K8V-XE

User Guide

Motherboard

E2436

First Edition
February 2006

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Chapter 3: Software support

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

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

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

> The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.

- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.

- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.

- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.

- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.

- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.

- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.

- Place the product on a stable surface.

- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**

  This chapter describes the features of the motherboard and the new technology it supports. This chapter also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.

- **Chapter 2: BIOS setup**

  This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

- **Chapter 3: Software support**

  This chapter describes the contents of the support CD that comes with the motherboard package.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS websites**

   The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select
Italics	Used to emphasize a word or a phrase
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key
	Example: <Enter> means that you must press the Enter or Return key
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+)
	Example: <Ctrl>+<Alt>+<D>
Command	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets
	Example: At the DOS prompt, type the command line: **afudos /i[filename]** **afudos /iK8VXE.ROM**

K8V-XE specifications summary

CPU	Socket 754 for AMD Athlon™ 64 and AMD Sempron™ processors Supports AMD 64 architecture that enables simultaneous 32-bit and 64-bit computing Supports AMD Cool 'n' Quiet! Technology
Chipset	Northbridge: VIA K8T890 Southbridge: VIA VT8251
Front Side Bus	1GHz/800 MHz
Memory	Single-channel memory architecture 3 x 184-pin DIMM sockets support ECC/ non-ECC unbuffered 400/333/266 MHz DDR memory modules Supports up to 3 GB system memory
Expansion slots	1 x PCI Express x16 slot for discrete graphics card 2 x PCI Express x1 3 x PCI slots
Storage	VIA VT8251 SouthBridge supports: - 2 x Ultra DMA 133/100/66/33 - 4 x SATA-II 3Gb/s drivers - RAID 0, RAID 1, RAID 0+1, and JBOD configurations JMB 363 RAID controller supports: - 1 x SATA 3Gb/s driver - 1 x External SATA 3Gb/s driver - RAID 0, RAID 1, and JBOD configurations
Audio	Realtek® ALC660 6-channel CODEC Supports Jack-Sensing and Enumeration Technology S/PDIF out interface
LAN	Realtek® RTL8201CL-LF 10/100M LAN PHY
USB	Supports up to 8 USB 2.0 ports
Rear panel	1 x Parallel port 1 x External Serial ATAII port 1 x LAN (RJ-45) port 4 x USB 2.0/1.1 port 1 x Serial port (COM) 1 x PS/2 keyboard port 1 x PS/2 mouse port 1 x 6-channel audio I/O ports 1 x S/PDIF out port
BIOS Feature	4 Mb Flash ROM, AMI BIOS, PnP, DMI2.0, WfM2.0, SM BIOS 2.3, ASUS EZ Flash, ASUS CrashFree BIOS 2, ASUS MyLogo

(continued on the next page)

K8V-XE specifications summary

Overclocking features	CPU Multiplier SFS (Stepless Frequency Selection), from 200 MHz up to 300 MHz at 1MHz increment C.P.R.(CPU Parameter Recall) EZ Flash
Special features	ASUS CrashFree BIOS 2 ASUS MyLogo™ ASUS EZ Flash
Manageability	WOL by PME, WOR by PME, WOR by Ring
Internal connectors	2 x USB 2.0 connectors for 4 additional USB 2.0 ports 1 x CPU fan connector 1 x Chassis fan connectors 1 x S/PDIF Out connector 1 x 24-pin EPS 12V Power connector 1 x 4-pin ATX 12 V power connector 1 x CD Audio in connector 1 x Front panel audio connector 1 x System panel connector
Form Factor	ATX form factor: 12 in x 7.6 in (30.5 cm x 19 cm)
Support CD contents	Device drivers ASUS PC Probe II ASUS Live Update utility Anti-virus software
Accessory	User's Manual 1 x UltraDMA 133/100/66 cable 1 x FDD cable 1 x I/O shield 1 x SATA Cable Kit (SATA/Power)

*Specifications are subject to change without notice.

Chapter 1

This chapter describes the features of the motherboard. It includes brief descriptions of the motherboard components, and illustrations of the layout, jumper settings, and connectors.

Product introduction

1.1   Welcome!

Thank you for buying the ASUS® K8V-XE motherboard!

The motherboard delivers a host of new features and latest technologies making it another standout in the long line of ASUS quality motherboards!

The motherboard combines the powers of the AMD Athlon™ 64 / Sempron™ processor and the VIA K8T890 chipset to set a new benchmark for an effective desktop platform solution.

Supporting up to 3GB of system memory with high-resolution graphics via an PCI Express X16 slot, Serial ATA RAID, USB 2.0, and 6-channel audio features, the motherboard takes you ahead in the world of power computing!

Before you start installing the motherboard, and hardware devices on it, check the items in your package with the list below.

1.2   Package contents

Check your motherboard package for the following items.

- ✓   ASUS K8V-XE motherboard
- ✓   ASUS motherboard support CD
- ✓   1 x Ultra DMA 133/100/66 cable
- ✓   1 x Serial ATA cable kit (SATA / Power)
- ✓   1 x Floppy disk cable
- ✓   I/O shield
- ✓   User guide

If any of the above items is damaged or missing, contact your retailer.

1.3 Special features

1.3.1 Product Highlights

Latest processor technology

The motherboard supports the AMD Athlon™ 64 and AMD Sempron™ desktop processors. The AMD Athlon™ 64 is based on AMD's 64-bit architecture, which represents the landmark introduction of the industry's first x86-64 technology. This processor provides a dramatic leap forward in compatibility, performance, investment protection, and reduced total cost of ownership and development.

The AMD Sempron™ is a 32-bit processor that provides the performance needs of value-conscious buyers. This processor is designed to deliver best-in-class performance for everyday computing.

Cool 'n' Quiet!™ Technology

The motherboard supports the AMD® Cool 'n' Quiet!™ Technology that dynamically and automatically changes the CPU speed, voltage and amount of power depending on the task the CPU performs.

Serial ATA 3Gb/s technology

The motherboard supports the Serial ATA 3 Gb/s technology through the Serial ATA interfaces. The Serial ATA 3 Gb/s specification provides twice the bandwidth of the current Serial ATA products with a host of new features, including Native Command Queueing (NCQ), and Power Management (PM) Implementation Algorithm. Serial ATA allows for thinner, more flexible cables with lower pin count, reduced voltage requirement.

S/PDIF out

The motherboard supports the S/PDIF technology through the S/PDIF interfaces on the rear panel. The S/PDIF technology turns your computer into a high-end entertainment system with digital connectivity to powerful audio and speaker systems.

USB 2.0 technology

The motherboard implements the Universal Serial Bus 2.0 (USB 2.0) specification, dramatically increasing the connection speed from the 12 Mbps bandwidth on USB 1.1 to a fast 480 Mbps on USB 2.0. USB 2.0 is backward compatible with USB 1.1.

6-Channel Audio solution

The motherboard uses an onboard audio CODEC that lets you enjoy high-quality 6-channel audio without having to buy advanced sound cards.

1.3.2 Innovative ASUS features

CrashFree BIOS 2

This feature allows you to restore the original BIOS data from the ASUS support CD in case when the BIOS codes and data are corrupted. This protection eliminates the need to buy a replacement ROM chip. See page 2-6.

C.P.R. (CPU Parameter Recall)

The C.P.R. feature of the motherboard BIOS allows automatic re-setting to the BIOS default settings in case the system hangs due to overclocking. When the system hangs due to overclocking, C.P.R. eliminates the need to open the system chassis and clear the RTC data. Simply shut down and reboot the system, and BIOS automatically restores the CPU previous setting for each parameter.

ASUS MyLogo™

This feature allows you to personalize and add style to your system with customizable boot logos. See pages 2-33.

ASUS EZ Flash BIOS

With the ASUS EZ Flash, you can easily update the system BIOS even before loading the operating system. No need to use a DOS-based utility or boot from a floppy disk. See page 2-8.

1.4   Before you proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component.

2. Use a grounded wrist strap or touch a safely grounded object or to a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.

3. Hold components by the edges to avoid touching the ICs on them.

4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

5. Before you install or remove any component, ensure that the ATX   power supply is switched off or the power cord is detached from the   power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

Onboard LED

The motherboard comes with a stand-by power LED. When lit, this green LED indicates that the system is ON, in sleep mode, or in soft-off mode, a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.

SB_PWR

ON
Standby
Power

OFF
Powered
Off

K8V-XE Onboard LED
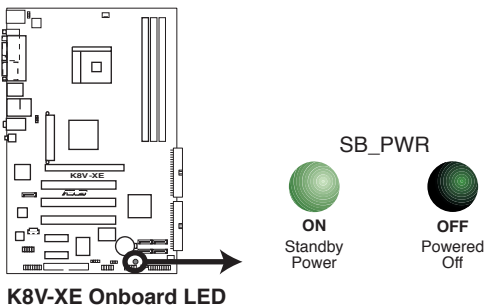
1.5 Motherboard overview

1.5.1 Motherboard layout
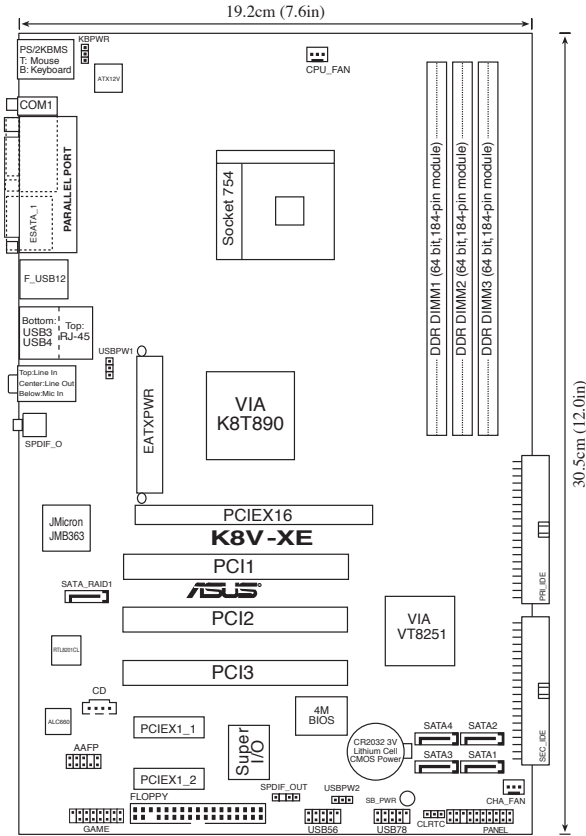
1.5.2   Placement direction

When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

1.5.3   Screw holes

Place six (6) screws into the holes indicated by circles to secure the motherboard to the chassis.

