K8X250

Copyright

Trademark

Disclaimer

We make no warranty of any kind with regard to the content of this user's manual. The content is subject to change without notice and we will not be responsible for any mistakes found in this user's manual. All the brand and product names are trademarks of their respective companies.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits of 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. However, there is no guarantee that interference will not occur in a particular installation.

CE Mark

The device is in accordance with 89/336 ECC-ENC Directive.

Ver: EG101

Things You Should Know

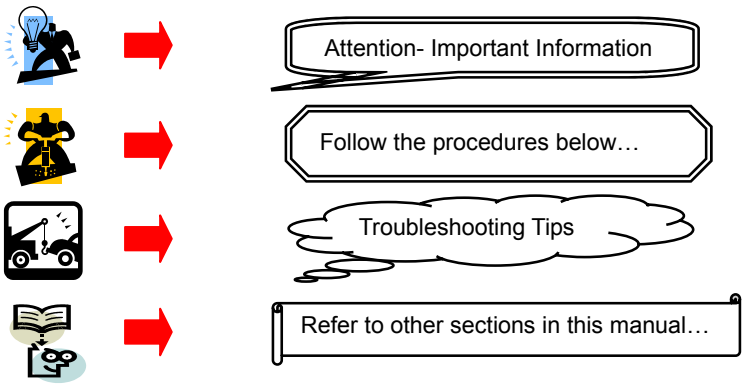
- The images and pictures in this manual are for reference only and may vary from the product you received depending on specific hardware models, third party components and software versions.
- This mainboard contains very delicate IC chips. Always use a grounded wrist strap when working with the system.
- Do not touch any IC chip, lead, connector or other components.
- Always unplug the AC power when you install or remove any device on the mainboard or when confuguring pins and switches.

Packing List

- K8X250 mainboard
- FDD Cable
- HDD Cable
- I/O Bracket (for ATX case)
- USB 2.0 cable (optional)
- SPDIF card (optional)
- SATA Power Cord (Optional)
- SATA Cable (Optional)
- Mainboard User Manual CD
- Mainboard Setup Driver CD
- Mainboard Quick Installation Guide (optional)

Symbols

The following list explains the convention for symbols that will be used throughout this manual:



K8X250

nVIDIA® nForce3 250
Support Socket 754
AMD Athlon™ 64/ Sempron™ Processor

User Manual

Dimensions (ATX form-factor):

- 205mm x 305mm (W x L)

Operating System:

- Windows® 2000/ XP

Table of Contents

Chapter 1. Getting Started

Introduction

Congratulations on the choosing the K8X250 Mainboard. It is based on the nVIDIA® nForce3 250 chipset and it supports the AMD Athlon™ 64/ Sempron™ Processor with system bus 800 MHz (1600MT/s).

The K8X250 provides two 184-pin DIMM (Dual In-Line Memory Modules) sockets which support to insert DDR400 (PC3200)/ DDR333 (PC2700)/ DDR266 (PC2100)/ DDR200 (PC1600) SDRAMs, and support a total memory capacity of 2 GB.

The K8X250 provides one 8x AGP slot, five 32-bit PCI slots, and one CNR slot (optional). It also provides two IDE connectors for IDE devices with supporting PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100/133. One floppy disk drive connector that can be used with 360KB/ 720KB/ 1.2MB/ 1.44MB/ 2.88MB drives.

This mainboard has onboard Serial ATA function with two SATA connectors and are compatible with the SATA 1.0 specification. The SATA interface provides up to 150 Mbps and supports with RAID 0/ 1/ 0+1/ JBOD mode **(See Appendix II)**.

There is a maximum of eight USB2.0/ 1.1 ports that can be set up on this mainboard.

The onboard AC' 97 sound codec supports high quality performance 6-channel audio play (Super 5.1 Channel Audio Effect) **(See Appendix I)** and also supports the Sony/Philips Digital Interfaces (SPDIF) specifications.

The K8X250 comes with an onboard 10/100 Mbps Ethernet LAN chip. There is a LAN port on the back panel that you can directly plug into an Internet cable.

All the information (including hardware installation and software installation) in this manual are for reference only. The contents in this manual may be updated without notice. The company will not assume any responsibility for any errors or mistakes within.

Specification

CPU:

- Support Socket 754
- Support AMD Athlon™ 64/ Sempron™ processor
- Support Hyper-Transport™ Link Technology
- Support system bus 800 MHz (1600MT/s)

Chipset:

- Main Chipset –nVIDIA® nForce3 250
- I/O Controller –ITE IT8712F
- AC' 97 Aduio Codec – Realtek® ALC655
- LAN Controller – Realtek® 8201BL

Memory:

- Two 184-pin DIMM sockets, support a total memory capacity of 2GB
- Supports DDR400 (PC3200)/ DDR333 (PC2700)/ DDR266 (PC2100)/ DDR200 (PC1600) SDRAM

Slots:

- One 8x AGP slot
- Five 32-bit PCI slot
- One CNR slot (optional)

FDC Connector:

- One floppy drive disk connector, supports a maximum of two FDDs to be set up
- Supports 360Kb/ 720Kb/ 1.2Mb/ 1.44Mb/ 2.88Mb

IDE Connector:

- Two IDE connectors, support a maximum of four IDE devices to be set up
- Supports PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100/133
- Supports high capacity hard disk drives

Serial ATA Connector:

- Two SATA connectors, support a maximum of four SATA HDDs to be set up
- Supports SATA 1.0 specification and provides 150 Mbps transmission speeds
- Supports RAID 0/1/ 0+1/ JBOD mode

Onboard AC' 97 Sound Codec:

- High performance Codec with high S/N ratio (>90 db)
- Compliant with AC' 97 2.3 specification
- Supports 6-channel playback capability (Super 5.1 Channel Audio Effect)
- Supports 3D stereo enhancement
- Supports Sony/ Philips Digital Interfaces (S/PDIF) function

Onboard LAN Chip:

- 10/100 Mbps Ethernet LAN supported

Onboard I/O facilities:

- One multi-mode Parallel Port is capable of supporting the following:
  1. Standard & Bi-direction Parallel Port
  2. Enhanced Parallel Port (EPP)
  3. Extended Capabilities Port (ECP)
- Two serial port (The COM3 serial port is optional)
- One SPDIF out port
- One PS/2 mouse port and one PS/2 keyboard port

USB port:

- Four onboard USB 2.0/ 1.1 ports
- Two front USB headers come with this mainboard, support a maximum of four additional USB ports to be set up

BIOS:

- Phoenix-Award™ BIOS
- Supports APM1.2
- Supports ACPI2.0 power management
- Supports USB specifications

Green Function:

