMA 133/100/66/33
- Splňuje požadavky standardu Hi–Fi audiokodeku AC'97/Intel s podporou 8kánlových zvukových výstupů (volitelně)
- Řadič USB 2.0, s podporou až 8 portů USB 2.0

## Paměť

- Paměti DDR2 800/667/533/400 DDR2 SDRAM s dvoukanálovou architekturou DDR2
- Podpora dvou modulů DIMM bez vyrovnávací paměti s maximální kapacitou 16 GB

## Grafika

- Vestavěné 32bitové jádro pracující s formátem VLIW s plovoucí desetinnou čárkou
- Vestavěné grafické jádro 1T se 128bitovou pipeline BITBLT
- Vestavěná podpora akcelerátoru Direct Draw a GDI+
- Podpora velikosti textur až 2048 x 2048
- Sdílená operační paměť grafického čipu, maximálně 128 MB

## 1394a FireWire (volitelné)

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

## Vestavění síťové rozhraní LAN (volitelně)

Vestavěné síťové rozhraní LAN nabízí následující možnosti:

| |
|---|
| • 100/10 Mb/s Ncestné automatické přepínání provozu<br>• Podpora plného/polovičního duplexního provozu<br>• Podpora funkce Wake–on–LAN a vzdálené aktivace |
| • Integrovaný přijímač/vysílač 10/100/1000<br>• Sběrnice PCI v2.3, 32bitová, 33/66 MHz<br>• Shoda podle norem IEEE 802.3, IEEE802.3u a IEEE802.3ab |
| • Rychlá síťový modul Ethernet 10BASE-T/100BASE-TX IEEE 802.3u<br>• Integrovaný regulátor napětí umožňující provoz s jediným napájecím zdrojem 3,3/2,5 V<br>• Podporuje automatický -MDIX a nízkovýkonný režim |

## Zvuk (volitelně)

Tato základní deska může podporovat libovolnou zvukovou čipovou sadu.

| |
|---|
| • Splňuje požadavky standardu AC'97 2.3<br>• Podpora 6kanálového zvukového kodeku určeného pro multimediální PC systémy<br>• Nabízí tří analogové linkové stereo vstupy s 5bitovým řízení hlasitosti: LINE-IN, CD, AUX<br>• Splňuje požadavky pro audio zařízení Microsoft WHQL/WLP 2.0 |
| • 8 kanálů převodníku DAC podporuje 24/20/16bitový formát PCM pro zvukový výstup 7.1<br>• Podpora vzorkovací frekvence převodníku DAC 192k/96k/48k/44,1kHz<br>• Podpora napájení: Digitální: 3,3 V; Analogové: 3,5 V ~ 5,25 V<br>• Splňuje požadavky na audio zařízení Microsoft WHQL/WLP 2.x<br>• Kompatibilita s Direct Sound 3D™<br>• Výstup digitálního enkodéru Dolby® pro použití s elektronickými zařízeními uživatele |

## 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
- Jedna patice CNR (volitelně)
- Dva konektor IDE podporující až čtyři zařízení IDE
- Jedno rozraní pro disketovou mechaniku
- Dva/čtyři (volitelně pro SiS966) 7kolíkové řadiče SATA

Tato základní deska podporuje řízení sběrnice Ultra DMA s přenosovými rychlostmi 133/100/66 MB/s.

## Integrovaný vstup/výstup

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

- Dva porty PS/2 pro myš a klávesnici
- Jeden sériový port
- Jeden paralelní port
- Jeden port VGA
- Čtyři porty USB
- Jeden port LAN (volitelně)
- Jeden port IEEE 1394 (volitelně)
- Audiokonektory pro mikrofon, linkový vstup a 6kanálový výstup a mikrofon, linkový vstup a 8kanálový Hi-Fi audio výstup (volitelně)

## Firmware BIOS

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

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

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

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

# Caracteristici

## Procesorul

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

- acomodează procesoare AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/ Athlon 64/Sempron
- 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 SiS761GX Northbridge (NB) şi SiS966 (L) Southbridge (SB) se bazează pe o arhitectură inovatoare şi scalabilă, care s-a impus deja prin fiabilitate şi performanță.