Do not overtighten the screws! Doing so may damage the motherboard.

Place this side towards the rear of the chassis
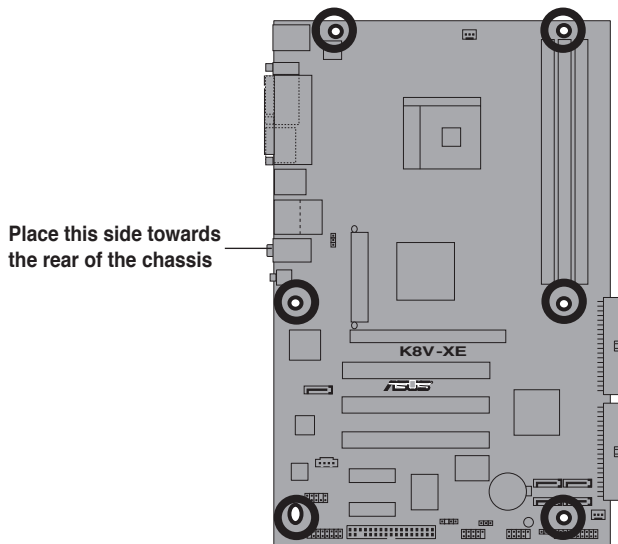
1.6 Central Processing Unit (CPU)

1.6.1 Overview

The motherboard comes with a surface mount 754-pin Zero Insertion Force (ZIF) socket designed for the AMD Athlon™ 64 processor.

The 128-bit-wide data paths of these processors can run applications faster than processors with only 32-bit or 64-bit wide data paths.

K8V-XE CPU Socket 754   Gold Arrow
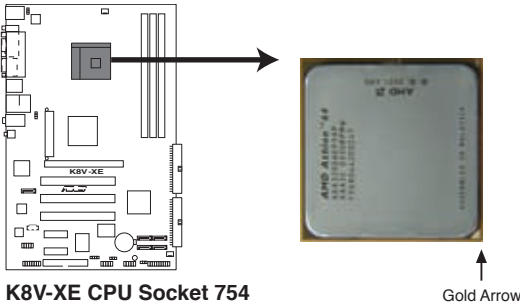
> Incorrect installation of the CPU into the socket may bend the pins and severely damage the CPU!

1.6.2 Installing the CPU

Follow these steps to install a CPU.

1. Locate the 754-pin ZIF socket on the motherboard.

2. Unlock the socket by pressing the lever sideways, then lift it up to a 90°-100° angle.
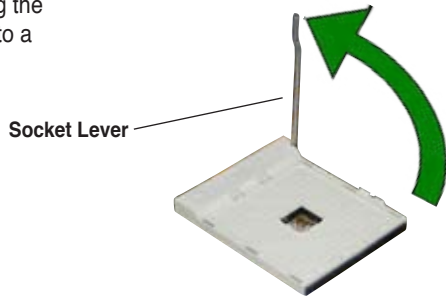
Socket Lever

Make sure that the socket lever is lifted up to 90°-100° angle, otherwise the CPU does not fit in completely.

3. Position the CPU above the socket such that the CPU corner with the gold triangle matches the socket corner with a small triangle.

4. Carefully insert the CPU into the socket until it fits in place.

Gold triangle

Small triangle
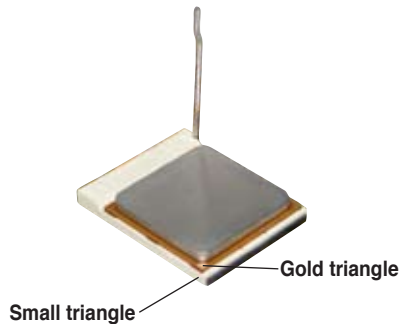
The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins and damaging the CPU!

5. When the CPU is in place, push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.

6. Install specifically designed heatsink and fan assembly.
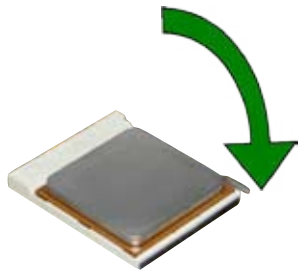
1.7   System memory

1.7.1   DIMM sockets location

The following figure illustrates the location of the DDR DIMM sockets.
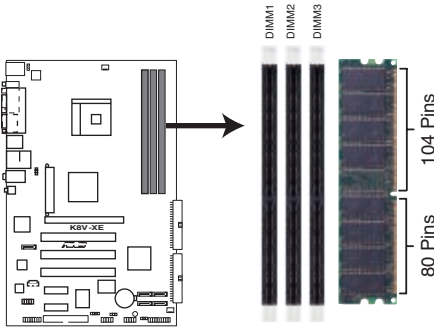
K8V-XE 184-pin DDR DIMM Sockets

1.7.2   Memory configurations

You may install 64MB, 128MB, 256MB, 512MB, and 1GB DDR DIMMs into the DIMM sockets using the memory configurations in this section.

Important notes

- Installing DDR DIMMs other than the recommended configurations may cause memory sizing error or system boot failure.
- For optimum compatibility, obtain memory modules from qualified vendors. See Qualified Vendors List on page 1-11.
- Stacked RAM and DDR DIMM modules with more than 18 chips are not supported.
- Always install DIMMs with the same CAS Latency. For optimum compatibility, obtain memory modules from the same vendor.
- Due to hardware limitation, the memory frequency decreases from 400MHz to 333MHz when the three DIMMs are populated at the same time. Refer to the table on 1-11 for DIMM slots setup and corresponding frequency.

Memory Frequency

Sockets			
DIMM1	DIMM2	DIMM3	Frequency
populated	--	--	400MHz
populated	populated	--	400MHz
--	populated	--	400MHz
--	--	populated	400MHz
--	populated	populated	400MHz
populated	--	populated	400MHz
populated	populated	populated	333MHz

DDR Qualified Vendor List

The following table lists the PC3200 (DDR400) memory modules that have been tested and qualified for use with this motherboard.

DDR400 Qualified Vendor List (QVL)