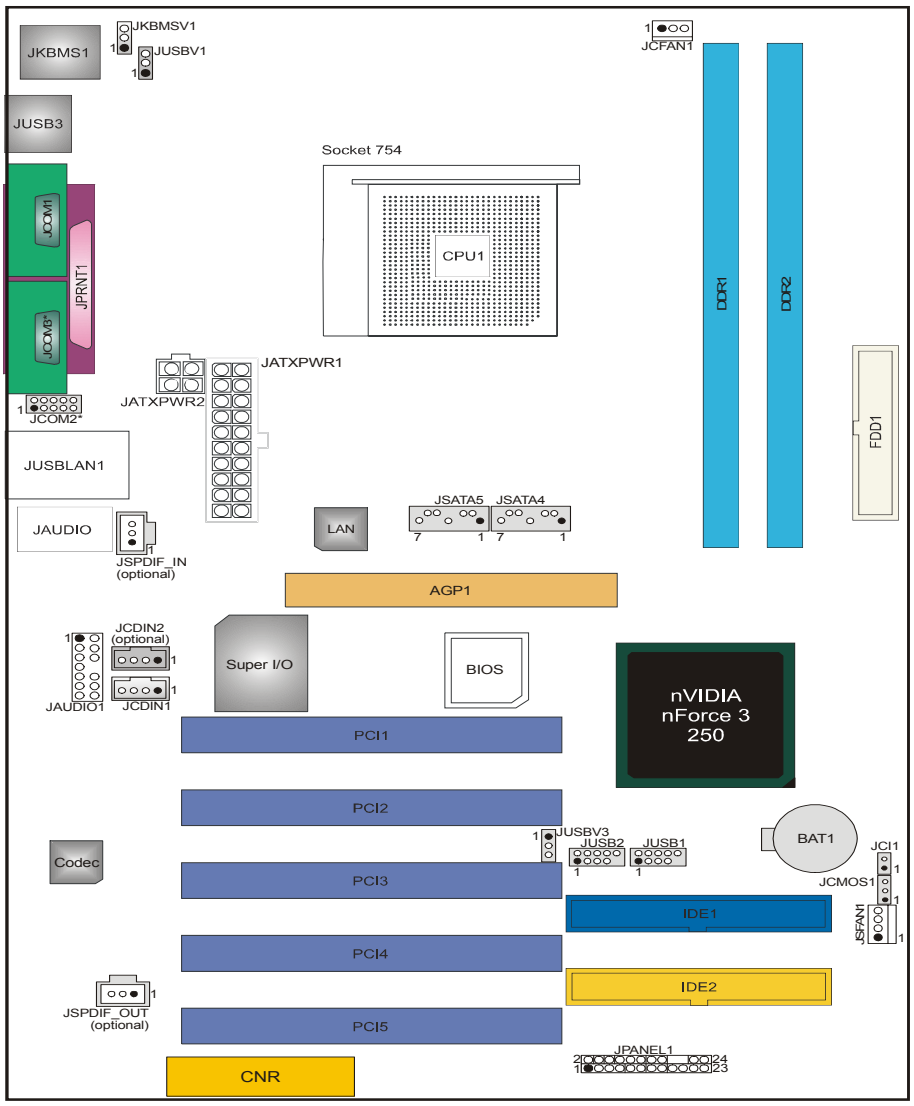
- Supports Phoenix-Award™ BIOS power management functionality
- Supports system-wake-from-power-saving-mode by keyboard or mouse

Hardware Monitor Function:

- Monitor CPU/ Chassis Fan Speed
- Monitor CPU and system temperature
- Monitor system voltages

Configuration

Layout of K8X250



Note 1: ● stands for pin-1 Note 2: JCOM3 is for optional

Hardware Installation

This section will assist you quickly in installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage your system components.

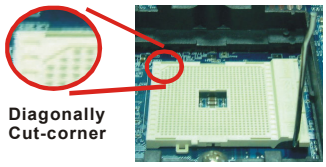
CPU Processor Installation

This mainboard supports AMD Athlon™ 64/ Sempron™ processor using a Socket 754. Before building your system, it is recommended that visit the AMD website for the detailed processor installation procedures. (http://www.amd.com)

CPU Socket 754 Configuration Steps:

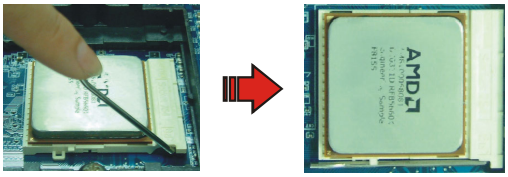
1. Locate the CPU socket on your mainboard and nudge the locking lever away from the socket. Then lift the lever to a 90-degree angle.

2. On the socket, locate the corner which has the “diagonally cut-corner” on the rectangular shaped pattern of pinholes (see diagram below-left). Match that corner with the “gold triangle” on the CPU (see diagram below-right) and lower the CPU onto the socket. The bottom of the CPU should be flush with the face of the socket.

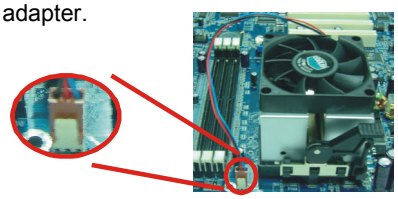


Gold triangle

3. Lower the lever until it snaps back into position. This will lock down the CPU.



4. Smear thermal grease on top of the CPU. Lower the CPU fan onto the CPU and use the clasps on the fan to attach it to the socket. Finally, extend the power cable from the fan and insert it onto the “CPUFAN” adapter.



Attention

DO NOT touch the CPU pins in case they are damaged. Also, make sure that you have completed all installation steps before powered on the system. Finally, double-check that the cooling fan is properly installed and the CPU fan power cord is securely attached, in case your CPU and other sensitive components are damaged because of high temperatures.

FAN Headers: JCFAN1, JSFAN1

There are two fan headers available for cooling fans. The cooling fans play an important role in maintaining ambient temperatures in your system. The JCFAN1 header attaches to the CPU cooling fan. The JSFAN attaches to other cooling fans.

CPU Fan Header: JCFAN1

JCFAN1

Pin	Assignment
1	Ground
2	Power (+12V)
3	FAN RPM rate sense

System Fan Header: JSFAN1

JSFAN1

Pin	Assignment
1	Ground
2	Power (+12V)
3	FAN RPM rate sense

Attention

You can avoid damaging your CPU due to high temperatures with proper cooling equipment. It is recommended that attach a cooling fan on top of your CPU. Use the JSFAN1 header to attach the fan cord.

On most fan power cord, the black wire of the fan cable is the “ground” and should be attached to pin-1 of the header.

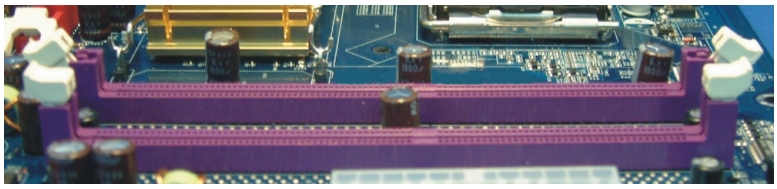
Memory Installation: DIMM1/DIMM2

The K8X250 provides two 184-pin DIMM (Dual In-Line Memory Module) sockets which support to insert DDR400 (PC3200)/ DDR333 (PC2700)/ DDR266 (PC2100)/ DDR200 (PC1600) SDRAMs and a total memory capacity of 2 GB.

