AMD KM51G-754 Athlon 64 Sempron Processor

AMD KM51G-754 Athlon 64 Sempron Processor User Manual

Contents

AMD

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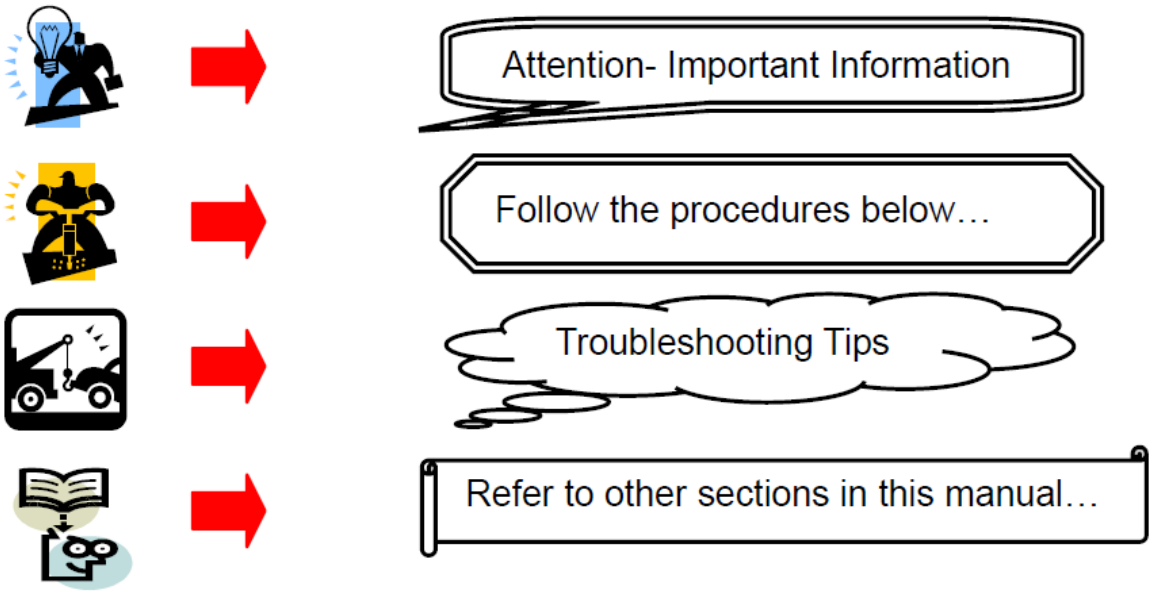
Things You Should Know

- 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

- KM51G-754 mainboard
- FDD Cable
- HDD Cable
- SATA Cable
- I/O Bracket
- SPDIF Cables (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:



Chapter 1. Getting Started

Introduction

Congratulations on the choosing the KM51G-754 Mainboard. It is based on the nVIDIA® GeForceTM 6100 (nForce4 C51G) Northbridge chipset and the nVIDIA® nForceTM 410 (nForce4 MCP51G) Southbridge chipset; with possessing integrated graphics feature. The mainboard supports the AMD AthlonTM 64/ SemproTM Processor with system bus 800 MHz (1600 MT/s).

The KM51G-754 provides two DIMM (Dual In-Line Memory Modules) sockets. It allows you to install 184-pin, non-ECC unbuffered, DDR400(PC3200)/DDR333(2700)/DDR266(PC2100) SDRAMs, and supports to install a total memory capacity of 2GB. This mainboard provide one PCI-E x16 slot and two PCI slots for use with a graphics card or expansion cards which the interfaces compatible. In addition, one PCI-E x1 slot is provided by the mainboard for use with an expansion card which the PCI-E x1 interface compatible.

The KM51G-754 provides one floppy disk drive connector that can be used with 360KB/720KB/ 1.2MB/1.44MB/2.88MB drives. It also has two IDE connectors for hard drives supporting PIO mode 0~4, Block mode, and Ultra DMA 66/100/133. In addition, the onboard Serial ATA II comes with two SATA II connectors, which the interface can provide up to 300 Mbps transmission speeds and also support RAID 0 and 1 mode (See Appendix II).

The onboard AC' 97 sound codec supports high quality 6-channel audio play (Super 5.1 Channel Audio Effect) (See Appendix I) and supports the Sony/Philips Digital Interfaces (SPDIF) functionality. This mainboard also comes with an onboard 10/100 Mbps Ethernet LAN chip. There is a LAN port on the case 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:

- Supports Socket 754
- Supports AMD AthlonTM 64/ SemproTM Processor
- Supports Hyper-TransportTM Link Technology
- Supports system bus 800 MHz (1600MT/s)

Chipset:

- Northbridge Chipset – nVIDIA® GeForceTM 6100 (nForce4 C51G)
- Southbridge Chipset – nVIDIA® nForceTM 410 (nForce4 MCP51G)
- I/O Controller – ITE® IT8712F
- AC' 97 Aduio Codec – Realtek® ALC655
- LAN Controller – Realtek® RTL8201BL/RTL8201CL

Memory:

- Two DIMM sockets, support a total memory capacity of 2GB
- Supports to use the 184-pin, non-ECC unbuffered, DDR400(PC3200)/DDR333 (PC2700)/DDR266(PC2100) SDRAMs

Slots:
Supports one PCI-E x16 slot, one PCI-E x1 slot, and two PCI slots

FDD Connector:

- One floppy disk drive connector, supports up to two FDDs
- Supports 360KB/720KB/1.2MB/1.44MB/2.88MB

IDE Connector:

- Two IDE connectors, support up to four IDE devices
- Supports Ultra ATA 66/100/133
- Supports high capacity hard disk drives