Size	Vendor	Mode	CL	Brand	Side(s)	Component	DIMM support A	B	C
256MB	KINGSTON	V58C2256804SAT5(ECC)	N/A	N/A	SS	KVR400X72C3A/256		V	
512MB	KINGSTON	V58C2256804SAT5(ECC)	N/A	N/A	DS	KVR400X72C3A/512	V	V	
512MB	KINGSTON	Heat-Sink Package	N/A	N/A	DS	KHX3200A/512		V	V
1024MB	KINGSTON	Heat-Sink Package	N/A	N/A	DS	KHX3200ULK2/1G	V	V	
256MB	KINGSTON	D3208DL3T-5A	N/A	N/A	SS	KVR400X64C3A/256	V	V	
256MB	KINGSTON	A2S56D30BTP	N/A	N/A	SS	KVR400X64C3A/256		V	
512MB	KINGSTON	V58C2256804SAT5	N/A	N/A	DS	KVR400X64C3A/512	V		V
512MB	KINGSTON	HY5DU12822BT-D43	N/A	N/A	DS	KVR400X64C3A/512	V	V	V
1024MB	KINGSTON	HYB25D512800BE-5B	N/A	N/A	DS	KVR400X64C3A/1G	V	V	V
256MB	SAMSUNG	K4H560838F-TCCC	N/A	SAMSUNG	SS	M368L3223FTN-CCC		V	
512MB	SAMSUNG	K4H560838F-TCCC	N/A	SAMSUNG	DS	M368L6423FTN-CCC	V	V	V
256MB	Infineon	HYB25D256800CE-5C	3	Infineon	SS	HYS64D32300HU-5-C	V	V	
512MB	Infineon	HYB25D256800CE-5C	N/A	Infineon	SS	HYS64D64320HU-5-C	V	V	
256MB	Infineon	HYB25D512160CE-5C	3	Infineon	SS	HYS64D32301HU-5-C	V	V	
512MB	Infineon	HYB25D512800CE-5C	3	Infineon	SS	HYS64D64300HU-5-C	V	V	V
1024MB	Infineon	HYB25D512800CE-5B	3	Infineon	DS	HYS64D128320HU-5-C	V	V	
256MB	CORSAIR	W942508BH-5	N/A	N/A	SS	CMX256A-3200C2PT	V	V	V
512MB	CORSAIR	Heat-Sink Package	N/A	N/A	DS	CMX512-3200C2	V	V	V
512MB	CORSAIR	VS32M8-5	N/A	N/A	DS	VS512MB400	V	V	V
512MB	CORSAIR	Heat-Sink Package	N/A	N/A	DS	CMXP512-3200XL	V	V	
1024MB	CORSAIR	Heat-Sink Package	N/A	N/A	DS	TWINX2048-3200C2	V	V	
256MB	Hynix	HY5DU56822DT-D43	N/A	N/A	SS	HYMD232646D8J-D43	V	V	
512MB	Hynix	HY5DU56822DT-D43	N/A	N/A	DS	HYMD264646D8J-D43	V	V	V
256MB	Transcend	K4H560838F-TCCC	3	SAMSUNG	SS	TS32MLD64V4F3	V	V	
512MB	Transcend	K4H560838F-TCCC	3	SAMSUNG	DS	TS64MLD64V4F3	V	V	V
1024MB	Transcend	K4H510838B-TCCC	3	SAMSUNG	DS	TS128MLD64V4J		V	V
512MB	A DATA	K4H560838F-TCCC	3	SAMSUNG	DS	MDOSS6F3H41Y0N1E0Z	V	V	V
256MB	A DATA	HY5DU56822CT-D43	3	Hynix	SS	MDOHY6F3G31Y0N1E0Z		V	
512MB	A DATA	HY5DU56822CT-D43	3	Hynix	DS	MDOHY6F3H41Y0N1E0Z	V	V	
512MB	A DATA	ADD8608A8A-5B	2.5	N/A	DS	MDOAD5F3H41Y0D1E02	V	V	
256MB	KINGMAX	KDL388P4LA-50	N/A	N/A	SS	MPXB62D-38KT3R	V		
512MB	KINGMAX	KDL388P4LA-50	N/A	N/A	DS	MPXC22D-38KT3R	V	V	
256MB	crucial	Heat-Sink Package	2	Ballistix	SS	BL3264Z402.8TG	V		V
512MB	crucial	Heat-Sink Package	2	Ballistix	DS	BL6464Z402.16TG		V	V
256MB	TwinMOS	TMD7608F8E50D	2.5	TwinMOS	SS	M2G9I08AIATT9F081AADT	V	V	
512MB	TwinMOS	TMD7608F8E50D	2.5	TwinMOS	DS	M2G9J16AJATT9F081AADT	V	V	
256MB	TwinMOS	TMD7608F8E50D	2.5	TwinMOS	SS	M2G9I08A8ATT9F081AADT		V	
512MB	TwinMOS	TMD7608F8E50D	2.5	TwinMOS	DS	M2G9J16A8ATT9F081AADT	V	V	
512MB	TwinMOS	TMD7608F8E50I	N/A	TwinMOS	DS	M2G9J16A8ATT9F081CADT	V	V	
256MB	V-DATA	VDD9616A8A-5C	N/A	N/A	SS	MDYVD6F4G2880B1E0H	V	V	V
256MB	Winbond	W942508CH-5	3	Winbond	SS	W9425GCDB-5	V	V	
512MB	Winbond	W942508CH-5	N/A	Winbond	DS	W9451GCDB-5	V	V	
512MB	GEIL	GL3LC32G88TG-35	N/A	N/A	DS	GL1GB3200DC		V	V
256MB	GEIL	GL3LC32G88TG-5A	N/A	N/A	SS	GLX2563200UP	V	V	
256MB	PSC	A2S56D30BTP	2.5	PSC	SS	AL5D8B53T-5B1K	V	V	
512MB	PSC	A2S56D30BTP	2.5	PSC	DS	AL6D8B53T-5B1K	V	V	
256MB	NANYA	NT5DS32M8CT-5T	N/A	N/A	SS	NT256D64S88C0G-5T			V
512MB	NANYA	NT5DS32M8CT-5T	N/A	N/A	DS	NT512D64S8HC0G-5T	V	V	
256MB	NANYA	NT5DS32M16BT-5T	N/A	N/A	SS	NT256D64SH4B0G-5T	V	V	
512MB	NANYA	NT5DS64M8BT-5T	N/A	N/A	SS	NT512D64S88B0G-5T	V	V	V
1024MB	NANYA	NT5DS64M8BT-5T	N/A	N/A	DS	NT1GD64S8HB0G-5T	V	V	V
512MB	NANYA	NT5DS64M8CS-5T	N/A	N/A	SS	NT512D64S88C0GY-5T	V	V	
1024MB	NANYA	NT5DS64M8CS-5T	N/A	N/A	DS	NT1GD64S8HC0GY-5T	V	V	
256MB	Novax	C2S56D30TP-5	2.5	CEON	SS	96M425653CE-40TB6	V	V	
512MB	Novax	C2S56D30TP-5	2.5	CEON	DS	96M451253CE-40TB6	V	V	

(Continued on the next page)

DDR400 Qualified Vendor List (QVL)

Size	Vendor	Mode	CL	Brand	Side(s)	Component	DIMM support A	B	C
512MB	CENTURY	K4H560838E-TCCC	N/A	N/A	DS	DXV2S8SSCCE3K27E	V	V	
512MB	CENTURY	DD2508AMTA	N/A	N/A	DS	DXV2S8EL5BM3T27C	V	V	V
256MB	CENTURY	DD2508AMTA	N/A	N/A	SS	DXV6S8EL5B	V	V	
256MB	CENTURY	HY5DU56822BT-D43	N/A	N/A	SS	DXV6S8HXD43B	V	V	V
256MB	CENTURY	HY5DU56822DT-D43	N/A	N/A	SS	DXV6S8HXD43D	V	V	
512MB	CENTURY	DD2508AMTA	N/A	N/A	DS	DXV2S8EL5B	V	V	V
512MB	CENTURY	HY5DU56822BT-D43	N/A	N/A	DS	DXV2S8HXD43B	V	V	V
512MB	CENTURY	HY5DU56822DT-D43	N/A	N/A	DS	DXV2S8HXD43D	V	V	V
256MB	CENTURY	DD2508AKTA-5B-E	N/A	N/A	SS	DXV6S8EL5B/HP	V	V	V
512MB	CENTURY	DD2508AKTA-5B-E	N/A	N/A	DS	DXV2S8EL5B/HP	V	V	V
256MB	CENTURY	MT46V32M8TG-5BG	N/A	N/A	SS	DXV6S8MC5B	V	V	
512MB	CENTURY	MT46V32M8TG-5BG	N/A	N/A	DS	DXV2S8MC5B		V	V
512MB	CENTURY	HY5DU12822CTP-D43	N/A	N/A	SS	DXV2H8	V	V	V
1024MB	CENTURY	HY5DU12822CTP-D43	N/A	N/A	DS	DXV0H8	V	V	V
256MB	Elixir	N2DS25680CT-5T	N/A	N/A	SS	M2U25664DS88C3G-5T	V	V	
512MB	Elixir	N2DS25680CT-5T	N/A	N/A	DS	M2U51264DS8HC3G-5T			V
512MB	Elixir	N2DS51280BT-5T	N/A	N/A	SS	M2U51264DS88B1G-5T	V	V	
1024MB	Elixir	N2DS51280BT-5T	N/A	N/A	DS	M2U1G64DS8HB1G-5T	V		V
512MB	Kreton	VT3225804T-5	N/A	VT	DS	N/A	V		V
512MB	Veritech	VT56DD32M8PC-5	3	VM	DS	VU512FLTM25C	V	V	V
256MB	Pmi	V58C2256804SAT5B	2.5	MOSEL	SS	MD44256VIT3208GMHA01	V	V	
512MB	Pmi	V58C2256804SAT5B	2.5	MOSEL	DS	MD44512VIT3208GATA03	V	V	
256MB	ProMOS	V58C2256804SCT5B	2.5	N/A	SS	V826632K24SCTG-D0	V	V	
512MB	ProMOS	V58C2256804SCT5B	2.5	N/A	DS	V826664K24SCTG-D0	V		V
512MB	Deutron	A2S56D30CTP	2.5	PSC	DS	AL6D8C53T-5B1T	V		
256MB	Aeneon	AED83T500	3	Aeneon	SS	AED560UD00-500C88X		V	
256MB	Aeneon	AED83T500	3	Aeneon	SS	AED560UD00-500C88Z	V	V	
512MB	Aeneon	AED93T500	3	Aeneon	SS	AED660UD00-500B98X	V	V	
512MB	Aeneon	AED83T500	N/A	Aeneon	DS	AED660UD00-500C88X	V	V	V
56MB	SimpleTech	838S032T05A	N/A	N/A	SS	SVM-DDR3200/256	V	V	
512MB	SimpleTech	838S032T05A	N/A	N/A	DS	SVM-DDR3200/512	V	V	V
024MB	Patriot	Heat-Sink Package	N/A	N/A	DS	PDC1G3200+XBLK	V	V	
512MB	MDT	25B25680-50520	N/A	N/A	DS	M512-400-16B	V	V	

Legend:

Side(s): SS - Single Sided   **DS** - Double Sided

A : Supports one module inserted in any slot as Single-channel memory configuration
B : Supports one pair of modules inserted in two slot as Single-channel memory
configuration.

Visit the ASUS website (www.asus.com) for the latest DDR 400 Qualified Vendor List for this motherboard.

Obtain DDR DIMMs only from ASUS qualified vendors for better system performance.

1.7.3 Installing a DIMM

Follow these steps to install a DIMM.

1. Unlock a DIMM socket by pressing the retaining clips outward.

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

3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.

DDR DIMM

Unlocked
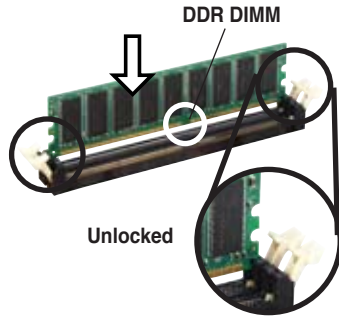
A DDR DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

1.8 Expansion slots

To install and configure an expansion card:

1. Install an expansion card following the instructions that came with the chassis.

2. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for BIOS information.

3. Assign an IRQ to the card. Refer to the tables next page.

4. Install the drivers and/or software applications for the expansion card according to the card documentation.

1.8.1 Standard interrupt assignments

IRQ	Priority	Standard Function
0	1	System Timer
1	2	Keyboard Controller
2	N/A	Programmable Interrupt
3*	11	IRQ holder for PCI steering
4*	12	Communications Port (COM1)
5*	13	IRQ holder for PCI steering
6	14	Floppy Disk Controller
7*	15	Printer Port (LPT1)
8	3	System CMOS/Real Time Clock
9*	4	IRQ holder for PCI steering
10*	5	IRQ holder for PCI steering
11*	6	IRQ holder for PCI steering
12*	7	PS/2 Compatible Mouse Port
13	8	Numeric Data Processor
14*	9	Primary IDE Channel
15*	10	Secondary IDE Channel

* These IRQs are usually available for ISA or PCI devices.