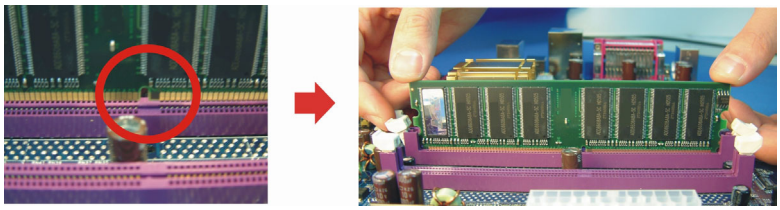
Memory Setup Steps:

The following instructions explain how to install memories onto the DIMM sockets for this mainboard.

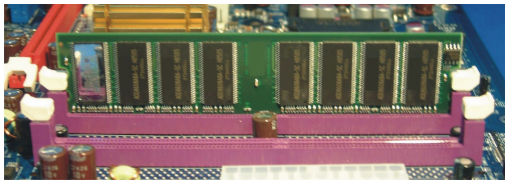
1. Pull the white plastic tabs at both ends of the socket away.



2. Align a memory on the socket such that the notch on the memory matches the break on the socket.



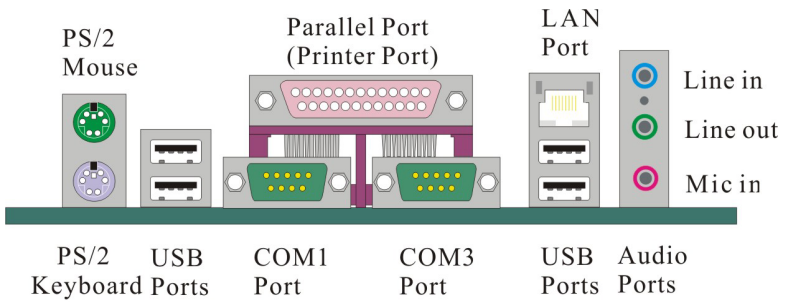
3. Lower the memory vertically into the socket and press firmly by using both thumbs until the memory snaps into place.



4. Repeat steps 1, 2 & 3 for the remaining memory and DIMM sockets setup.

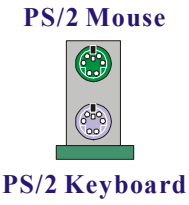
> * The pictures shown above are for reference only. The actual installation procedures may vary depending on the product you received.

Back Panel Configuration



PS/2 Mouse & PS/2 Keyboard Ports: JKBMS1

This mainboard provides a standard PS/2 mouse port and a PS/2 keyboard port. The pin assignments are described below.



Pin	Assignment	Pin	Assignment
1	Data	4	+5 V (fused)
2	N/A	5	Clock
3	Ground	6	N/A

Parallel and Serial Interface Ports

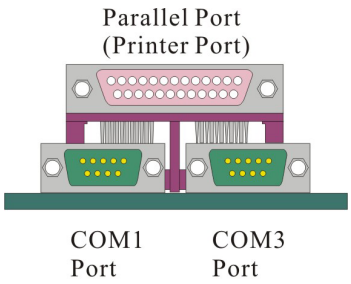
The mainboard provides one parallel port and two serial ports on the back panel.

Parallel Interface Port: JPRT1

The parallel port on your mainboard is a standard 25-pin port and is used to attach a parallel printer.

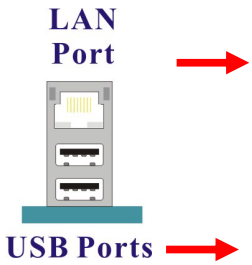
Serial Interface Port: JCOM1/ JCOM3

This mainboard provides the serial port COM1 and COM3 (optional) on the back panel, and are used to attach mice, modems and other peripheral devices.



USB & LAN Ports: JUSB3/JUSBLAN1

There are four USB 2.0/ 1.1 ports on the back panel. These USB ports are used to attach with USB devices, such as keyboard, mice and other USB supported devices. There is also a 10/100 Mbps Ethernet LAN port that you can attach directly to a network cable.

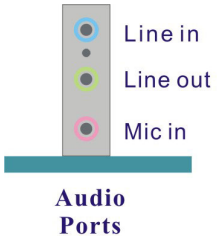


Pin	Assignment	Pin	Assignment
1	TX+ (TX+)	5	NC (TRD2-)
2	TX- (TX-)	6	RX- (RX-)
3	RX+ (RX+)	7	NC (TRD3+)
4	NC (TRD2+)	8	NC (TRD3-)

Pin	Assignment	Pin	Assignment
1/5	+5 V (fused)	3/7	USBP0+/P1+
2/6	USBP0-/P1-	4/8	Ground

Audio Ports: JAUDIO

This mainboard provides three Audio Ports, the Mic-in, Line-in and Line-out. These are standard audio ports that provide basic audio functionality.



Line-In (Blue)

This port is for audio input and used to attach an external audio device such as a CD player, tape player, etc. When the Super 5.1 Channel Audio Effect is enabled, this port will output audio for the rear speakers.

Line-Out (Green)

This port is an output audio port used for connecting to speakers or a headset. When the Super 5.1 Channel Audio Effect is enabled, this port will output audio for the front speakers.

Mic-In (Pink)

This port is for connecting to a microphone. When the Super 5.1 Channel Audio Effect is enabled, this port will output audio for your subwoofer/center speakers.

.

This mainboard supports Super 5.1 Channel Audio Effect which allows you to transform your 2 speaker audio system into a 6 speaker audio system. See **Appendix I** for more information.

Connectors

Floppy Disk Drive Connector: FDD1

The mainboard provides a standard floppy disk drive connector (FDD1) that supports 360KB/ 720KB/ 1.2MB/ 1.44MB/ 2.88 MB specifications. You can attach a maximum of two floppy disk drives using a FDD ribbon cable.

Hard disk drive Connectors:

The mainboard provides two IDE connectors that support PIO mode 0~4, Bus Master, and Ultra DMA 33/66/100/ 133 specifications. You can attach a maximum of four IDE devices, such as hard disk drive (HDD), CD-ROM, DVD-ROM, and so on using the IDE ribbon cables.

Primary IDE Connector: IDE1

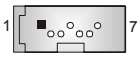
There are two IDE devices can be attached onto this IDE connector. If you attach two IDE HDDs, you must configure one drive as the master and the other one as the slave.

Secondary IDE Connector: IDE2

The IDE2 connector can also be attached with two HDDs using an IDE ribbon cable; however, you also must configure one as the Master and the other one as the Slave.

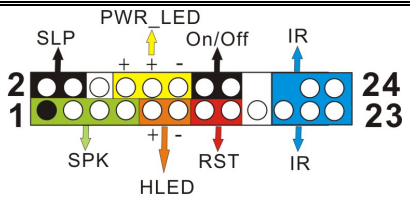
SATA Connector: JSATA4/JSATA5

The two SATA connectors support SATA 150 Mbps transmission speeds and support RAID 0/1/ 0+1/ JBOD mode for SATA HDDs. One SATA connector only can attach only one SATA HDD at a time.