Serial ATA II Connector:

- Two SATA II connectors, support up to two SATA II HDDs
- Supports SATA 2.0 specification and provides 300 Mbps transmission speeds
- Supports RAID 0 and 1 mode

I/O facility Connectors:

- One PS/2 mouse port and one PS/2 keyboard port
- One printer port
- One COM port
- One VGA port (D-sub port)

USB Ports:

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

set

Onboard AC’ 97 Sound Codec:

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

Onboard LAN Chip:

- Supports 10/100 Mbps Ethernet LAN

BIOS:

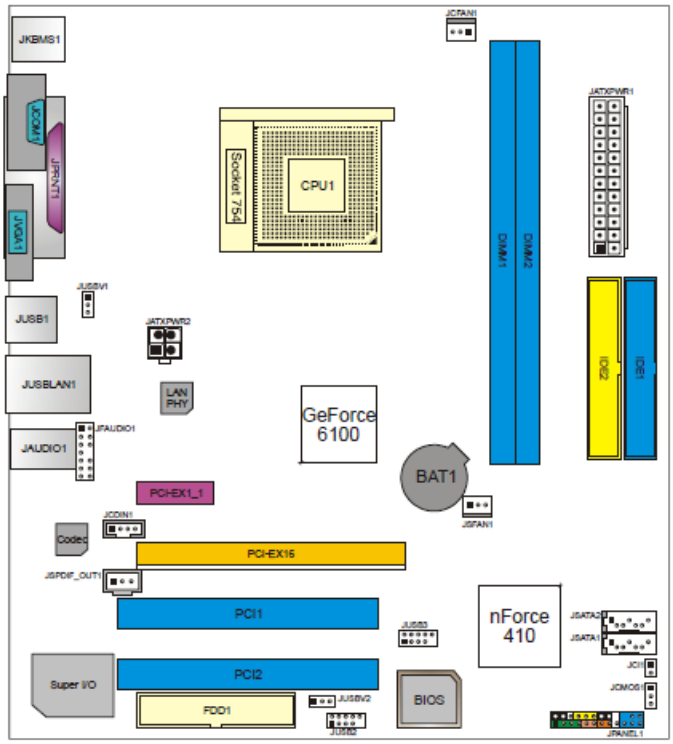
- Phoenix-Award™ BIOS
- Supports APM1.2
- Supports ACPI2.0 power management

Green Function:

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

Configuration

Layout of KM51G-754

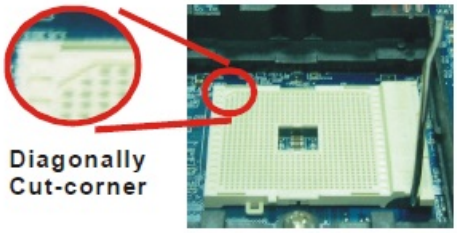


Hardware Installation
This section will assist you quickly in installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage your system components.

CPU Processor Installation
This mainboard supports AMD® Athlon TM 64/ Sempron TM processor using a Socket 754. Before building your system, we suggest you to visit the AMD website and review the processor installation procedures. (**http://www.amd.com**)

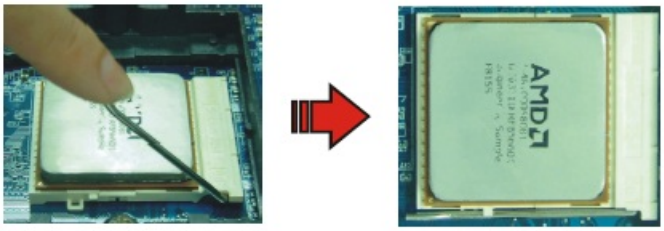
CPU Socket 754 Configuration Steps:

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.

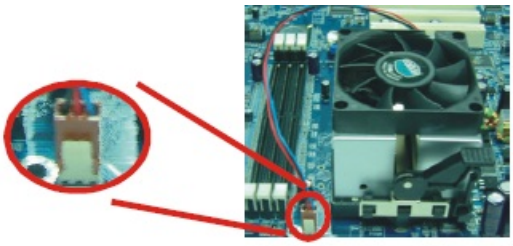


Gold triangle

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 is attached with a CPU cooling fan. The JSFAN1 header is attached with other cooling fans.

JCFAN1/ JSFAN1

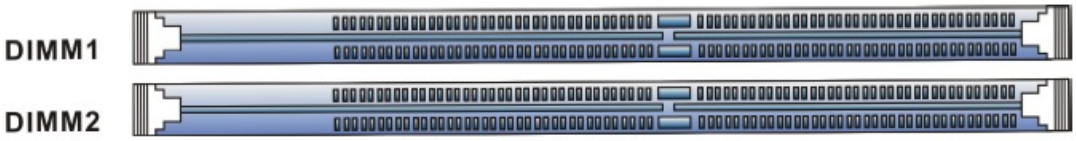
Pin	Assignment
1	Ground
2	Power (+12V)
3	FAN RPM rate sense

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 JCFAN1 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: DIMM1/2

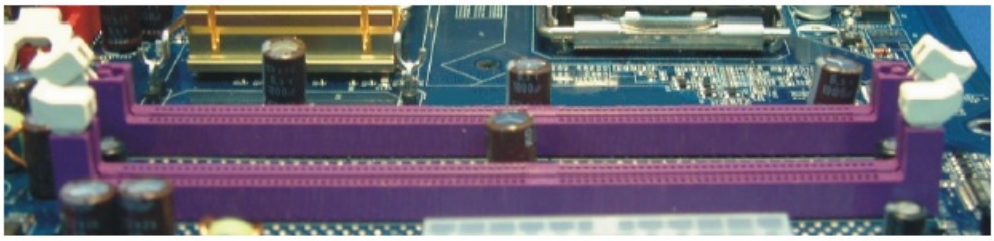
The KM51G-754 provides two DIMM (Dual In-Line Memory Modules) sockets. It allows you to install 184-pin, non-ECC unbuffered, DDR400(PC3200)/DDR333(2700)/DDR266(PC2100) SDRAMs, and supports to install a total memory capacity of 2GB.