1.8.2 IRQ assignments for this motherboard

	INT A	INT B	INT C	INT D
PCI slot 1	shared	—	—	—
PCI slot 2	—	shared	—	—
PCI slot 3	—	—	shared	—
LAN	—	shared	—	—
Onboard Audio	—	—	shared	—
Onboard USB	—	—	shared	—
Onboard RAID	—	shared	—	—

When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

1.8.3 PCI slots

The PCI slots support PCI cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications.
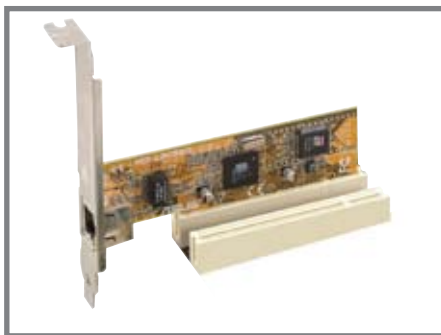
1.8.4 PCI Express x1 slot

This motherboard supports PCI Express x1 network cards, SCSI cards and other cards that comply with the PCI Express specifications. The figure shows a network card installed on the PCI Express x1 slot.

1.8.5 PCI Express x16 slot

This motherboard supports PCI Express x16 graphic cards that comply with the PCI Express specifications. The figure shows a graphics card installed on the PCI Express x16 slot.

1.9 Jumpers

1. Clear RTC RAM (CLRTC)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS, that include system setup information such as system passwords, is powered by the onboard button cell battery.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.

2. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.

3. Plug the power cord and turn ON the computer.

4. Hold down the **<Del>** key during the boot process and enter BIOS setup to re-enter data.

> Except when clearing the RTC RAM, never remove the cap on the jumper default position. Removing the cap will cause system boot failure!

CLRTC

1 2   2 3

Normal   Clear CMOS
(Default)

K8V-XE Clear RTC RAM
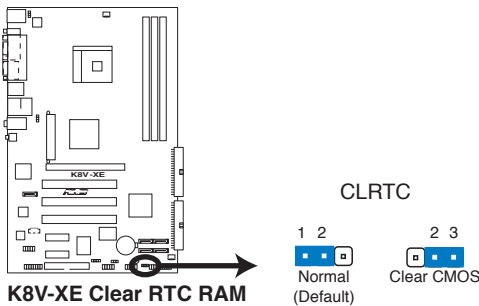
> You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so BIOS can automatically reset parameter settings to its previous values.

2. Keyboard power (3-pin KBPWR)

This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) if you wish to wake up the computer when you press a key on the keyboard. This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.

KBPWR

2
1
+5V
(Default)

3
2
+5VSB
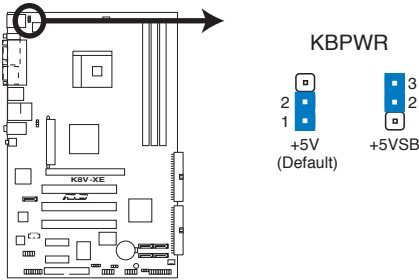
K8V-XE Keyboard Power Setting

3. USB device wake-up (3-pin USBPWR12)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes (no power to CPU, DRAM in slow refresh, power supply in reduced power mode).

USBPW1

2
1
+5V
(Default)

3
2
+5VSB

USBPW2

1 2
+5V
(Default)

2 3
+5VSB
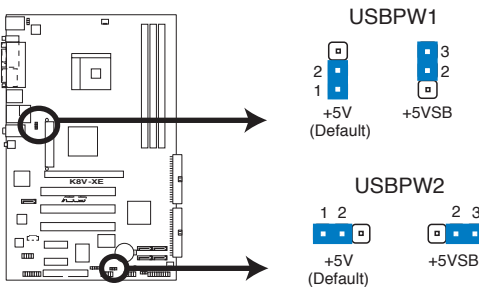
K8V-XE USB Device Wake Up

> •   The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port. Otherwise, the system would not power up.
>
> •   The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

1.10　Connectors

This section describes and illustrates the motherboard rear panel and internal connectors.

1.10.1 Rear panel connectors
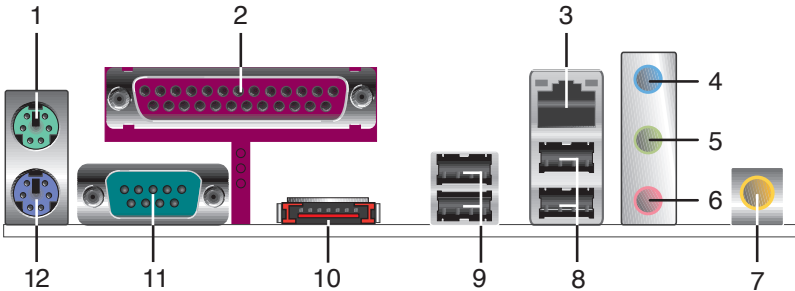
1. **PS/2 mouse port.** This green 6-pin connector is for a PS/2 mouse.
2. **Parallel port.** This 25-pin port connects a parallel printer, a scanner, or other devices.
3. **RJ-45 port.** This port allows connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

LAN port LED indications

ACT/LINK LED		SPEED LED	
Status	**Description**	**Status**	**Description**
OFF	No link	OFF	No Link
Orange	100Mbps connection	Green	10Mbps connection
Blinking	Acting	Blinking	Acting

RJ45

ACT/LNK □□ SPEED
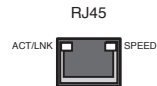
4. **Line In jack.** This Line In (light blue) jack connects a tape player or other audio sources. In 6-channel mode, the function of this jack becomes Bass/Center.
5. **Line Out jack.** This Line Out (lime) jack connects a headphone or a speaker. In 6-channel mode, the function of this jack becomes Front Speaker Out.
6. **Microphone jack.** This Mic (pink) jack connects a microphone. In 6-channel mode, the function of this jack becomes Rear Speaker Out.

> The functions of the Line Out, Line In, and Microphone jacks change when you select the 6-channel audio configuration as shown in the following table.

Audio 2, 4 or 6-channel configuration

	Headphone/ 2-Speaker	4-Speaker	6-Speaker
Light Blue	Line In	Line In	Bass/Center
Lime	Line Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Rear Speaker Out	Rear Speaker Out

7. **S/PDIF out jack.** This jack connects to external audio output devices.

8. **USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

9. **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

10. **External Serial ATA 3Gb/s port.** This port connects to an external SATA box or a Serial ATA port multiplier.

The external SATA port supports external Serial ATA 3Gb/s devices. Longer cables support higher power requirements to deliver signal up to two meters away, and enables improved hot-swap function.

11. **Serial connector.** This 9-pin COM1 port is for serial devices.

12. **PS/2 keyboard port.** This purple connector is for a PS/2 keyboard.

1.10.2 Internal connectors

1. IDE connectors (40-1 pin PRI_IDE, SEC_IDE)

This connector supports the provided UltraATA133 IDE hard disk ribbon cable. Connect the cable's blue connector to the primary (recommended) or secondary IDE connector, then connect the gray connector to the UltraATA133 slave device (hard disk drive) and the black connector to the UltraATA133 master device.

• Follow the hard disk drive documentation when setting the device in master or slave mode.

• Pin 20 on each IDE connector is removed to match the covered hole on the UltraATA cable connector. This prevents incorrect orientation when you connect the cables.

• The hole near the blue connector on the UltraATA cable is intentional.
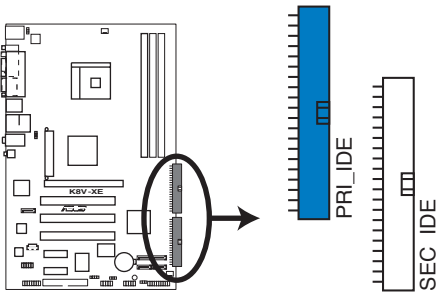
K8V-XE IDE Connectors

PRI_IDE

SEC_IDE

NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

2. Floppy disk drive connector (34-1 pin FLOPPY)

This connector supports the provided floppy drive ribbon cable. After connecting one end to the motherboard, connect the other end to the floppy drive. (Pin 5 is removed to prevent incorrect insertion when using ribbon cables with pin 5 plug).
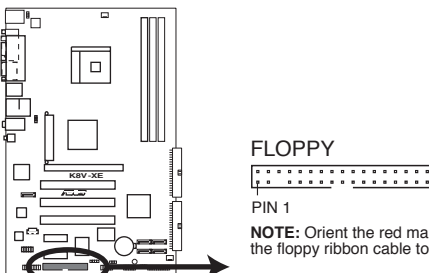
FLOPPY

PIN 1

NOTE: Orient the red markings on the floppy ribbon cable to PIN 1.

K8V-XE Floppy Disk Drive Connector

3. **ATX power connectors (24-pin ATXPWR, 4-pin ATX12V)**

   These connectors connect to an ATX 12V power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

   In addition to the 24-pin EATX power connector, this motherboard requires that you connect the 4-pin ATX +12V power plug to provide sufficient power to the CPU.

   > Make sure that your ATX 12V power supply can provide 8A on the +12V lead and at least 1A on the +5-volt standby lead (+5VSB). The minimum recommended wattage is 300W or 350W for a fully configured system. The system may become unstable and may experience difficulty powering up if the power supply is inadequate.