	Pin	Assignment	Pin	Assignment
 JSATA4/ JSATA5	1	Ground	2	TX+
	3	TX-	4	Ground
	5	RX-	6	RX+
	7	Ground		

This mainboard supports SATA RAID 0/1/0+1/JBOD mode, refer **Appendix II** for more information.

Front Panel Headers: JPANEL1



JPANEL1

Pin	Assignment	Function	Pin	Assignment	Function
1	+5V	Speaker (SPK)	2	Sleep control	Sleep Button (SLP)
3	N/A		4	Ground	
5	N/A		6		N/A
7	Speaker		8	Power LED (+)	Power LED (PWRLED)
9	HDD LED (+)	Hard Drive LED (HLED)	10	Power LED (+)	
11	HDD LED (-)		12	Power LED (-)	
13	Ground	Reset Button (RST)	14	Power button	Power-on Button (ON/OFF)
15	Reset control		16	Ground	
17		N/A	18		Key
19	N/A	IrDA (IR)	20	N/A	IrDA (IR)
21	+5V		22	Ground	
23	IRTX		24	IRRX	

Speaker Header (Green): SPK

A speaker cable on your case front panel can be attached to this header. When you reboot the computer, this speaker will issue a short audible (beep). If there are problems during the Power On Self-Test, the system will issue an irregular pattern of audible beeps through this speaker.

Hard Drive LED Header (Orange): HLED

If your case front panel has a hard drive LED cable, attach it to this header. The LED will flicker when there is hard disk drive activity.

Reset Button Header (Red): RST

This header can be attached to a momentary SPST switch (reset button) cable on your case front panel. The switch is normally left open. When the switch closed, it will cause the mainboard to reset and run the POST (Power-On Self Test).

Sleep Button Header (Black): SLP

Attach the CASE front panel SLP cord onto this header can make the system automatically entering into the power saving mode when it is in rest condition.

Power LED Header (Yellow): PWR_LED

Attach the power LED cord from the case front panel onto this header, then the power LED will illuminate while the system is powered on.

Power-on Button Header (Black): ON/OFF

This header can be attached to a power switch cable on your case front panel. You can turn your system on or off by pressing the button attached to this power switch cable.

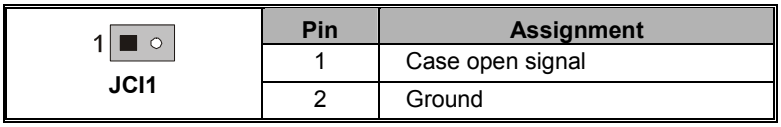
IrDA Header (Blue): IR

Attach the IrDA cord of the case front case onto this header, then you can transfer the data through this function.

Headers & Jumpers

Case Open Warning Header: JCI1

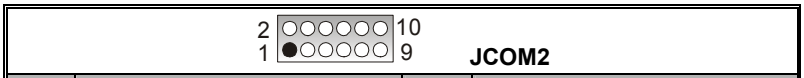
This header is used to warn you when the computer case has been previously opened. To use this function, you have to enable the CASE OPEN warning function in the BIOS Setup Utility. When your computer case is opened, your system will show alert messages during the boot up sequence (your computer case must provide this “case open” cable for this function to work).



Pin	Assignment
1	Case open signal
2	Ground

COM2 Header: JCOM2 (Optional)

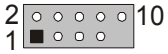
This header allows you to connect an additional serial port on your case back panel.



Pin	Assignment	Pin	Assignment
1	RIN1	2	RIN3
3	DOUT2	4	DOUT3
5	Ground	6	RIN2
7	DOUT1	8	RIN4
9	-XRI1	10	N/C

Front USB Headers: JUSB1/JUSB2

This mainboard provides four USB 1.1/2.0 ports (back panel) that attach to USB devices. There are also two additional USB headers that can be connected by cables to four more USB ports on your PC's front panel giving you a possible 8 USB ports.



JUSB1/JUSB2

Pin	Assignment	Pin	Assignment
1	+5V (fused)	2	+5V (fused)
3	USB-	4	USB-
5	USB+	6	USB+
7	Ground	8	Ground
9	Key	10	N/A

Attention

If you are using a USB 2.0 device with Windows 2000/XP, you will need to install the USB 2.0 driver from the Microsoft® website. If you are using Service pack 1 (or later) for Windows® XP, and using Service pack4 (or later) for Windows® 2000, you will not have to install the driver.

Power Selection for USB Headers: JUSBV1/JUSBV3

USB devices attached to the back panel USB ports can awaken the system from sleep mode. In order to enable this functionality, you must adjust the jumper caps on JUSBV1 or JUSBV3 headers for +5V or +5VSB mode depending on which USB port that the USB device is attached to.

JUSBV1/3	Assignment	Assignment
 **Pin 1-2 Close**	+5V	**JUSBV1:** +5V for JUSB3. **JUSBV3:** +5V for JUSB1/2.
 **Pin 2-3 Close**	+5VSB	**JUSBV1:** JUSB3 is powered with +5V standby voltage. **JUSBV3:** JUSB1/2 are powered with +5V standby voltage.

Note: Close stands for putting a jumper cap onto two header pins.

Power Selection for Keyboard/Mouse: JKBMSV1

Keyboard and mouse attached to the back panel JKBMSV1 ports can awaken the system from sleep mode. In order to enable this functionality, you must adjust the jumper caps on JUKBMSV1 header for +5V or +5VSB mode.

JKBMSV1	Assignment	Assignment
 **Pin 1-2 Close**	+5V	+5V for PS/2 keyboard and mouse
 **Pin 2-3 Close**	+5VSB	PS/2 keyboard and mouse are powered with +5V standby voltage.

Note: Close stands for putting a jumper cap onto two header pins.

Clear CMOS Jumper: JCMOS1

The “Clear CMOS” function is used when you are unable boot your system and need to reset the BIOS settings (CMOS settings) back to the manufacturer’s original settings. This is also a way to reset the system password if you have forgotten it.

JCMOS1	Assignment
 **Pin 1-2 Close**	Normal (Defult)
 **Pin 2-3 Close**	Clear CMOS Data

Note: Close stands for putting a jumper cap onto two header pins.

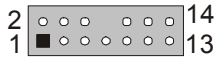
The following steps explain how to reset your CMOS configurations when you forgot a system password.

1. Turn off your system and disconnect the AC power cable.
2. Set JCMOS1 header to OFF (2-3 Closed).
3. Wait several seconds.
4. Set JCMOS1 header to ON (1-2 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

Audio Configuration

Front Audio Connector: JAUDIO1

If your case front panel has audio ports, you can connect them to the Front Audio Header of this mainboard. First, you must remove the jumper caps on this header and then attach the cables from the front panel to the pins on this header. You can use both the front audio panel and back panel audio simultaneously. If you are not using front panel audio ports, leave the jumper caps on the header pins (pins 5&6, 9&10, 11&12, and 13&14) to avoid problems with the back panel audio ports.