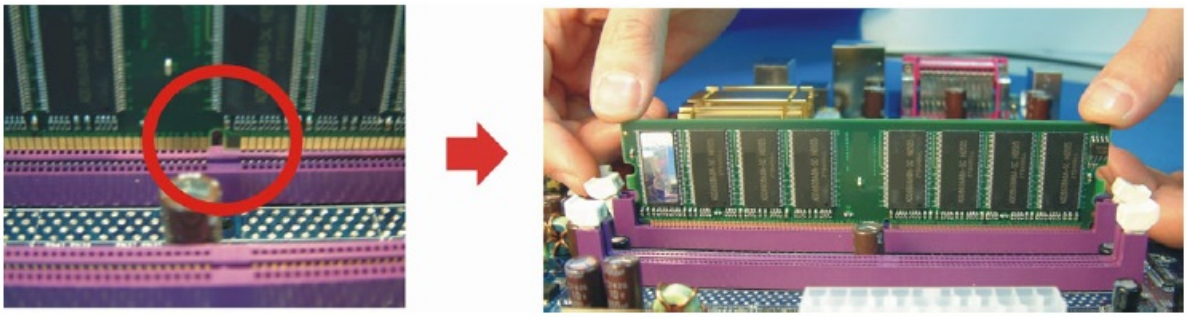
Memory Setup Steps:

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

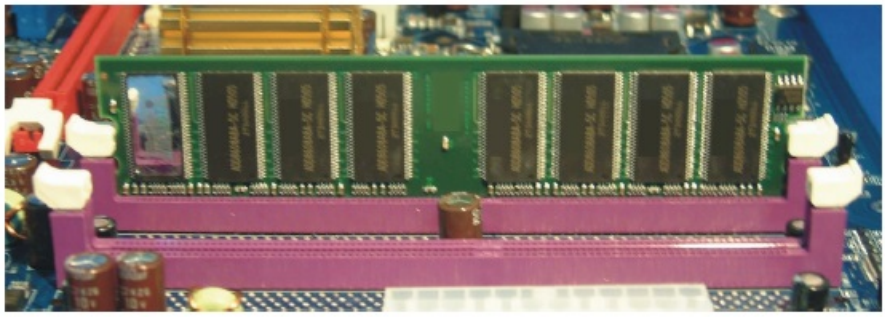
1. Pull the white plastic tabs at both ends of the socket away.



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



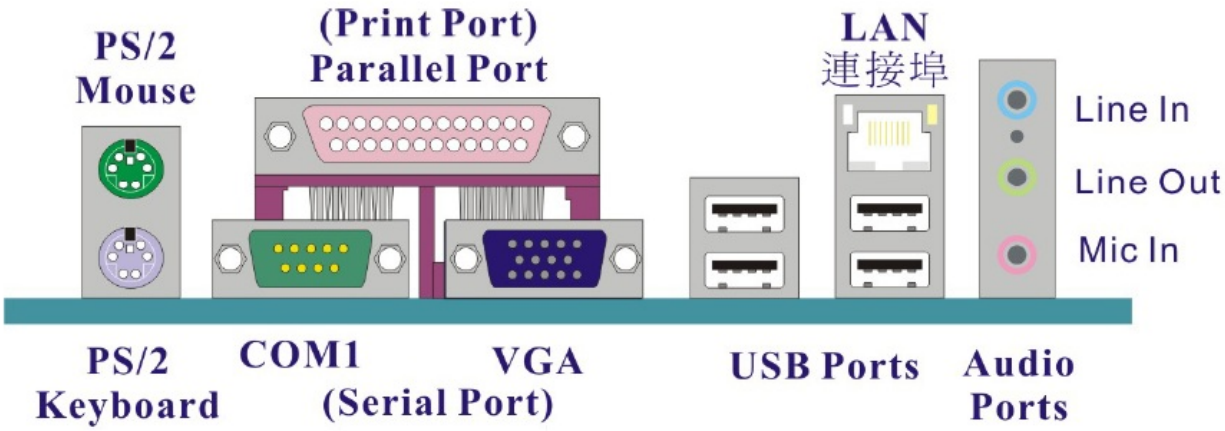
3. Lower the memory vertically into the socket and press firmly by using both thumbs until the memory snaps into place.



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 may vary depending on models.

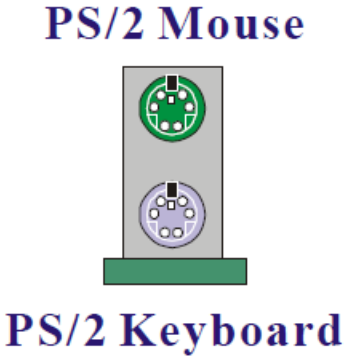
Back Panel Configuration



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

-



Serial and Parallel Interface Ports

The mainboard provides one serial port, one parallel port, and one VGA port on the back panel.