ATX12V
+12V DC GND
+12V DC GND

EATXPWR

+3 Volts	+3 Vol
-12 Volts	+3 Vol
Ground	Groun
PSON#	+5 Vol
Ground	Groun
Ground	+5 Vol
Ground	Groun
-5 Volts	Power
+5 Volts	+5V St
+5 Volts	+12 Vc
+5 Volts	+12 Vc
Ground	+3 Vol

K8V-XE ATX Power Connectors
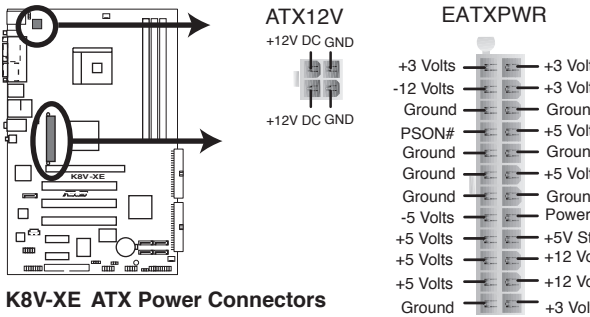
4. **Internal audio connectors (4-pin CD, AUX)**

   These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.

CD (Black)

Right Audio Channel
Ground
Left Audio Channel

K8V-XE Internal Audio Connectors
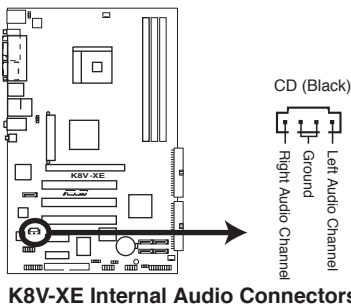
5. CPU and chassis fan connectors (3-pin CPU_FAN, CHA_FAN)

The fan connectors support cooling fans of 350mA~740mA (8.88W max.) or a total of 1A~2.22A (26.64W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

⚠️ Do not forget to connect the fan cables to the fan connectors. Lack of sufficient air flow within the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors!

CPU_FAN

GND
+12V
Rotation

CHA_FAN

GND
+12V
Rotation
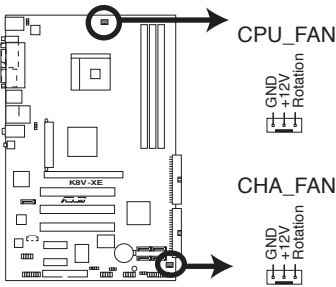
K8V-XE Fan Connectors

6. USB header (10-1 pin USB56, USB78)

If the USB ports on the rear panel are inadequate, a USB header is available for additional USB ports. Connect the USB cable of the USB 2.0 module to this header. You may install the USB module in the chassis front panel. The module has two USB 2.0 ports for connecting next generation USB peripherals such as high resolution cameras, scanners, and printers.

USB56

USB+5V
USB_P6-
USB_P6+
GND
NC

USB+5V
USB_P5-
USB_P5+
GND

USB78

USB+5V
USB_P8-
USB_P8+
GND
NC

USB+5V
USB_P7-
USB_P7+
GND
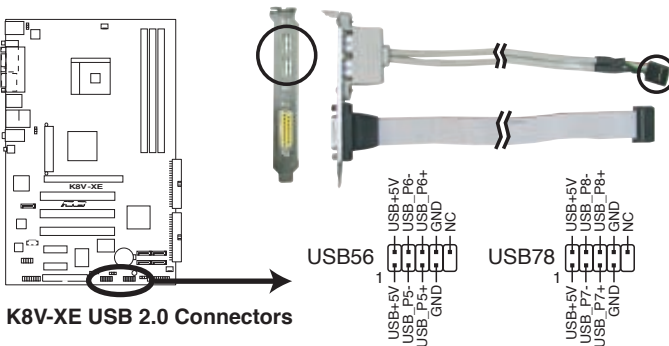
K8V-XE USB 2.0 Connectors

✏️ • The USB 2.0 module is purchased separately.
 • Install the USB 2.0 driver before using the USB 2.0 feature.

ASUS K8V-XE motherboard   **1-23**

4. **Serial ATA connectors (7-pin SATA1, SATA2, SATA3, SATA4)**

These connectors are for the Serial ATA signal cables for Serial ATA hard disk devices. The current Serial ATA I interface allows up to 150 MB/s data transfer rate while Serial ATA II allows up to 300 MB/s data transfer rate, faster than the standard parallel ATA with 133 MB/s (DMA/133).

K8V-XE SATA Connectors
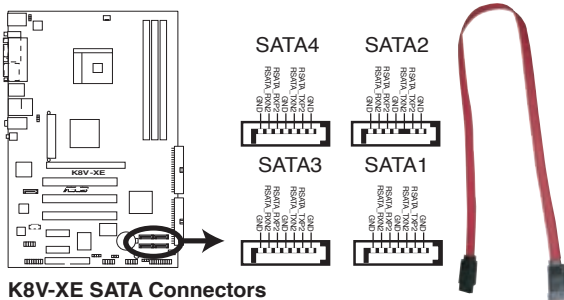
5. **Digital Audio connector (4-1 pin SPDIF_OUT)**

This connector is for the S/PDIF audio module to allow digital sound output. Connect one end of the S/PDIF audio cable to this connector and the other end to the S/PDIF module.

K8V-XE Digital Audio Connector
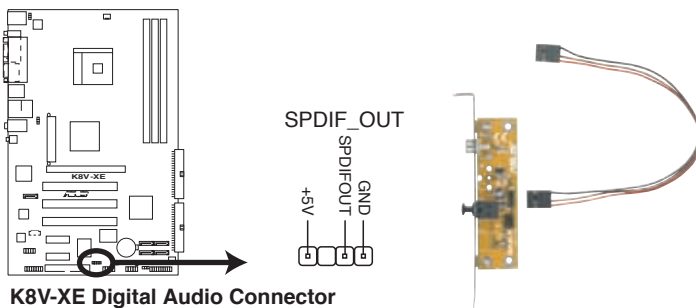
The S/PDIF out module is purchased separately.

6. GAME/MIDI port connector (16-1 pin GAME)

This connector is for a GAME/MIDI port. Connect the USB/GAME module cable to this connector, then install the module to a slot opening at the back of the system chassis. The GAME/MIDI port connects a joystick or game pad for playing games, and MIDI devices for playing or editing audio files.

K8V-XE Game Connector

GAME

+5V
J1B2
J1CY
GND
GND
J1CX
J1B1
+5V

MIDI_IN
J2B2
J2CY
MIDI_OUT
J2CX
J2B1
+5V
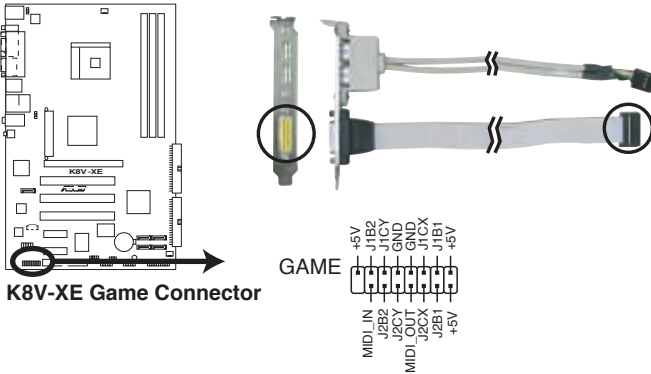
The Game/MIDI port is purchased separately .

7. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports either High Definition Audio or AC `97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.

AAFP

Azalia
compliant definition

Legacy AC'97
compliant definition

GND
PRESENCE#
SENSE1_RETUR
SENSE2_RETUR

PORT1 L
PORT1 R
PORT2 R
SENSE_SEND
PORT2 L

AGND
+5VA
BLINE_OUT_R
BLINE_OUT_L

MIC2
MICPWR
Line out_R
NC
Line out_L

K8V-XE Analog Front Panel Connector
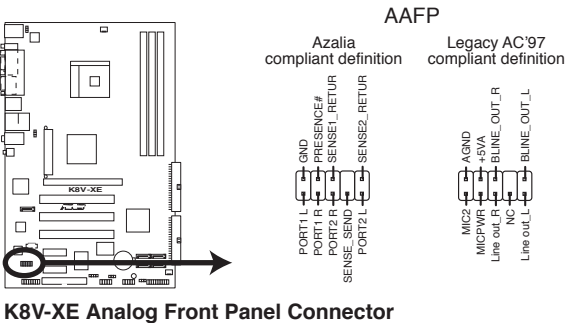
We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard high-definition audio capability.

8. **System panel connector (20-1 pin PANEL)**

   This connector accommodates several system front panel functions.

   K8V-XE System Panel Connector

   * Requires an ATX power supply.
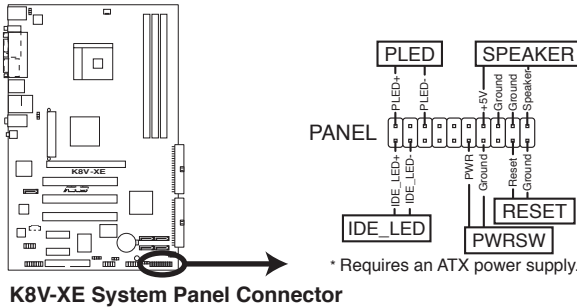
- **System Power LED Lead (Green 3-pin PLED)**

  This 3-pin connector connects to the system power LED. The LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **System Warning Speaker Lead (Orange 4-pin SPEAKER)**

  This 4-pin connector connects to the case-mounted speaker and allows you to hear system beeps and warnings.

- **Reset Switch Lead (Blue 2-pin RESET)**

  This 2-pin connector connects to the case-mounted reset switch for rebooting the system without turning off the system power.

- **ATX Power Switch / Soft-Off Switch Lead (Light Green 2-pin PWRSW)**

  This connector connects a switch that controls the system power. Pressing the power switch turns the system between ON and SLEEP, or ON and SOFT OFF, depending on the BIOS or OS settings. Pressing the power switch while in the ON mode for more than 4 seconds turns the system OFF.

- **Hard disk activity LED (Red 2-pin IDE_LED)**

  This connector supplies power to the hard disk activity LED. Any read or write activity of an IDE device cause this LED to light up.

The System Panel connector is color-coded for easy and foolproof connection. Take note of the specific connector colors as described.