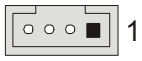


JAUDIO1

Pin	Assignment	Pin	Assignment
1	Mic in/center	2	Ground
3	Mic power/Bass	4	Audio power
5	Right line out/Speaker out right	6	Right line out/Speaker out right
7	Reserved	8	Key
9	Left line out/Speaker out left	10	Left line out/Speaker out left
11	Right line in/Rear speaker right	12	Right line in/Rear speaker right
13	Left line in/Rear speaker left	14	Left line in/Rear speaker left

CD-ROM Audio-In Connector: JCDIN1/ JCDIN2 (optional)

The JCDIN1 and JCDIN2 (optional) connectors are used to attach an audio cable to audio devices such as CD-ROMs, DVD-ROMs etc.

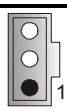


CD-IN

Pin	Assignment
1	Left channel input
2	Ground
3	Ground
4	Right channel input

Digital Audio-out Connector: SPDIF_OUT (optional)

Attach the cords from the SPDIF card (optional) onto this connector can use for outputing digital audio.

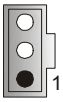


JSPDIF_OUT

Pin	Assignment
1	+5V
2	SPDIF OUT
3	Ground

Digital Audio-out Connector: SPDIF_IN (optional)

Attach the cords from the SPDIF card (optional) onto this connector can use for inputing digital audio.



JSPDIF_IN

Pin	Assignment
1	+5V
2	SPDIF IN
3	Ground

Slots

Accelerated Graphics Port Slot: AGP1

The mainboard supports to install a graphics card with AGP interface or PCI interface for display. The AGP slot comes with AGP Technology and will take advantage to improve your display efficiency and performance. This AGP slot comes with AGP 3.0 specification and supports a 8x graphics card to be installed.

Peripheral Component Interconnect Slots: PCI1~5

This mainboard provides five standard 32-bit PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards.

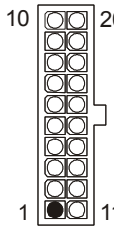
Communication Network Riser Slot: CNR1 (optional)

The CNR stands for Communication Network Riser, which is an open Industry Standard Architecture and supports modem only.

Power Supply Attachments

ATX Power Connector: JATXPWR1, PATXPWR2

This mainboard provides two power connectors, a 20-pin JATXPWR1 connector and a 4-pin PATXPWR2 connector. You must use a power supply that has both of these connectors and both connectors must be attached before the system is powered on. These power connectors support several power management functions such as the instant power-on function. The connector pins are described below.



JATXPWR1

Pin	Assignment	Pin	Assignment
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS_ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PW_ON	18	-5V
9	+5V standby voltage	19	+5V
10	+12V	20	+5V

2 1 4 3 JATXPWR2	Pin	Assignment	Pin	Assignment
	1	+12V	3	Ground
	2	+12V	4	Ground

Attention
In general, power cords are designed and should be attached with a specific direction. The black wire of the power cord is Ground and should be attached onto the header location of Ground.

Chapter 2. BIOS Setup

Introduction

This section describes PHOENIX-AWARD™ BIOS Setup program which resides in the BIOS firmware. The Setup program allows users to modify the basic system configuration. The configuration information is then saved to CMOS RAM where the data is sustained by battery after power-down.

The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. As well, the BIOS control the first stage of the boot process, loading and executing the operating system.

The PHOENIX-AWARD™ BIOS installed in your computer system's ROM is a custom version of an industry standard BIOS. This means that it supports the BIOS of Intel® based processors.

This version of the PHOENIX-AWARD™ BIOS includes additional features such as virus and password protection as well as special configurations for fine-tuning the system chipset. The defaults for the BIOS values contained in this document may vary slightly with the version installed in your system.

Key Function

In general, you can use the arrow keys to highlight options, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate within the BIOS Setup program.

Keystroke	Function
Up arrow	Move to previous option
Down arrow	Move to next option
Left arrow	Move to the option on the left (menu bar)
Right arrow	Move to the option on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the option you desire
PgUp key	Increase the numeric value or enter changes
PgDn key	Decrease the numeric value or enter changes
+ Key	Increase the numeric value or enter changes
- Key	Decrease the numeric value or enter changes
Esc key	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu – Exit Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the defaults from BIOS default table

Menu Description

Standard CMOS Features
Include all the adjustable items in standard compatible BIOS.

Advanced BIOS Features
Include all the adjustable items of Award special enhanced features.

Advanced Chipset Features
Include all the adjustable items of chipset special features.

Integrated Peripherals
Include all onboard peripherals.

Power Management Setup
Include all the adjustable items of Green function features.

PnP/PCI Configurations
Include all configurations of PCI and PnP ISA resources.

PC Health Status
It is for monitoring the system status such as temperature, voltage, and fan speeds.

Voltage Control
It is for setting the CPU clock and frequency ratio.

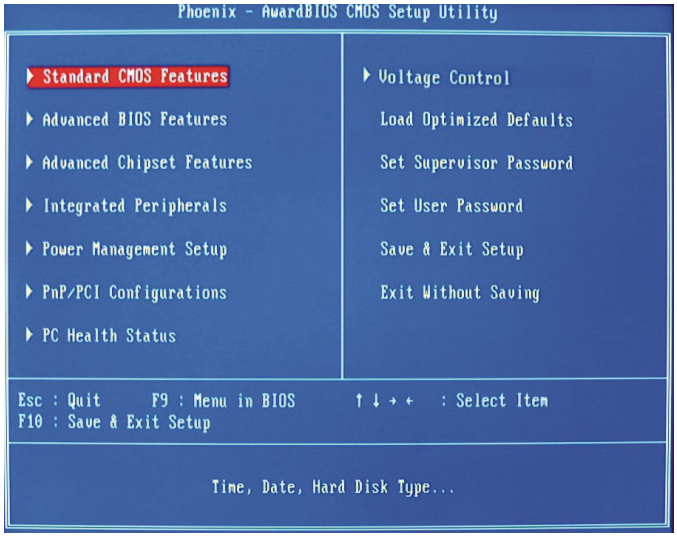
Load Optimized Defaults
It can load the preset system parameter values to set the system in its best performance configurations.

Set Supervisor Password
Set change or disable password. It allows you to limit access to the system and/or BIOS setup.

Set User Password
Set change or disable password. It allows you to limit access to the system.

Save & Exit Setup
Save CMOS value settings to CMOS and exit setup.

Exit Without Saving
Abandon all CMOS value changes and exit setup.



Chapter 3: Troubleshooting

Problem 1:

No power to the system. Power light does not illuminate. Fan inside power supply does not turn on. Indicator lights on keyboard are not lit.

Causes:

1. Power cable is unplugged.
2. Defective power cable.
3. Power supply failure.
4. Faulty wall outlet; circuit breaker or fuse blown.

Solutions:

1. Make sure power cable is securely plugged in.
2. Replace cable.
3. Contact technical support.
4. Use a different socket, repair outlet, reset circuit breaker or replace fuse.