***SiS761GX (NB)***

- SiS MuTIOL este incorporat pentru a conecta SiS761GX şi SiS966 MuTIOL Media IO
- Suportă tehnologia HyperTransport™ cu lățime de bandă de cel mult 2000 MT/s
- MuTIOL 1G to PCI Express x1 Bridge integrat, compatibil cu specificația PCI Express spec. 1.0a
- Suportă o memorie video de cel mult 128 MB cu memorie partajată
- Suport pentru accelerator grafic de înaltă performanță şi 3D/2D de cea mai bună calitate

***SiS966 (L) (SB)***

- Multi-threaded I/O link integrat asigură concurența transferului de date upstream/downstream la lățimea de bandă de 1.2 GB/s
- Compatibil cu specificația PCI, versiunea 2.3, care suportă cel mult 6 module PCI master
- Compatibil cu specificația PCI Express 1.0a
- Compatibil cu specificația Serial ATA 1.0a
- Suport pentru controller Dual IDE Master/Slave suport pentru UltraDMA 133/100/66/33
- Compatibilitate cu specificațiile AC'97/Intel High Definition Audio Codec, suportând ieşiri audio pe 8 canale (opțional)
- Controler USB 2.0, cu suport pentru până la 8 porturi USB 2.0



## Memoria

- Suportă module DDR2 SDRAM DDR2 800/667/533/400 cu arhitectură DDR2 cu canal dual
- Funcționează cu două module fără zonă tampon DIMM, cu capacitate maximă de 16 GB

## Grafică

- Format VLIW de calcul în triunghi în virgulă mobilă, de 32 biți, incorporat
- Motor grafic BITBLT de 128 biți, cu canal de prelucrare 1T, incorporat
- Direct Draw & GDI+ Accelerator încorporat
- asigură mărime textură de până la 2048 x 2048
- Memorie afişaj shared maximum 128 MB

## 1394a Fire Wire (opţional)

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

## Onboard LAN (opţional)

Onboard LAN are următoarele caracteristici:

| |
|---|
| • Operare100/10 Mb/s N-way Auto-negotiation<br>• Suportă modul de operare duplex total/semi-duplex<br>• Suport pentru funcțiile Wake-on-LAN şi trezire la distanță |
| • Unitate de emisie/recepție 10/100/1000 integrat<br>• PCI v2.3, 32-bit, 33/66 MHz<br>• Complet comaptibil cu IEEE 802.3, IEEE802.3u şi IEEE802.3ab |
| • 10BASE-T/100BASE-TX IEEE 802.3u fast Ethernet transceiver<br>• Regulator de tensiune integrat pentru a permite funcționarea de la o singură sursă de current de 3.3/2.5Vsupply<br>• Suportă HP auto-MDIX şi modul de mică putere |

## Audio (opţional)

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

| |
|---|
| • Compatibil cu specificația AC'97 2.3<br>• Suportă CODEC cu şase canale audio destinate sistemelor multimedia ale calculatoarelor<br>• Oferă trei intrări audio analoge stereo, cu un control al volumului sonor de 5 biți: Intrare audio, CD, AUX<br>• Corespunde cerințelor audio Microsoft WHQL/WLP 2.0 |
| • Suport DAC 8 canale format PCM 24/20/16-bit pentru soluții audio 7.1<br>• Suport 192K/96K/48K/44.1KHz DAC sample rate<br>• Suport curent: Digital: 3.3V; Analog: 3.5V~5.25V<br>• Compatibilă cu specificațiile audio Microsoft WHQL/WLP 2.x<br>• Compatibil cu Direct Sound 3D™<br>• Ieşire Dolby® Digital Encoder pentru aplicațiile electronice ale clientului |

## Opţiuni de extindere

Placa de bază este dotată următoarele posibilități de extindere:

- Un slot PCI Express x16 pentru interfață grafică
- Un slot PCI Express x1
- Două sloturi PCI de 32 biți
- Un slot CNR (opțional)
- Două conectoare IDE care suport cel mult 4 instrumente IDE
- O interfață pentru unitate floppy
- Două/patru (opțional pentru SiS966) conectoare SATA cu 7 ace

Această placă de bază suportă Ultra DMA bus mastering cu viteza de transfer de 133/100/66MB/s.

## I/O integrată

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

- Două porturi PS/2, pentru mouse şi tastatură
- Un port serial
- Un port paralel
- Un port VGA
- Patru porturi USB
- Un port LAN (opțional)
- Un port IEEE 1394 (opțional)
- Jack-uri audio pentru microfon, line-in şi line-out & microfon 6 canale, line-in şi line-out audio High Definition 8 canale (opțional)

## Firmware BIOS

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

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

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

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

# Спецификация

## Процесор

Тази дънна платка използва сокет AM2 със следните спецификации:

- Поддръжка на процесори AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/ Athlon 64/Sempron
- Поддръжка на технологията HyperTransport™ (HT) със скорост до 2000 MT/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 SiS761GX (NB) и южен мост SiS966(L) (SB) е изграден на базата на оригинална архитектура с възможност за надстройка с доказана надеждност и производителност.