Chapter 2

This chapter tells how to change system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

BIOS information

2.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **Award BIOS Flash Utility** (Updates the BIOS in DOS mode using a bootable floppy disk.)

2. **ASUS CrashFree BIOS 2** (Updates the BIOS using a bootable floppy disk or the motherboard support CD when the BIOS file fails or gets corrupted.)

3. **ASUS EZ Flash** (Updates the BIOS in DOS using a floppy disk or the motherboard support CD.)

4. **ASUS Update** (Updates the BIOS in Windows® environment.)

Refer to the corresponding sections for details on these utilities.

> Save a copy of the original motherboard BIOS file to a bootable floppy disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AwardBIOS Flash utilities.

2.1.1 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

   DOS environment

   Insert a 1.44 MB floppy disk into the drive. At the DOS prompt, type:

   > `format A:/S`   then press **<Enter>**.

   Windows® 98SE/ME/XP environment

   a. Insert a 1.44 MB floppy disk into the floppy disk drive.

   b. From your Windows desktop, click on **Start**, then select **My Computer**.

   c. Select the **3 1/2 Floppy Drive** icon.

   d. Click **File** from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.

   e. If you are using Windows® XP, select **Create an MS-DOS startup disk** from the format options field, then click **Start**.

      OR

      If you are using Windows® 98SE/ME, select **Full** option button from the format type, then click **Start**.

   Windows® 2000 environment

   To create a set of boot disks for Windows® 2000, run the Makeboot.exe tool from the Windows® 2000 CD:

   a. Insert a 1.44 MB floppy disk into the floppy disk drive.

   b. Insert the Windows® 2000 CD into the CD-ROM drive.

c.   Click **Start**, then select **Run**.

d.   From the Open box, type

   `D:\bootdisk\makeboot a:` then press <Enter>,

   assuming that D: is your CD-ROM drive.

e.   Follow succeeding screen instructions.

2.   Copy the original (or the latest) motherboard BIOS to the bootable floppy disk.

2.1.2   Updating the BIOS

The Basic Input/Output System (BIOS) can be updated using the AwardBIOS Flash Utility. Follow these instructions to update the BIOS using this utility.

1.   Download the latest BIOS file from the ASUS web site. Rename the file to K8VXE.BIN and save it to a floppy disk.

> Save only the updated BIOS file in the floppy disk to avoid loading the wrong BIOS file.

2.   Copy the AwardBIOS Flash Utility (awdflash.exe) from the Software folder of the support CD to the floppy disk with the latest BIOS file.

3.   Boot the system in DOS mode using the bootable floppy disk you created earlier.

4.   When the A:> appears, replace the bootable floppy disk with the floppy disk containing the new BIOS file and the Award BIOS Flash Utility.

5.   At the prompt, type awdflash then press <Enter>. The Award BIOS Flash Utility screen appears.

```
      AwardBIOS Flash Utility for ASUS V1.01
 (C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program:


Message: Please input File Name!
```

6. Type the BIOS file name in the **File Name to Program** field, then press <Enter>.

```
     AwardBIOS Flash Utility for ASUS V1.01
  (C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: 0110.bin




Message: Do You Want To Save Bios (Y/N)
```

7. Press <N> when the utility prompts you to save the current BIOS file. The following screen appears.

8. The utility verifies the BIOS file in the floppy disk and starts flashing the BIOS file.

```
     AwardBIOS Flash Utility for ASUS V1.01
  (C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: 0110.bin

Program Flashing Memory - 0FE00 OK


     ▢ Write OK    ▮ No Update    ▮ Write Fail

  Warning: Don't Turn Off Power Or Reset System!
```

> Do not turn off or reset the system during the flashing process!

9. The utility displays a **Flashing Complete** message indicating that you have successfully flashed the BIOS file. Remove the floppy disk then press <F1> to restart the system.

```
     AwardBIOS Flash Utility for ASUS V1.01
  (C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program: 0110.bin
          Flashing Complete
          Press <F1> to Continue


     ▢ Write OK    ▮ No Update    ▮ Write Fail

  F1 Reset
```

2.1.3   Saving the current BIOS file

You can use the AwardBIOS Flash Utility to save the current BIOS file. You can load the current BIOS file when the BIOS file gets corrupted during the flashing process.

> Make sure that the floppy disk has enough disk space to save the file.

To save the current BIOS file using the AwardBIOS Flash Utility:

1. Follow steps 1 to 6 of the previous section.
2. Press <Y> when the utility prompts you to save the current BIOS file. The following screen appears.

```
        AwardBIOS Flash Utility for ASUS V1.01
   (C) Phoenix Technologies Ltd. All Rights Reserved

   For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
   Flash Type - PMC Pm49FL004T LPC/FWH


   File Name to Program:  0110.bin

   Save current BIOS as:




    Message:
```

3. Type a filename for the current BIOS file in the **Save current BIOS as** field, then press <Enter>.

```
        AwardBIOS Flash Utility for ASUS V1.01
   (C) Phoenix Technologies Ltd. All Rights Reserved

   For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
   Flash Type - PMC Pm49FL004T LPC/FWH

   File Name to Program:  0110.bin
                Checksum:  DAD6H
   Save current BIOS as:  old.bin




    Message: Please Wait!
```

4. The utility saves the current BIOS file to the floppy disk, then returns to the BIOS flashing process.

```
        AwardBIOS Flash Utility for ASUS V1.01
   (C) Phoenix Technologies Ltd. All Rights Reserved

   For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
   Flash Type - PMC Pm49FL004T LPC/FWH

   File Name to Program:  0110.bin
              Now Backup System BIOS to
                        File!




    Message: Please Wait!
```

2.1.4 ASUS CrashFree BIOS 2 utility

The ASUS CrashFree BIOS 2 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD or the floppy disk that contains the updated BIOS file.

> Prepare the motherboard support CD or the floppy disk containing the updated motherboard BIOS before using this utility.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Turn on the system.
2. Insert the motherboard support CD to the optical drive.
3. The utility displays the following message and automatically checks the CD for the BIOS file.

```
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
  Found CDROM, try to Boot from it... Pass
```

> DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from a floppy disk

To recover the BIOS from the support CD:

1. Remove any CD from the optical drive, then turn on the system.
2. Insert the floppy disk with the original or updated BIOS file to the floppy disk drive.
3. The utility displays the following message and automatically checks the floppy disk for the original or updated BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
```

When no CD is found, the utility automatically checks the optical drive for the original or updated BIOS file. The utility then updates the corrupted BIOS file.

```
Award BootBlock BIOS v1.0
Copyright (c) 2000, Award Software, Inc.

BIOS ROM checksum error
Detecting IDE ATAPI device...
  Found CDROM, try to Boot from it... Fail

Detecting floppy drive A media...
```

DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

4. Restart the system after the utility completes the updating process.

The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website (www.asus.com) to download the latest BIOS file.

2.1.5 ASUS EZ Flash utility

The ASUS EZ Flash feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self-Test (POST).

To update the BIOS using EZ Flash:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard.
2. Save the BIOS file to a floppy disk, then restart the system.
3. Press <Alt> + <F2> during POST to display the following.

```
Insert Disk then press Enter or ESC to continue POST
```

4. Insert the floppy disk that contains the BIOS file to the floppy disk drive then press <Enter>. The following screen appears.

```
     AwardBIOS Flash Utility for ASUS V1.01
  (C) Phoenix Technologies Ltd. All Rights Reserved

For K8T890-8251-K8V-XE-00        DATE: 01/05/2006
Flash Type - PMC Pm49FL004T LPC/FWH

File Name to Program:



Message: Please wait...
```

5. When the correct BIOS file is found, EZ Flash performs the BIOS update process and automatically reboots the system when done.

> ⚠ Do not shutdown or reset the system while updating the BIOS to prevent system boot failure!

2.1.6   ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.

ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

1. Place the support CD in the optical drive. The **Drivers** menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update VX.XX.XX.** See page 5-3 for the **Utilities** screen menu.
3. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking
   Start > Programs > ASUS > ASUSUpdate > ASUSUpdate. The ASUS Update
   main window appears.
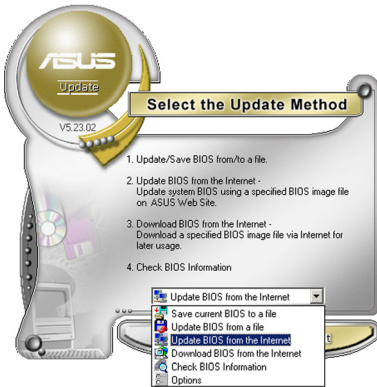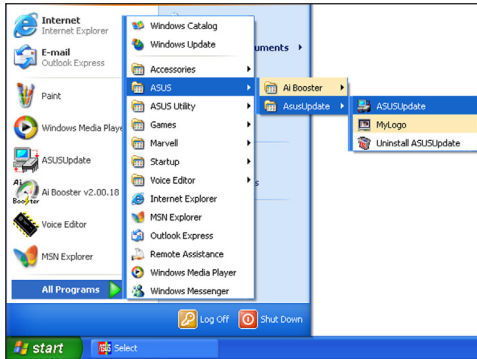
2. Select **Update BIOS from the Internet** option from the drop-down menu, then click **Next.**

3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.

5. Follow the screen instructions to complete the update process.

The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.
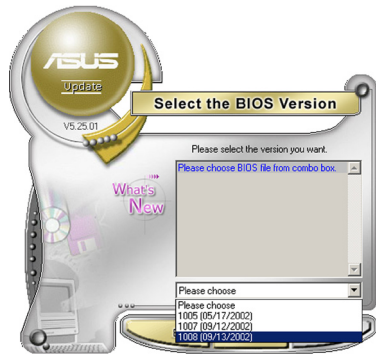
Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate.** The ASUS Update main window appears.

2. Select **Update BIOS from a file** option from the drop-down menu, then click **Next**.
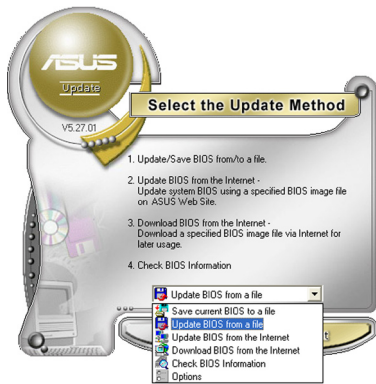
3. Locate the BIOS file from the **Open** window, then click **Open**.

4. Follow the screen instructions to complete the update process.
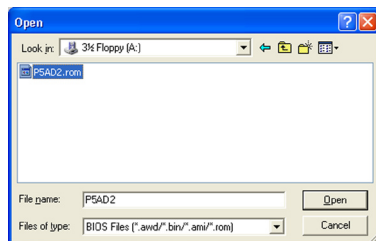
2.2 BIOS Setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section "2.1 Managing and updating your BIOS."

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup". This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you may want to change the configuration of your computer in the future. For example, you may want to enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press **<Del>** during the Power-On Self-Test (POST) to enter the Setup utility. Otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing **<Ctrl+Alt+Delete>**, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. It is a menu-driven program, which means you can scroll through the various sub-menus and make your selections from the available options using the navigation keys.

> The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu. See section "2.7 Exit Menu."

> The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
>
> Visit the ASUS website (www.asus.com) to download the latest product and BIOS information.

2.2.1 BIOS menu screen

Menu items   Menu bar   Configuration fields   General help