Problem 2:

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is active but system seems "hung"

Causes:

Memory DIMM is partially dislodged from the slot on the mainboard.

Solutions:

1. Power Down
2. Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

Problem 3:

System does not boot from the hard disk drive but can be booted from the CD-ROM drive.

Causes:

1. Connector between hard drive and system board unplugged.
2. Damaged hard disk or disk controller.
3. Hard disk directory or FAT is corrupted.

Solutions:

1. Check the cable running from the disk to the disk controller board. Make sure both ends are securely attached. Check the drive type in the standard CMOS setup.
2. Contact technical support.
3. Backing up the hard drive is extremely important. Make sure your periodically perform backups to avoid untimely disk crashes.

Problem 4:

System only boots from the CD-ROM. The hard disk however can be read and applications can be used but booting from the hard disk is impossible.

Causes: Hard Disk boot sector has been corrupted.

Solutions: Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

Problem 5:

Error message reading “SECTOR NOT FOUND” displays and the system does not allow certain data to be accessed.

Causes: There are many reasons for this such as virus intrusion or disk failure.

Solutions: Back up any salvageable data. Then performs low level format, partition, and then a high level format the hard drive. Re-install all saved data when completed.

Problem 6:

Screen message says “Invalid Configuration” or “CMOS Failure.”

Causes: Incorrect information entered into the BIOS setup program.

Solutions: Review system’s equipment. Reconfigure the system.

Problem 7:

The Screen is blank.

Causes: No power to monitor.

Solutions: Check the power connectors to the monitor and to the system.

Problem 8:

Blank screen.

Causes:

1. Memory problem.
2. Computer virus.

Solutions:

1. Reboot computer. Reinstall memory. Make sure that all memory modules are securely installed.
2. Use anti-virus programs to detect and clean viruses.

Problem 9:

Screen goes blank periodically.

Causes: Screen saver is enabled.

Solutions: Disable screen saver.

Problem 10:

Keyboard failure.

Causes: Keyboard is disconnected.

Solutions: Reconnect keyboard. Replace keyboard if you continue to experience problems.

Problem 11:

No color on screen.

Causes:

1. Faulty Monitor.
2. CMOS incorrectly set up.

Solutions:

1. If possible, connect monitor to another system. If no color appears, replace monitor.
2. Call technical support.

Problem 12:

The screen displays “C: drive failure.”

Causes: Hard drive cable not connected properly.

Solutions: Check hard drive cable.

Problem 13:

Cannot boot the system after installing a second hard drive.

Causes:

1. Master/slave jumpers not set correctly.
2. Hard drives are not compatible / different manufacturers.

Solutions:

1. Set master/slave jumpers correctly.
2. Run SETUP program and select the correct drive types. Call drive manufacturers for possible compatibility problems with other drives.

Problem 14:

Missing operating system on hard drive.

Causes: CMOS setup has been changed.

Solutions: Run setup and select the correct drive type.

Problem 15:

Certain keys do not function.

Causes: Keys jammed or defective.

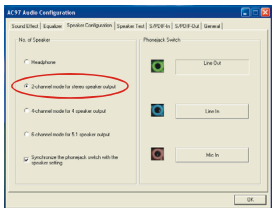
Solutions: Replace keyboard.

Appendix I: Super 5.1 Channel Audio Effect Setup

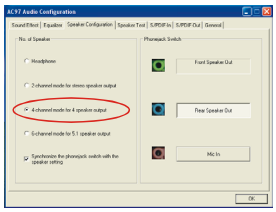
Channels Setup

1. After starting your system, click the Sound Effect Manager icon from the tool bar on the desktop. You can also find the icon by going to Start-> Setting -> Control Panel.
2. Click the Speaker Configuration button. One of the screens will display as shown below.
3. You can choose a 2, 4 or 6 channel (speaker) system.

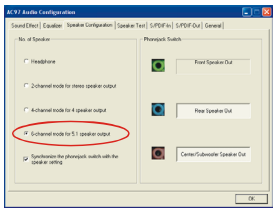
2 Channels



4 Channels



6 Channels



Super 5.1 Channel Audio Effect

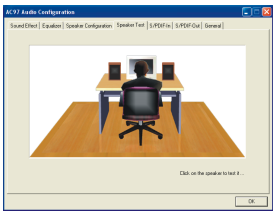
This mainboard comes with an ALC655 Codec which supports high quality 5.1 Channel audio effects. With ALC655, you can use the standard back panel audio ports for surround audio output. To use this function, you have to install the Realtek Audio Driver in the bonus Pack CD (see Software Installation section). You must also use audio applications supporting 5.1 Channel audio effects. See the audio Port Connectors in the Hardware Installation section for a description of the output connectors when Super 5.1 Channel Audio Effects are installed.

Speaker Test

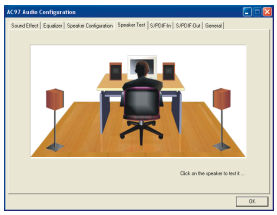
Make sure the cable is securely attached to the connector.

1. Click the Sound Effect Manager icon from the toolbar on the Windows desktop.
2. Click the Speaker Test button. A screen will display as shown below.
3. Select the speaker which you want to test by clicking on it.

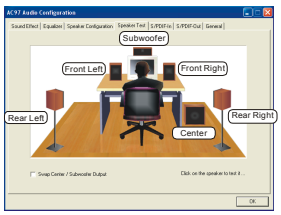
2 Channels



4 Channels



6 Channels



Appendix II: RAID Setup

Introduction to RAID

RAID (Redundant Array of Independent Disks) technology is a sophisticated disk management system that manages multiple disk drives. It enhances I/O performance and provides redundancy in order to prevent the loss of data in case of individual disk failure. The RAID facility on this board provides RAID 0, RAID 1, RAID 0+1 and RAID SPAN. The total number of drives you can apply depends on the number of connectors on your board. A board with 2 PATA connectors and 4 SATA connectors can connect up to 8 drives (4 PATA drives and 4 SATA drives). However one of the PATA drives may be used for the CD-ROM drive, in which case the maximum number of drives will be 5. The descriptions below are based on 2 PATA connectors and 4 SATA connectors.

Disk Striping (RAID 0)

Striping is a performance-oriented, non-redundant disk storage technology. With RAID striping, multiple disks are used to form a larger virtual disk. Data is then striped or mapped across all the physical disks. In this way, multiple I/O operations can be executed in parallel, enhancing performance. Striping does not provide fault tolerance. The minimum number of hard drives for RAID 0 is 2.

Disk Mirroring (RAID 1)

With Disk Mirroring there are redundant disks that mirror the primary disks. Data that is written to the primary disks are also written to the redundant disks. This redundancy provides fault tolerant protection from a single disk failure. If a read/write failure occurs on one drive, the system can still read and write data using the other drive. The minimum number of drives for a RAID 1 configuration is 2. You are required to use an even number of drives.