***SiS761GX (NB)***

- Интегрирана система SiS MuTIOL за връзка между мостовете SiS761GX и SiS966 MuTIOL Media IO
- поддръжка на технологията HyperTransport ™ със скорост до 2000 MT/s
- Интегрирана шина MuTIOL 1G към моста PCI Express x1, съвместима със спецификацията PCI Express1.0a
- поддръжка на видео памет до 128MB със споделена памет
- поддръжка на високопроизводителен 3D/2D графичен ускорител

***SiS966(L) (SB)***

- Интегрирана многонишкова I/O връзка за едновременен пълноценен трансфер на данни в двете посоки с честотна лента 1.2 GB/s
- съвместимост със спецификацията PCI 2.3 с поддръжка до 6 PCI мастъра
- съвместимост със спецификацията PCI Express 1.0a
- съвместимост със спецификацията Serial ATA 1.0a
- Двоен IDE Master/Slave контролер, поддържащ UltraDMA 133/100/66/33
- Съвместимост с AC'97/Intel High Definition Audio Codec(s) с поддръжка на 8-канални аудио изходи (опция)
- USB 2.0 контролер с поддръжка до 8 порта USB 2.0

## Памет

- Дву-канална архитектура на паметта DDR2 800/667/533/400 DDR2 SDRAM
- Поддръжка на два небуферирани слота DIMM с общ максимален капацитет 16 GB

## Графичен чип

- интегриран triangle setup engine с 32-bit формат на плаваща запетая VLIW
- интегрирано графично ядро 1T pipelined 128-bit BITBLT
- Интегриран Direct Draw & GDI+ Ускорител
- Поддръжка на размер на текстурите до 2048 x 2048
- споделена памет за монитора 128 MB

## 1394a FireWire контролер (опция)

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

## Интегриран мрежов контролер (опция)

Интегриран LAN контролер със следните характеристики:

- режими на работа 100/10 Mb/s N-way с автоматично съгласуване
- Поддръжка на режими half/full duplex
- поддръжка на функция за "събуждане" Wake-On-LAN и дистанционен wake-up

- Интегриран трансивер 10/100/1000
- PCI v2.3, 32-bit, 33/66 MHz
- Пълна съвместимост с IEEE 802.3, IEEE802.3u и IEEE802.3ab

- Мрежов комутатор Ethernet 10BASE-T/100BASE-TX IEEE 802.3u
- Интегриран регулатор на напрежението за работа от единствен източник на захранване 3.3/2.5V
- Поддръжка на функцията HP auto-MDIX (автоматично откриване, проверка на качеството и коригиране на сигнали по кабелите) и режим на работа с ниско напрежение (low-power mode)

## Аудио(опция)

- Аудио Кодек съвместим с AC'97 v2.3
- Поддръжка на 6-канален аудио кодек за мултимедийни компютърни системи
- Три аналогови линейни стерео входа с 5-битов контрол на силата на звука: Line-in, CD, AUX
- Съответствие с изискванията на Microsoft WHQL/WLP 2.0

- 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.

## Възможности за разширяване

Дънната платка има следните разширителни възможности:

- Един PCI Express x16 слот за графичен интерфейс
- Един PCI Express x1 слот
- Два 32-bit PCI слота
- Един слот CNR (опция)
- Два IDE конектора с поддръжка до четири IDE устройства
- Един конектор за флопидисково устройство
- два 7-щифтови SATA конекторas
- Два/четири (опция за SiS966) 7-pin SATA конектора

Дънната платка поддържа шина Ultra DMA 133/100/66MB/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 LAN порт (опция)
- един IEEE 1394 порт (опция)
- Аудио изводи за микрофон, линеен вход и 6-канален линеен изход & микрофон или линеен вход и 8-канален линеен изход за High Definition Audio (опция)

## BIOS Firmware

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

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

настройка на скоростта на часовника на процесора

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

# Jellemző

## Processzor

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

- AMD Athlon 64 FX/Athlon 64 X2 Dual-Core/Athlon 64/Sempron processzorokat akkomodál
- 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 SiS761GX Northbridge (NB) és SiS966 (L) Southbridge (SB) lapkakészletek egy új és méretezhető, nagy megbízhatóságú és teljesítőképességű architektúrára épülnek.