- **Parallel Interface Port: JPRINT1**

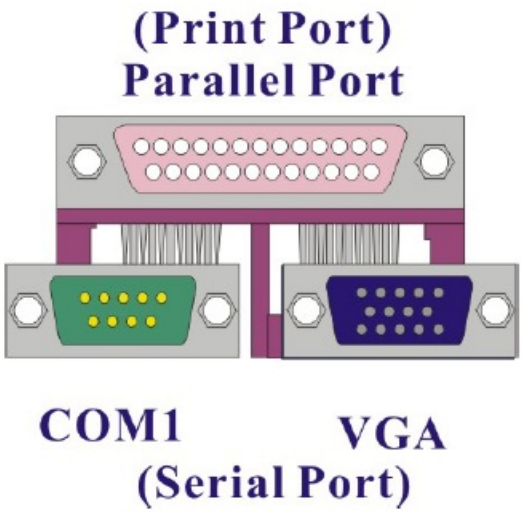
  The parallel port on your system is used to attach a parallel printer or other devices with this interface supported.

- **Serial Interface Port: JCOM1**

  This mainboard provides a serial port COM1 on the back panel, and is used to attach mice, modems and other peripheral devices.

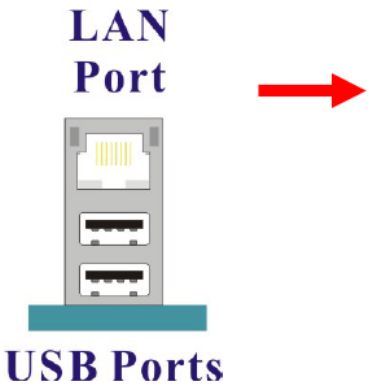
- **Serial Interface Port: JVGA1**

  This is a D-Sub 15-pin port and is used to attach your monitor cable for display.



USB & LAN Ports: JUSB1, JUSB/LAN1

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 available for you to attach an Internet 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-)

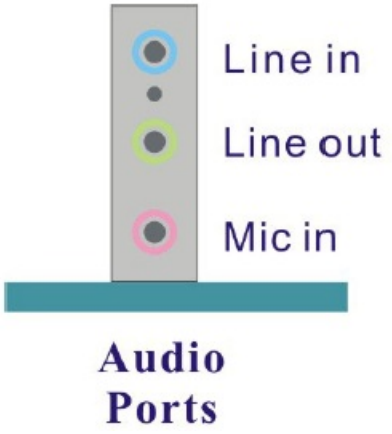
Pin	Assignment	Pin	Assignment
1/5	+5 V (fused)	3/7	USBP0+/P1+
2/6	USBP0-/P1-	4/8	Ground

Audio Ports: JAUDIO1

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

Line-In (Blue)

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

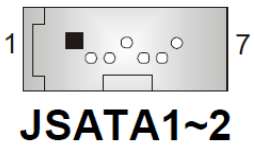


- **Line-Out (Green)**
  This port is an output audio port used for connecting to speakers or a headset. When the Super 5.1 Channel Audio Effect is enabled, this port will output audio for the front speakers.
- **Mic-In (Pink)**
  This port is for connecting to a microphone. When the Super 5.1 Channel 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 (FDC) that supports 360KB/ 720KB/1.2MB/1.44MB/2.88MB floppy disk drives using a FDD ribbon cable.
- **Hard disk drive Connectors:**
  The mainboard provides two IDE connectors that support Ultra ATA 66/100/133 IDE devices. You can attach a maximum of four IDE devices, such as hard disk drive (HDD), CD-ROM, DVD-ROM, etc. using IDE ribbon cables.
- **Primary IDE Connector: IDE1**
  In general, two IDE devices can be attached onto one 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 IDE HDDs, and remember to configure one drive as the Master and the other one as the Slave as well. In addition, it is recommended that attach the optical devices such as CD-ROM, DVD-ROM, etc. onto this IDE2 connector.
- **SATA II Connector: JSATA1/ JSATA2**
  The two SATA II connectors support 300 Mbps transmission speeds and RAID 0 and 1 mode. One SATA connector only can attach one SATA HDD of each time using SATA cables.

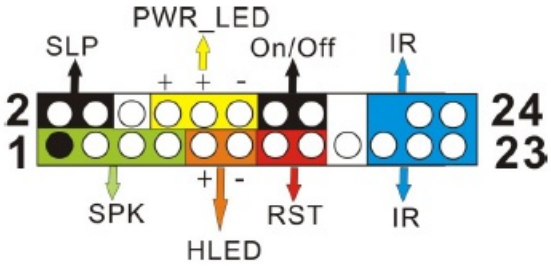


Pin	Assignment	Pin	Assignment
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground		

This mainboard supports RAID 0 and 1 mode, refer Appendix II for more information.

Attention
The FDD/IDE cable is designed and should be attached with a specific direction. One edge of the cable will usually in color such as red, to indicate that should line up with the header pin-1.

Front Panel Headers: 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): PWRLED**
  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 on to this header, then you can transfer the data through this function.

Headers & Jumpers

Front USB Header: JUSB2/JUSB3
This mainboard provides four onboard USB 1.1/2.0 ports (back panel) that attach to USB devices. There are two additional USB headers that can be connected by cables to four more USB ports on your case front panel giving you a possible 8 USB ports.

			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.

Case Open Warning Header: JCI1
This header is used to warn the user 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. To use this function, your computer case must

be equipped with a “case open” cable.

	Pin	Assignment
 JCI1	1	Case open signal
	2	Ground

USB Power Selection Header: JUSBV1/JUSBV2
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 JUS BV1/JUSBV2 header for +5V or +5VSB mode depending on which USB port that the USB device is attached to.