Disk Striped Mirroring (RAID 0+1)

This mode combines both the performance benefits of RAID 0 with the fault tolerance of RAID 1. The minimum number of drives for RAID 0+1 configuration is 4 drives. This configuration also requires an even number of drives. **Note:** All mirrored configurations or striped/mirrored configurations should use drives of the same size.

RAID SPAN

RAID SPAN allows JBOD (Just a Bunch Of Disks) configurations which simply uses multiple disks to form a larger virtual disk without any other specialized disk management functionality. RAID SPAN is not considered a standard RAID implementation.

Before Create RAID Array

Before you configure your RAID Array, you have to enable the “IDE RAID” option in the BIOS Setup Utility. (BIOS setup path: Integrated Peripherals>>IDE Function Setup>>IDE RAID>>Enable)

1. After you boot your system, press the “Del” key when prompted to enter the BIOS Setup Utility.
2. The “IDE RAID” option for enabling RAID will be found on the “Integrated Peripherals” screen as part of the “IDE Function Setup” section. Arrow down to the IDE RAID item and press enter.
3. On the “IDE RAID” screen, enable the disks that you want to use as RAID disks.

The following will take two SATA hard drives to configure as the RAID disks for an example.

NVIDIA RAID Utility Configuration

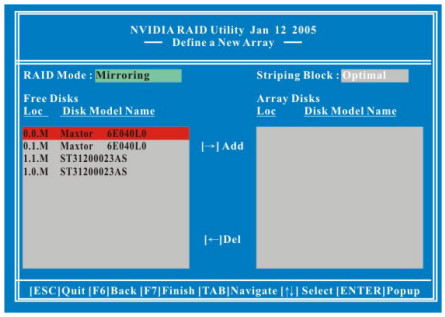
The NVIDIA RAID Utility is used to configure RAID disk management into your hard disks. This section will explain how to setup and maintain your RAID disk drives.

Starting up the NVIDIA BIOS RAID Utility

When the system boots up during the POST (Power-On Self Test), you will be given an opportunity to enter the NVIDIA BIOS RAID Utility when the screen prompts you with following message:

Press F10 to enter RAID setup utility.

Press the <F10> key to enter the NVIDIA BIOS RAID utility (note that you will only have a short window of time to press <F10> before the system continues with the next step of the boot process). The Raid Utility screen will display as shown right.



Associating Screen Drive Names with Physical Drives on the Board

This section explains how to associate the drives listed on the “Define a New Array” screen with the physical drives attached to the connectors on the mainboard. This becomes important when identifying drives that need to be replaced or changed.

Channel, Controller, Master/Slave

Located here are 3 identifiers separated by periods. These identifiers represent the Channel, Controller, and Master/Slave ID for a drive. With these identifiers, you can associate the drives on this screen with a physical connector and drive on the board.

Channel 0 – Represents one of the PATA connectors

Channel 1 – Represents one of the SATA connectors

Controller 0 – 1st connector (e.g. PATA1 or SATA1)

Controller 1 – 2nd connector (e.g. PATA2 or SATA2)

Master/Slave – SATA drives will always be Master drives since an SATA connector can only support 1 drive. PATA connectors can support a Master and a Slave drive.

Examples:

On a board with 4 connectors (PATA1, PATA2, SATA1, SATA2), the following applies:

0.0.M = PATA1 (master drive)

0.0.S = PATA1 (slave drive)

0.1.M = PATA2 (master drive)

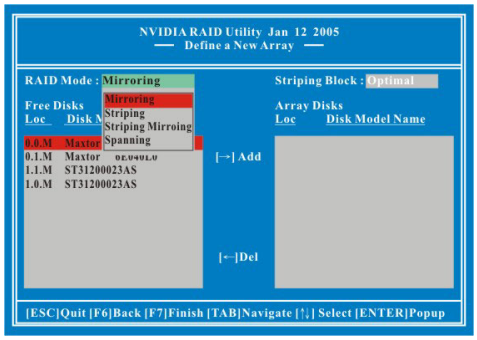
0.1.S = PATA2 (slave drive)

1.0.M = SATA1

1.1.M = SATA2

Creating New RAID Array

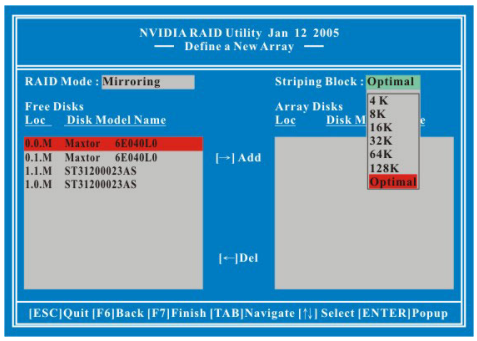
The first screen you will see upon initial configuration is the “Define New Array” screen. First, tab over to the “RAIDMode” text box and press <Enter>. The pop up menu will display as shown below. According to your configuration requirements, select “Mirroring” (RAID 1), “Striping” (RAID 0), “Striping Mirroring“ (RAID 0+1) or “Spanning” (JBOD). Then press <Enter>.



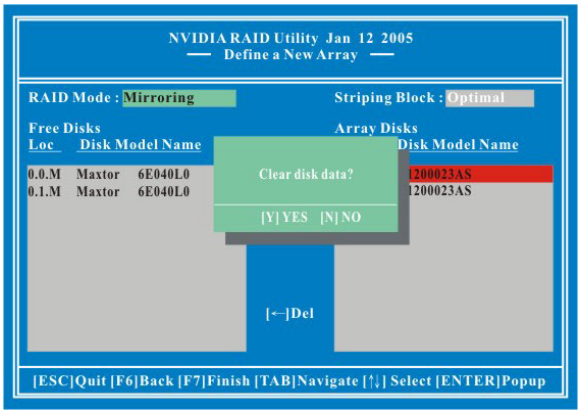
Attention

The “Loc” and “Disk Model Name”, located on this screen reflect the disk drives installed on the PATA or SATA connectors. The example disk drive information may differ with the information that displays on your screen.

Next, <Tab> over to the “Striping Block” option and press <Enter>. A pop menu will display as shown below. With this option you can manually select the striping block size for your array. This option will affect data access performance. We recommend that you to select “Optimal” option for automatic configuration. Press <Enter>.

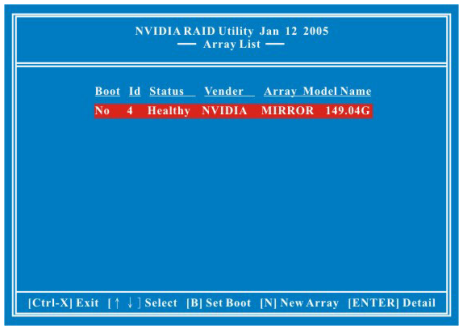


Next, in the “Free Disks” section, you can use the up/down arrow keys to select disks to be used in your RAID array. After highlighting a disk, use the right-arrow key to activate the disk as part of the RAID Array. The selected disk will move over to the “Array Disks” section. You can use the left-arrow key to reverse your selection. After you finish selecting all your disks, Press <F7>. A confirmation message will display as shown below. Then press <Y> to complete the RAID array creation.