```
                        Phoenix-Award BIOS CMOS Setup Utility
      Main   Advanced   Power   Boot   Exit

         System Time               15 : 30 : 36                    Select Menu
         System Date               Sun, Jan 15 2006
                                                             Item Specific Help▶
         Legacy Diskette A:        [1.44M, 3.5 in.]
                                                             Press [Enter] to enter
    ▶    Primary IDE Master        [ST321122A]               next page for detail
    ▶    Primary IDE Slave         [ASUS CDS520/A]           hard drive settings
    ▶    Secondary IDE Master      [None]
    ▶    Secondary IDE Slave       [None]
         HDD SMART Monitoring      [Disabled]

         Installed Memory          256MB
         Usable Memory             255MB




     F1:Help          ↑↓ : Select Item    -/+: Change Value        F5: Setup Defaults
     ESC: Exit        →←: Select Menu      Enter: Select Sub-menu   F10: Save and Exit
```

Sub-menu items   Legend bar

2.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main   For changing the basic system configuration

Advanced   For changing the advanced system settings

Power   For changing the advanced power management (APM) configuration

Boot   For changing the system boot configuration

Exit   For selecting the exit options and loading default settings

• The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

• Visit the ASUS website (www.asus.com) to download the latest BIOS informavtion.

2.2.3 Legend bar

At the bottom of the Setup screen is a legend bar. The keys in the legend bar allow you to navigate through the various setup menus. The following table lists the keys found in the legend bar with their corresponding functions.

Navigation Key	Function
<F1>	Displays the General Help screen
<F5>	Loads setup default values
<Esc>	Exits the BIOS setup or returns to the main menu from a sub-menu
Left or Right arrow	Selects the menu item to the left or right
Up or Down arrow	Moves the highlight up or down between fields
Page Down or – (minus)	Scrolls backward through the values for the highlighted field
Page Up or + (plus)	Scrolls forward through the values for the highlighted field
<Enter>	Brings up a selection menu for the highlighted field
<F10>	Saves changes and exit

2.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting Main shows the **Main** menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

2.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the iteam has a sub-menu. To display the sub-menu, select the item and press <Enter>.

2.2.6 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to "2.2.7 Pop-up window."

2.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the
configuration options for that item.

```
                    Phoenix-Award BIOS CMOS Setup Utility
   Main   Advanced   Power   Boot   Exit

     System Time                 15 : 30 : 36           Select Menu
     System Date                 Sun, Jan 15 2006
                                                    Item Specific Help▶
     Legacy Diskette A:          [1.44M, 3.5 in.]
                                                    cifies the capacity
  ▶  Primary IDE Mast  Legacy Diskette A:            physical size of
  ▶  Primary IDE Sla                                skette drive A.
  ▶  Secondary IDE M   Disabled       ..... [ ]
  ▶  Secondary IDE S   720K , 3.5 in.  ..... [ ]
     HDD SMART Monit   1.44M, 3.5 in.  ..... [▮]
                       2.88M ,3.5 in.  ..... [ ]
     Installed Memor
     Usable Memory


                        ↑↓ :Move   ENTER:Accept   ESC:Abort


   F1:Help         ↑↓ : Select Item    -/+: Change Value      F5: Setup Defaults
   ESC: Exit       →←: Select Menu    Enter: Select Sub-menu   F10: Save and Exit
```

Pop-up menu

2.2.8 General help

At the top right corner of the menu screen is a brief description of the selected
item.

2.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.

Refer to section "2.2.1 BIOS menu screen" for information on the menu screen items and how to navigate through them.

```
                  Phoenix-Award BIOS CMOS Setup Utility
    Main    Advanced    Power    Boot    Exit

        System Time              15 : 30 : 36              Select Menu
        System Date              Wed, Nov 5 2004
                                                        Item Specific Help▶
        Legacy Diskette A:       [1.44M, 3.5 in.]
                                                        Press [Enter] to enter
    ▶   Primary IDE Master       [ST321122A]            next page for detail
    ▶   Primary IDE Slave        [ASUS CDS520/A]        hard drive settings
    ▶   Secondary IDE Master     [None]
    ▶   Secondary IDE Slave      [None]
        HDD SMART Monitoring     [Disabled]

        Installed Memory         256MB
        Usable Memory            255MB



    F1:Help          ↑↓ : Select Item     -/+: Change Value        F5: Setup Defaults
    ESC: Exit        →←: Select Menu       Enter: Select Sub-menu   F10: Save and Exit
```

2.3.1 System Time [xx:xx:xxxx]

Allows you to set the system time.

2.3.2 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

2.3.3 Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled] [720K , 3.5 in.] [1.44M, 3.5 in.] [2.88M, 3.5 in.]

2.3.4   Primary and Secondary IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

```
                        Phoenix-Award BIOS CMOS Setup Utility
   Main

           Primary IDE Master                              Select Menu

   Primary IDE Master              [Auto]          Item Specific Help▶
   Access Mode                     [Auto]
                                                   Press [Enter] to
   Capacity                        0 MB            select

   Cylinder                        0
   Head                            0
   Sector                          0
   PIO Mode                        [Auto]
   UDMA Mode                       [Auto]
   Transfer Mode                   None




   F1:Help        ↑↓: Select Item    -/+: Change Value       F5: Setup Defaults
   ESC: Exit      →←: Select Menu     Enter: Select Sub-menu  F10: Save and Exit
```

The BIOS automatically detects the values opposite the dimmed items (Capacity, Cylinder, Head, Sector and Transfer Mode). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

IDE Primary Master/Slave [Auto];
IDE Secondary Master/Slave [Auto]

Select [Auto] to automatically detect an IDE hard disk drive. If automatic detection is successful, the BIOS automatically fills in the correct values for the remaining fields on this sub-menu. If the hard disk was already formatted on a previous system, the setup BIOS may detect incorrect parameters. Select [Manual] to manually enter the IDE hard disk drive parameters. If no drive is installed select [None]. Configuration options: [None] [Auto] [Manual]

Access Mode [Auto]

The default [Auto] allows automatic detection of an IDE hard disk drive. Select [CHS] for this item if you set the IDE Primary Master/Slave to [Manual]. Configuration options: [CHS] [LBA] [Large] [Auto]

⚠ Before attempting to configure a hard disk drive, make sure you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

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Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.

PIO Mode [Auto]

Sets the PIO mode for the IDE device.
Configuration options: [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

UDMA Mode [Auto]

Disables or sets the UDMA mode. Configuration options: [Disabled] [Auto]

Transfer Mode

Shows the Transfer mode. This item is not configurable.

> After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

2.3.5 HDD SMART Monitoring [Disabled]

Allows you to enable or disable the HDD Self-Monitoring Analysis and Reporting Technology (SMART) feature.
Configuration options: [Disabled] [Enabled]

2.4 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

> ⚠ Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

```
                    Phoenix-Award BIOS CMOS Setup Utility
   Main   Advanced   Power   Boot   Exit

                                                    Select Menu
 ▶  JumperFree Configuration
                                               Item Specific Help▶
 ▶  CPU Configuration
 ▶  Chipset                                    Press Enter to Set
 ▶  PCIPnP
 ▶  Onboard Device Configuration
 ▶  USB Configuration




 F1:Help          ↑↓: Select Item    -/+: Change Value     F5: Setup Defaults
 ESC: Exit        →←: Select Menu     Enter: Select Sub-menu  F10: Save and Exit
```

2.4.1 JumperFree Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
          Advanced

             JumperFree Configuration                 Select Menu
 ▶ Frequency Configuration
   CPU MuTiplier                 [Auto]          Item Specific Help▶
   Hammer Vid control            [StartUp]
                                                Press [Enter] to
                                                adjust frequency


```

Frequency Configuration

The items in this sub-menu show the frequency information auto-detected by the BIOS.

```
                    Phoenix-Award BIOS CMOS Setup Utility
          Advanced

             Frequency Configuration                  Select Menu

   Spread Spectrum               [Auto]         Item Specific Help▶
   PCIEx clock Sync. to CPU      [Enable]
 x PLL2 Clock                     100MHz
   PCI clock Sync. to CPU        [Enable]
 x PCIClock                       33.0 MHz
   CPU clock                     [200MHz]


```
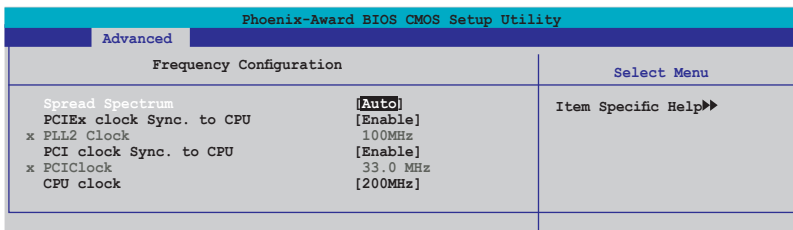
Spread Spectrum [Auto]

Enables or disables the clock generator spread spectrum.
Configuration options: [Disabled] [+/- 0.1%] [+/- 0.2%] [+/- 0.3%] [+/- 0.4%] [+/-
0.5%] [+/- 0.6%] [+/- 0.7%] [+/- 0.8%] [+/- 0.9%] [+/- 1.0%] [Auto]

PCIEx clock Sync. to CPU [Enable]

Enables or disables the PCI Express™ synchronous clock to the CPU.
Configuration options: [Disable] [Enable]

x PLL2 Clock [XXX] (value is auto-detected)

Allows you to set the x PLL2 clock frequency. This item is user-configurable
only when the PCIEx clock Sync. to CPU item is set to Disabled. The BIOS
detects the default value of this item. Press <Enter> then key-in desired x PLL2
clock frequency within range.