JUSBV1/JUSBV2	Assignment	Description
 Pin 1-2 Close	+5V	**JUSBV1:** +5V for JUSB1and JUSBLAN1. **JUSBV2:** +5V for JUSB2 and JUSB3.
 Pin 2-3 Close	+5V Standby Voltage	**JUSBV1:** JUSB1 and JUSBLAN1are powered with +5V standby voltage. **JUSBV2:** JUSB2 and JUSB3 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

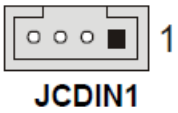
Note: Close stands for putting a jumper cap onto two header pins.

The following steps explain how to reset your CMOS configurations when you forget 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

CD-ROM Audio-In Connector: JCDIN1
The CD-IN connector is used to attach an audio cable to audio devices such as CD-ROMs, DVD-ROMs etc.

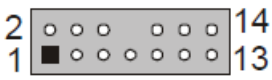


Pin	Assignment
1	Left channel input
2	Ground
3	Ground
4	Right channel input

SPDIF OUT Connector: JSPDIF_OUT1
S/PDIF is a recent audio transfer file format, which provides high quality audio using optical fiber and digital signals. This mainboard is capable to deliver audio output and receive audio input through this connector. One way you would use this connector is by using an SPDIF bracket (optional) and attaching its cord on to this JSPDIF_OUT1 connector. The RCA or TOS-Link connector will be on the bracket and convenient you to output or input data into the SPDIF devices.

Pin	Assignment
1	+5V
2	SPDIF out
3	Ground

Front Audio Connector: JFAUDIO1
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 (Note: pins 5&6, 9&10, 11&12, and 13&14) to avoid problems with the back panel audio ports.



JFAUDIO

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

Slots

- **PCI-Express x16 Slot: PCI-Ex16**

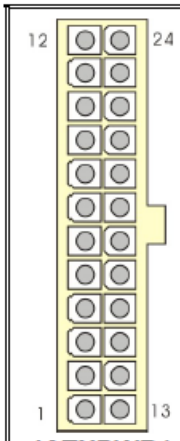
  This mainboard is able to install a graphics card which the PCI-Express x16 interface compatible in this PCI-Ex16 slot.
- **PCI-Express x1 Slot: PCI-Ex1_1**

  This mainboard is able to install an expansion card which the PCI-Express x1 interface compatible such as network card, SCSI card, etc. to this PCI-Ex1_1 slot.
- **PCI Slots: PCI1, PCI2**

  PCI stands for Peripheral Component Interconnect and is a bus standard for installing expansion cards such as network card, SCSI card, etc. to these PCI slots.

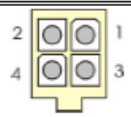
Power Supply Attachments

ATX Power Connector: JATXPWR1, JATXPWR2
This mainboard provides two ATX power connectors, a 24-pin JATXPWR1 connector and a 4-pin JATXPWR2 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	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	PW_ON	20	-5V
9	+5V standby voltage	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground



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 on to 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- AWARDTM 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 AMD based processors. This version of the PHOENIX-AWARDTM 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 hi gher 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 an d 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.
- **Frequency/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 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 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:

Problem 4:
System only boots from the CD-ROM. The hard disk 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. 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.

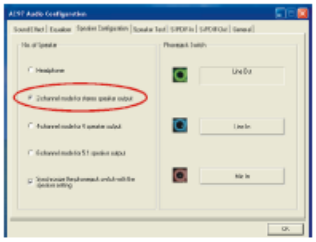
Problem 15:
Certain keys do not function. Causes: Keys jammed or defective. Solutions: Replace keyboard.

Appendix I: Super 5.1 Channel Audio Effect Setup

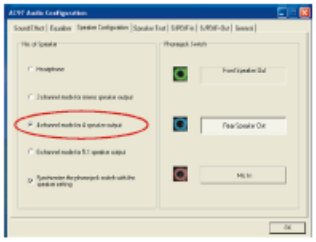
Channels Setup

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.

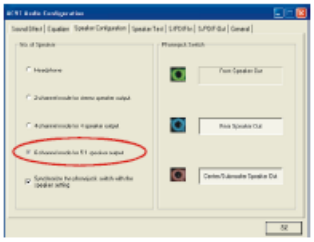
2 Channels



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 are able to use standard line-jacks for surround audio output without connecting to any auxiliary external modules. To use this function, you have to install the audio driver in the bonus Pack CD as well as an audio application supporting 5.1 Channel audio effects. See the audio Port Connectors in the Hardware Installation section for a description of the output connectors.

Speaker Test
Make sure the cable is firmly into the connector.

1. Click the audio icon from the Windows screen.
2. Click Speaker Test button, you can see the screen like the pictures below.
3. Select the speaker which you want to test by clicking on it.

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 mainboard provides RAID 0 and RAID 1.
- **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.

Before create RAID Array
Before you configure your RAID Array, you have to enable the “RAID Config” option in the BIOS Setup Utility.