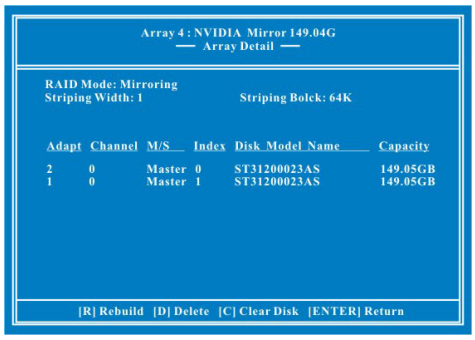


After the array has been successfully created, the Array List screen will display as shown below-left. You can press the Enter key to view the RAID details in the “Array Detail” screen.

RAID 1 mode (Array List)

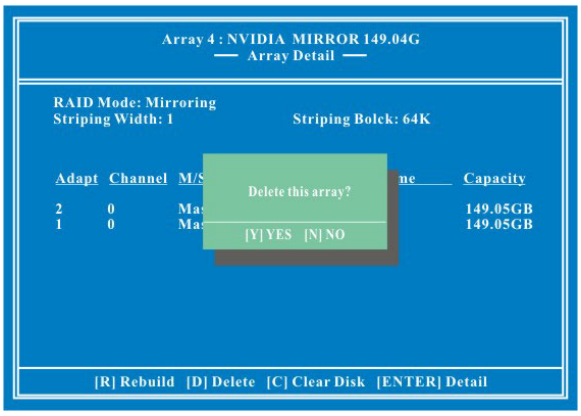


RAID 1 mode (Array Detail)

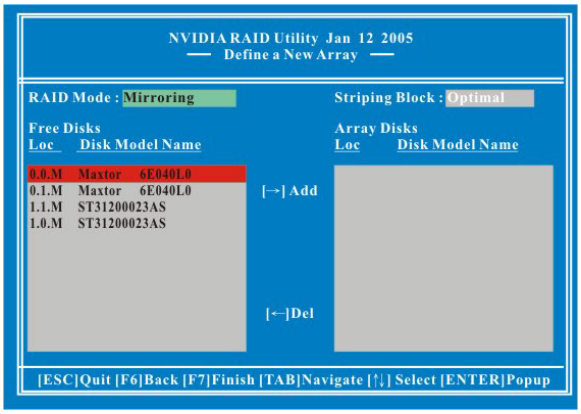


Deleting an Array

You can delete an existing array on the “Array Detail” screen. Press the <D> key. A warning/confirmation message will display (as shown below). Press <Y> to confirm.



After the array is successfully deleted, the screen will display as shown below.



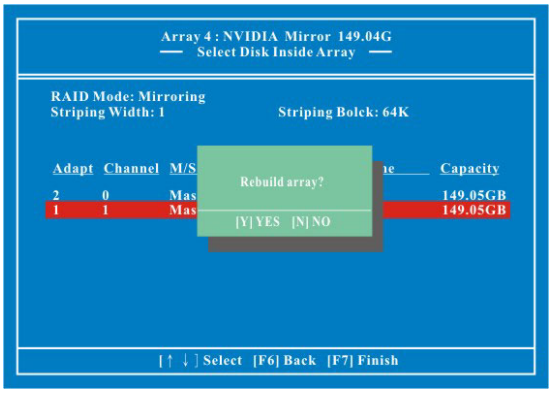
Rebuilding a RAID Mirrored Array

This section applies to Mirrored or Striped/Mirrored RAID configurations and describes how to reestablish the integrity of a mirrored environment after replacing one of the drives (typically because of a single disk failure). After replacing the errant drive, the rebuild process will move data from its mirrored sibling drive (the drive with information still intact) to the newly installed drive. This only applies to mirrored configurations (RAID 1 and RAID 0+1).

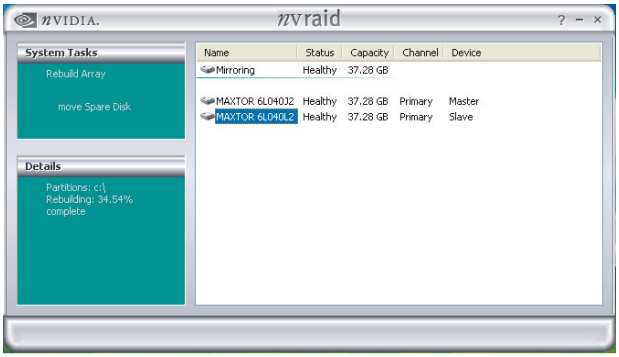
Before you rebuild a RAID Mirrored Array

Before you begin rebuilding a RAID Mirrored Array, you must copy the "NvRaidMan.exe" file from the bundled CD Driver to your C: drive. **[**CD File Location Path => D: \ Driver \ nForce \ 4.24 \ IDE \ WIN2K (or WINXP)\ NvRaidMan.exe**]**

To rebuild a mirrored array, bring up the NVIDIA RAID Utility. From the "Array List" screen, select the array with the newly installed drive. Then go to the "Array Detail" screen (press Enter). Then press the <R> key and use the up/down arrow keys to select the hard drive that you just installed. Then press <F7>. A confirmation message will display (as shown below). Press <Y> to confirm. Then press <Ctrl-X> to exit the "NVIDIA RAID Utility" setup.



Launch the NVRAID Management utility by double-clicking the NvRaidMan.exe that has been copied to the C: drive. You can view the status of rebuilding under the Details section from the screen as shown below.



Install the OS of Windows® 2000/XP into your RAID HDDs

In this section, it will tell you how to install the operating system of Windows® 2000/XP into your RAID drives. The installation steps below will assume that your HDDs have already been attached to either the PATA or SATA connectors, and also your BIOS RAID Utility has already been configured (see NVIDIA BIOS RAID Utility Configuration section).

Preparation: Before starting to install the OS, copy the "RAID Driver" and associated files from the bundle CD Driver to an empty floppy disk [The files location in CD-ROM => \ Driver \ nForce \ 6.53 \ IDE\ Floppy \ *.*]. This will have to be done on another system if you are installing the system from scratch.

1. During Windows installation, the "Windows Setup" screen will prompt you with "Press F6 if you need to install third party SCSI or RAID driver". Press <F6>.

2. Press 's' when setup asks if you want to specify an additional device. Insert the floppy disk which includes the "RAID Driver" into the floppy drive. Press 'Enter' and select the appropriate OS device driver.

3. Press 'Enter' again to continue the setup process.

4. Follow the setup instructions and select your choice for partition and file system.

5. After setup examines your disks, it will copy files to the Windows® 2000/ XP installation folders and restart the system. After the system is rebooted the setup program will continue with the installation all the way to completion.

6. Wait until Windows® 2000/ XP finishes installing devices, regional settings, networking settings, components, and the final set of tasks. Reboot the system if you are asked to do so.

Attention
The RAID array can only work with the OS of Windows® 2000/ XP.