***SiS761GX (NB)***

- Beépített SiS MuTIOL a SiS761GX és SiS966 MuTIOL Media IO összekapcsolására
- Támogatja a max. 2000 MT/s sávszélességű HyperTransport™ technológiát
- Integrált MuTIOL 1G to PCI Express x1 híd, megfelel a PCI Express spec.1.0a specifikációnak
- Maximum 128MB képernyő-memóriát támogat, megosztott memóriával
- Nagyteljesítményű és csúcsminőségű 3D/2D grafikus gyorsító támogatása

***SiS966 (L) (SB)***

- Integrált Multi-threaded I/O kapcsolás biztosítja a menetirányú-menetiránnyal szembeni adatátvitel együttfutását 1.2 GB/s sávszélességen
- a PCI 2.3 szabvánnyal kompatibilis, maximum 6 PCI mastert támogat
- Megfelel a PCI Express 1.0a specifikációnak
- Kompatibilis a soros ATA 1.0 szabvánnyal
- Támogat Dual IDE Gazda/szolga vezérlő, UltraDMA 133/100/66/33 támogatás
- Kompatibilis az AC'97/Intel High Definition Audio Codec előírásokkal, 8 csatornás audio kimenetet támogatva (opcionális)
- USB 2.0 vezérlő, biztosítva egészen 8 USB 2.0 portot

## Memória

- DDR2 800/667/533/400 DDR2 SDRAM modulok kétcsatornás DDR2 kiépítésben
- Két puffer nélküli DIMM, maximum 16 GB-os memóriakapacitással

## Grafika

- Beépített 32 bites VLIW lebegőpontos háromszög számítás
- Beépített 1T csővonalas 128 bites BITBLT grafikus motor
- Beépített Direct Draw & GDI+ gyorsító
- Megfelel egészen 2048 x 2048 textúra méretnek
- Maximális 128 MB megosztott kijelzés-memória

## 1394a FireWire (opcionális)

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

## Alaplapon levő LAN (választható)

Ez az alaplap a következő LAN lapkakészletek bármelyikét támogatja.

| |
|---|
| • 100/10 Mb/s N-útú Auto-negotiation operáció<br>• Fél-/teljes duplex<br>• A Wake-on-LAN és a távoli ébresztés funkciók támogatása |
| • Beépített 10/100/1000 adó-vevõ<br>• PCI v2.3, 32-bit, 33/66 MHz<br>• Teljesen megfelel az IEEE802.3, IEEE802.3u és IEEE802.3ab szabványoknak |
| • 10BASE-T/100BASE-TX IEEE 802.3u gyors Ethernet adó-vevő<br>• Integrált feszültség-szabályozó, mely lehetővé teszi az üzemeltetést egyetlen 3.3/2.5-os áramforrásról<br>• Támogatja a HP auto-MDIX-et és az alacsony teljesítményű üzemmódot |

## Audio (opcionális)

Ez az alaplap a következő Audio lapkakészletek bármelyikét támogatja.

| |
|---|
| • Megfelel az AC'97 2.3-as specifikációnak<br>• A számítógép multimédiás rendszereinek szánt hat csatornás audio CODEC-et támogat<br>• Három analóg sztereo bemenetet biztosít 5 bites hangerő vezérléssel: bemenet, CD, AUX<br>• Megfelel a Microsoft WHQL/WLP 2.0 audio követelményeine |
| • 8 csatornás DAC támogatás 24/20/16-bit PCM formátum 7.1 hangberendezésre<br>• 192K/96K/48K/44.1KHz DAC sample rate támogatással<br>• Áramellátás: Digitális: 3.3V; Analóg: 3.5V~5.25V<br>• Megfelel a Microsoft WHQL/WLP 2.x audio követelményeinek<br>• Kompatibilis a Direct Sound 3D™ technológiával<br>• Dolby® Digital Encoder digitális kóder kimenet a vevő elektromos alkalmazásaihoz |

## Bővítési lehetőségek

Az alaplap a következő bővítési lehetőségekkel rendelkezik:

- Egy PCI Express x16 nyílás grafikai interfészhez
- Egy PCI Express x1
- Két 32 bites PCI foglalat
- Egy CNR foglalat (opcionális)
- Két IDE csatlakozó, amely összesen négy IDE eszközt támogat
- Egy hajlékonylemez meghajtó interfész
- Két/négy (opcionális a SiS966-hez) 7-tűs SATA csatlakozó

Ez az alaplap a 133/100/66 MB/s átviteli sebességű Ultra DMA 'bus mastering' megoldást is támogatja.

## 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 LAN port (választható)
- Egy IEEE 1394 port (választható)
- Audio dugaszok mikrofonhoz, line-in-hez és 6 csatornás line-out-hoz és mikrofonhoz, line-in-hez és 8 csatornás nagy élességű audio line-out (opcionális)

## BIOS Firmware

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

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

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

*Bizonyos hardverjellemzők és szoftverelemek előzetes bejelentés nélkül módosulhatnak.*