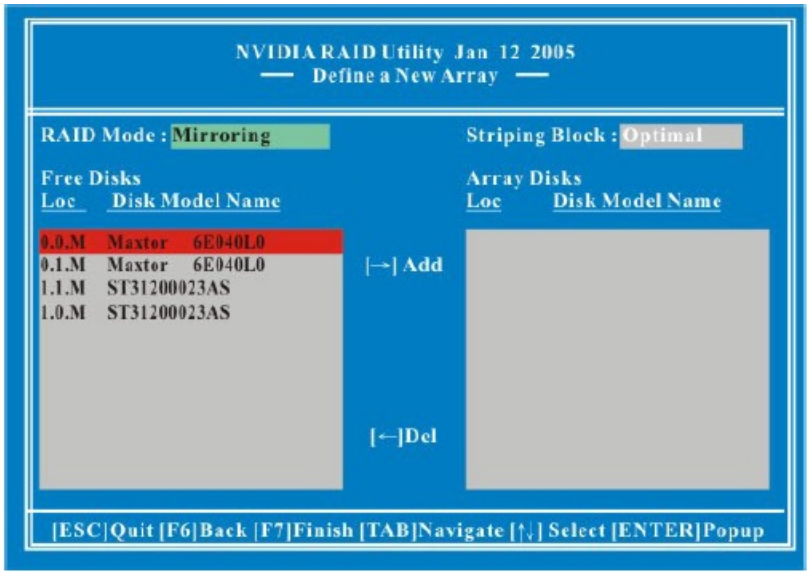
1. After you boot your system, press the “Del” key when prompted to enter the BIOS Setup Utility.
2. The “RAID config” option for enabling RAID will be found on the “Integrated Peripherals” screen. Arrow down to the RAID Enable item and choose the option of enable. (BIOS setting path: Integrated Peripherals >> RAID config >> RAID Enable>> Enable)
3. On the “RAID config” screen, enable the disks that you want to use as RAID disks. (The following instructions will explain how to configure two SATA hard drives as RAID disks.)

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.

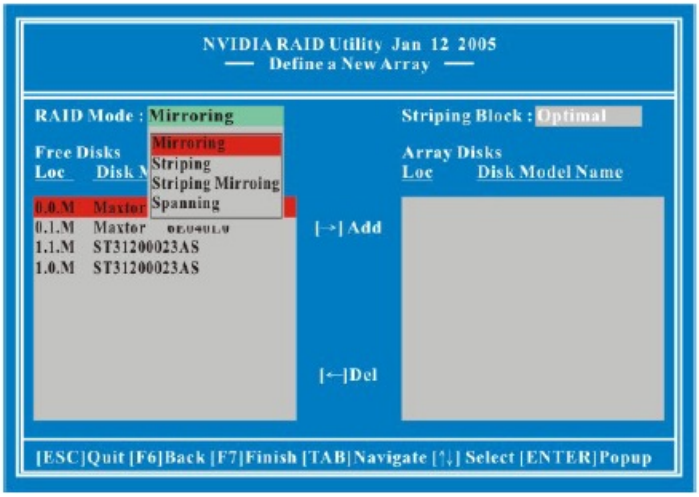
Channel, Controller, Master/Slave
Located here are 3 identifiers separated by periods. These identifiers represent the Channel, Controller, and Master/Slave ID for a drive. With these identifiers, you can associate the drives on this screen with a physical connector and drive on the board.

- 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:

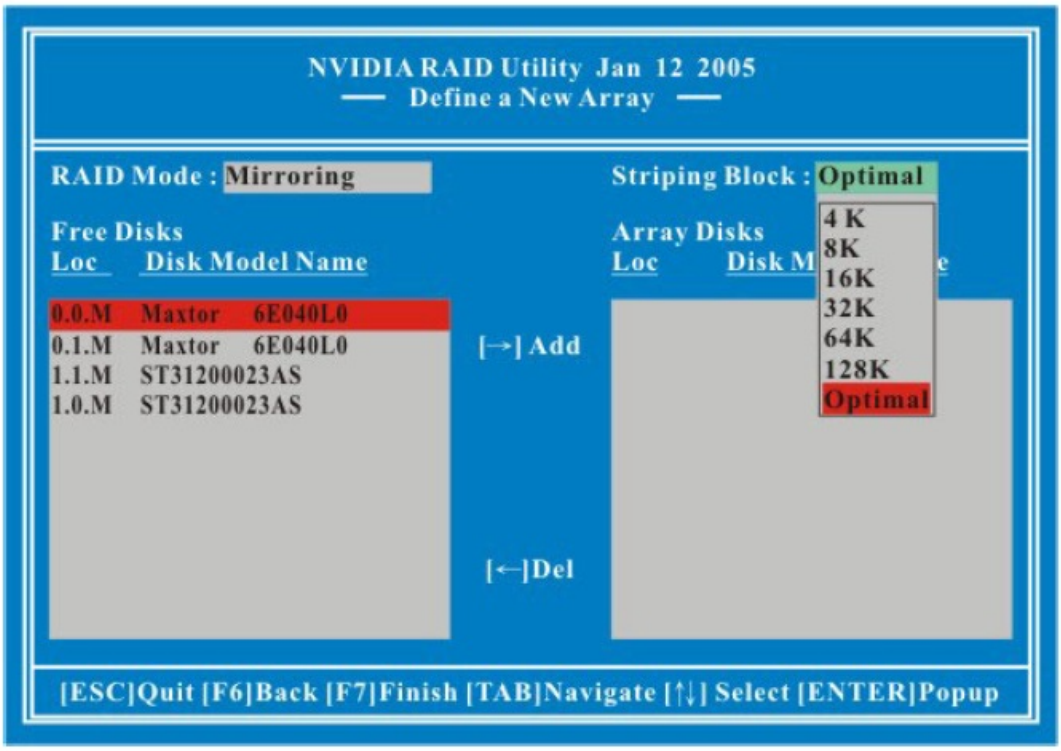
- On a board with 4 connectors (PATA1, PATA2, SATA1, SATA2), the following applies:
- 0.0.M = PATA1 (master drive)
- 0.0.S = PATA1 (slave drive)
- 0.1.M = PATA2 (master drive)
- 0.1.S = PATA2 (slave drive)
- 1.0.M = SATA1
- 1.1.M = SATA2

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 the RAID mode such as “Mirroring” (RAID 1), “Striping” (RAID 0), “Striping Mirroring“ (RAID 0+1), etc. of what you need. Then press <Enter>.

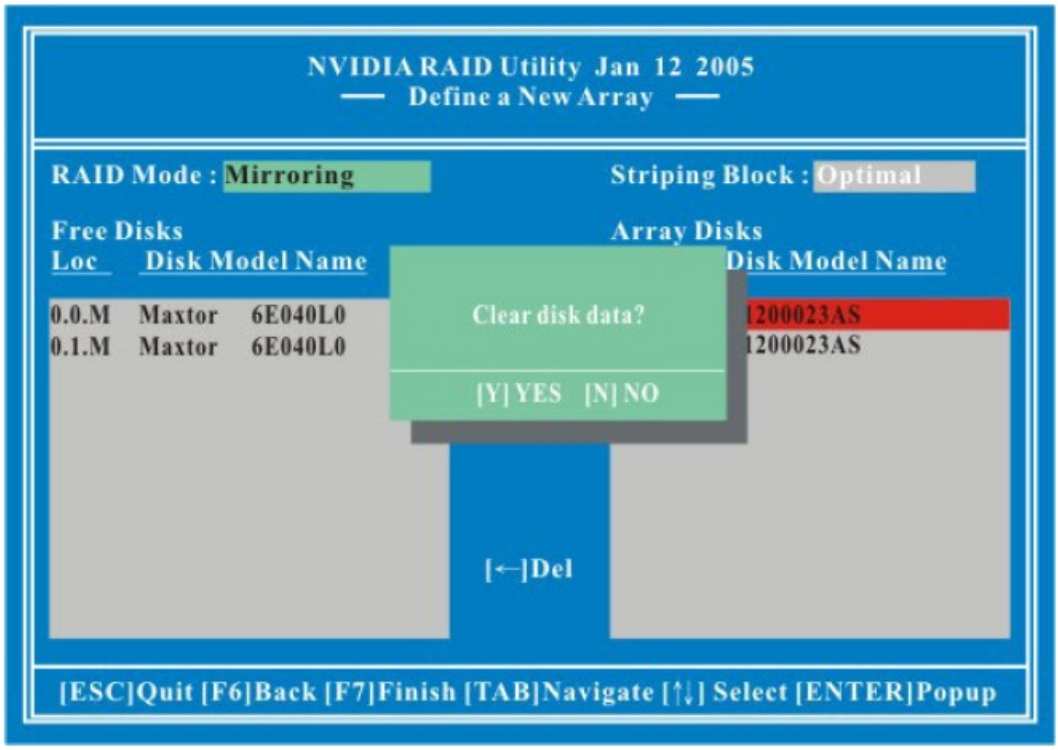


Attention
The “Loc” and “Disk Model Name”, located on this screen reflect the disk drives installed on the PATA or SATA connectors. The example disk drive information may differ with the information that displays on your screen.

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>.

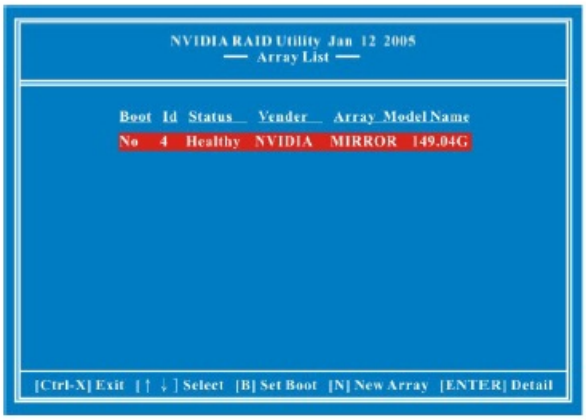


Next, in the “Free Disks” section, you can use the up/down arrow keys to select disks to be used in your RAID array. After highlighting a disk, use the right-arrow key to activate the disk as part of the RAID Array. The selected disk will move over to the “Array Disks” section. You can use the left-arrow 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.

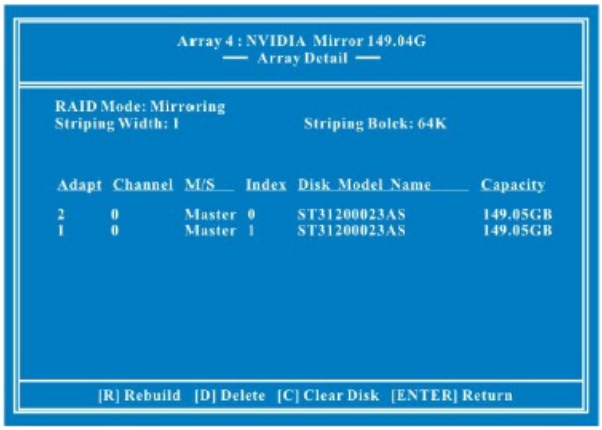


After the array has been successfully created, the Array List screen will display as shown below-left. You can press the Enter key to view the RAID details in the “Array Detail” screen.

RAID 1 mode (Array List)

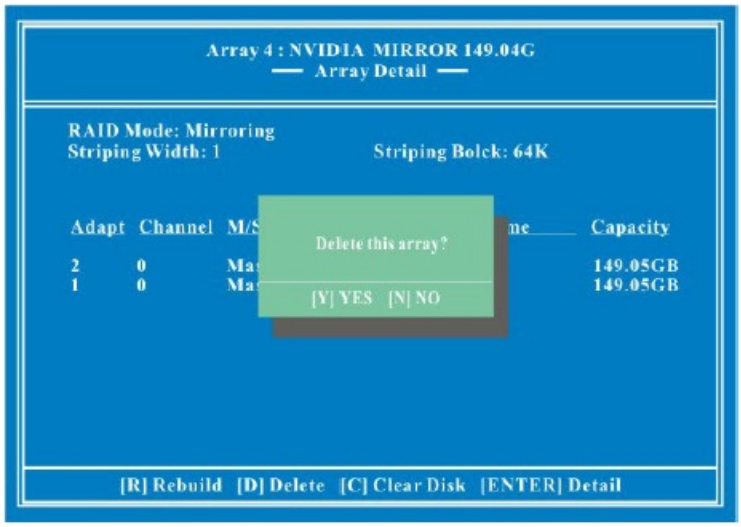


RAID 1 mode (Array Detail)

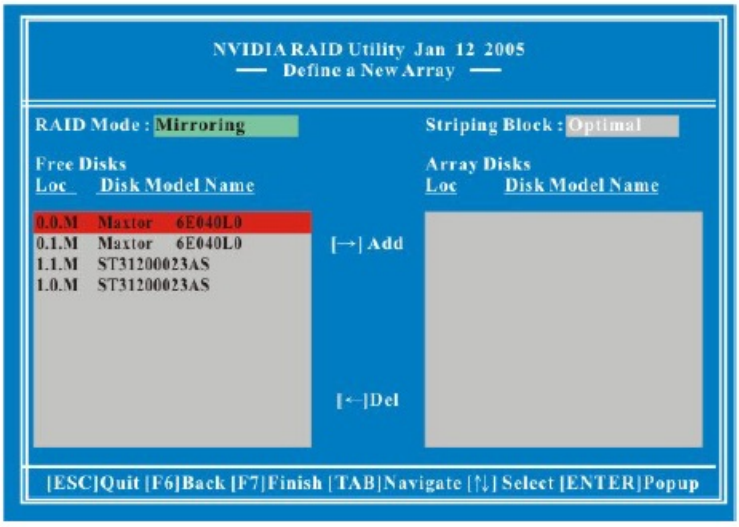


Deleting an Array

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.

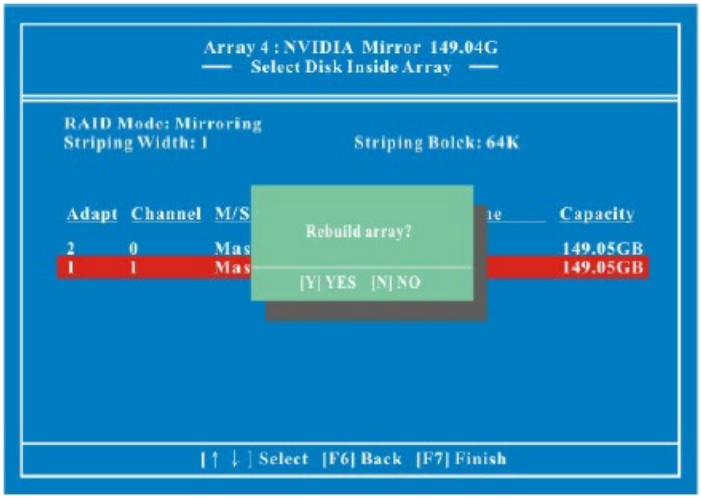


Rebuilding a RAID Mirrored Array

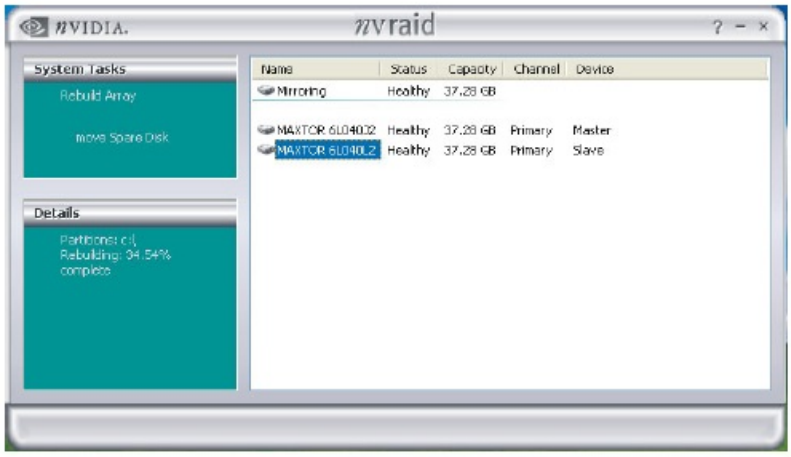
This section applies to Mirrored and Striped Mirroring RAID configurations and describes how to reestablish the integrity of a mirrored environment after replacing one of the drives (typically because of a single disk failure). After replacing the errant drive, the rebuild process will move data from its mirrored sibling drive (the drive with information still intact) to the newly installed drive. This only applies to mirrored configurations (RAID 1, 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 \ 6.53 \ 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.

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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.

- Dimensions (Micro-ATX Form-Factor):
- 244mm x 219mm (W x L)

Operating System:

- Windows® 2000/ XP

FAQs

- **Q: What CPUs are supported by the KM51G-754 mainboard?**
  A: The KM51G-754 mainboard supports AMD AthlonTM 64 and SemproTM Processors.
- **Q: What is the form-factor of the KM51G-754 mainboard?**
  A: The KM51G-754 mainboard has a Micro-ATX form-factor.

Documents / Resources

	**AMD KM51G-754 Athlon 64 Sempron Processor** [pdf] User Manual KM51G-754, KM51G-754 Athlon 64 Sempron Processor, KM51G-754, Athlon 64 Sempron Processor, 64 Sempron Processor, Sempron Processor, Processor

References

- **User Manual**