PCI clock Sync. to CPU [Enable]

Enables or disables the PCI synchronous clock to the CPU.
Configuration options: [Disable] [Enable]

PCI Clock [XXX] (value is auto-detected)

Allows you to set the PCI clock frequency. This item is user-configurable only
when the PCI clock Sync. to CPU item is set to Disabled. The BIOS detects
the default value of this item. Press <Enter> then key-in desired PCI clock
frequency within range.

CPU Clock [XXX] [200 MHz]

Displays the frequency sent by the clock generator to the system bus and PCI
bus. The default value of this item is auto-detected by the BIOS. Use the <+>
and <-> keys to adjust the CPU frequency.

⚠ Selecting a very high CPU frequency may cause the system to become
unstable! If this happens, revert to the default setting.

CPU Multiplier [Auto]

Sets the operating CPU multiplier. The configuration options vary depending on the
type of CPU installed. Configuration options: [Auto] [x4] [x4.5] [x5] [x5.5] [x6] [x6.5]
[x7] [x7.5] [x7.5] [x8] [x8.5] [x9] [x9.5] [x10]

Hammer Vid control [Startup]

Sets the Hammer Voltage ID control. Configuration options: [Startup] [1.550 v] [1.525 v] [1.500 v] [1.475 v] [1.450 v] [1.425 v] [1.400 v] [1.375 v] [1.350 v] [1.325 v] [1.300 v] [1.275 v] [1.250 v] [1.225 v] [1.200 v] [1.175 v] [1.150 v] [1.125 v] [1.100 v] [1.075 v] [1.050 v] [1.025 v] [1.000 v] [0.975 v] [0.950 v] [0.925 v] [0.900 v] [0.875 v] [0.850 v] [0.825 v] [0.800 v]

2.4.2   CPU Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                        CPU Configuration              Select Menu

   CPU Type      AMD Sempron(tm) Processor 3000+
                                                       Item Specific Help▶▶
   CPU Spee      1800MHz                               Enable/Disable AMD
   Cache RAM     128K                                  Coll'n'Quiet function
   Current FSB Frequency              200 MHz          which support P-state
   AMD K8 Cool'n'Quiet control        [Disabled]       transitions in AMD
                                                       processors.
```

AMD K8 Cool'n'Quiet control [Disabled]

Allows you to disable or set the AMD Cool 'n' Quiet!™ Technology feature. Configuration options: [Enabled] [Disabled]

> This feature requires the AMD CPU heatsink, fan assembly with monitor chip and BIOS utility.

2.4.3   Chipset

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                            Chipset                    Select Menu

  ▶   DRAM Configuration
      Upstream LDT Bus Width         [16 bit]          Item Specific Help▶
      Downstream LDT Bus Width       [16 bit]          DRAM timing and
      LDT Bus Frequency              [Auto]            control
      PEG Data Scrambling            [Auto]
      VLink Mode Selection           [Auto]
      Primary Display Adapter        [PCI]
```

DRAM Configuration

The items in this sub-menu show the DRAM-related information auto-detected by the BIOS.

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

              DRAM Configuration                        Select Menu

        Current DRAM Frequency        200 MHz        Item Specific Help►►►
        Timing Mode                   [Auto]
    x   Memclock index value (Mhz)    200Mhz         <Enter> to select DARM
    x   CAS# latency (Tcl)            2.5            configuration by
    x   Min RAS# active time(Tras)    8T             [Auto] is recommended.
    x   RAS# to CAS# delay  (Trcd)    4T             [Manual] allows you to
    x   Row precharge Time  (Trp)     4T             set each
    x   1T/2T Memory Timing           1T             configuration on your
        MTRR mapping mode             [Continous]    own.




    F1:Help          ↑↓ : Select Item     -/+: Change Value        F5: Setup Defaults
    ESC: Exit         →←: Select Menu      Enter: Select Sub-menu   F10: Save and Exit
```

Current DRAM Frequency

Shows the Transfer mode. This item is not configurable.

Timing Mode [Auto]

Sets the timing mode. Configuration options: [Auto] [Manual]

Memclock index value (Mhz)

Shows the memory clock index value. This item is not configurable.

CAS# latency (Tcl)

Shows the latency between the SDRAM read command and the time the data actually becomes available.This item is not configurable.

Min RAS# active time (Tras)

Shows the minimum RAS# active time. This item is not configurable.

RAS# to CAS# delay (Trcd)

Shows the latency between the DDR SDRAM active command and the read/write command. This item is not configurable.

Row precharge Time (Trp)

Shows the Row precharge time.This item is not configurable.

1T/2T Memory Timing

Shows the memory timing. This item is not configurable.

MTRR mapping mode [Continous]

Sets the MTRR mapping mode.
Configuration options: [Continous] [Discrete]

Upstream LDT Bus Width [16 bit]

Sets the upstream Lightning Data Transport (LDT) Bus Width. Configuration options: [8 bit] [16 bit]

Downstream LDT Bus Width [16 bit]

Sets the downstream Lightning Data Transport (LDT) Bus Width. Configuration options: [8 bit] [16 bit]

LDT Bus Frequency [Auto]

Sets the Lightning Data Transport (LDT) Bus frequency.
Configuration options: [Auto] [800 MHz] [600 MHz] [400 MHz] [200 MHz]

PEG Data Scrambling [Auto]

Sets the PEG data scrambling. Configuration options: [Auto] [Disable]

VLink Mode Selection [Auto]

Sets the VLink mode. Configuration options: [By Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

Primary Display Adapter [PCI]

Sets the primary boot device. Configuration options: [PCI] [PCI-E]

2.4.4   PCIPnP

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                          PCIPnP                          Select Menu

    Plug & Play O/S                [No]
                                                    Item Specific Help
    Resources Controlled By        [Auto]
  x IRQ Resources
    Assign IRQ For VGA             [Enabled]

    **PCI Express relative items**
    Maximum Payload Size           [4096]
```

Plug & Play O/S [No]

When set to [No], the BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot. Configuration options: [No] [Yes]

Resources Controlled By [Auto]

When set to [Auto], the BIOS automatically configures all the boot and Plug and Play compatible devices. Set to [Manual] if you want to assign the IRQ DMA and memory base address fields. Configuration options: [Auto] [Manual]

When the item Resources Controlled By is set to [Auto], the item IRQ Resources is grayed out and not user-configurable. Refer to the section "IRQ Resources" for information on how to enable this item.

IRQ Resources

This sub-menu is activated only when the Resources Controlled By item is set to Manual.

```
                    Phoenix-Award BIOS CMOS Setup Utility
          Advanced

                IRQ Resources                       Select Menu

     IRQ-3 assigned to           [PCI Device]     Item Specific Help▶▶▶
     IRQ-4 assigned to           [PCI Device]
     IRQ-5 assigned to           [PCI Device]     Legacy ISA for devices
     IRQ-7 assigned to           [PCI Device]     compliant with the
     IRQ-9 assigned to           [PCI Device]     original PC AT bus
     IRQ-10 assigned to          [PCI Device]     specification, PCI/ISA
     IRQ-11 assigned to          [PCI Device]     PnP for devices
     IRQ-12 assigned to          [PCI Device]     compliant with the
     IRQ-14 assigned to          [PCI Device]     Plug and Play standard
     IRQ-15 assigned to          [PCI Device]     whether designed for
                                                  PCI or ISA bus
                                                  architecture



    F1:Help        ↑↓ : Select Item   -/+: Change Value      F5: Setup Defaults
    ESC: Exit      →←: Select Menu     Enter: Select Sub-menu F10: Save and Exit
```

IRQ-xx assigned to

When set to [PCI Device], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices. Configuration options: [PCI Device] [Reserved]

Assign IRQ for VGA [Enabled]

When set to [Enabled], the BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [Disabled], the BIOS does not assign an IRQ to the PCI VGA card even if requested.
Configuration options: [Disabled] [Enabled]

Maximum Payload Size [4096]

Sets the maximum payload size in bytes for PCI Express devices.
Configuration options: [128] [256] [512] [1024] [2048] [4096]

2.4.5 Onboard Devices Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                 Onboard Device Configuration              Select Menu

      JMicron RAID Controller      [IDE]            Item Specific Help▶▶
      SATA Controller              [Enabled]
      SATA Controller Mode         [RAID]
      HDA Controller               [Auto]
      Onboard LAN                  [Enabled]
      Onboard LAN Boot ROM         [Disabled]
      Serial Port1 Address         [3F8/IRQ4]
      Parallel Port Address        [378/IRQ7]
      Parallel Port Mode           [ECP+EPP]
      ECP MOde Use DMA             [3]
      Game Port Address            [201]
      Midi Port Address            [330]
      Midi Port IRQ                [10]


    F1:Help        ↑↓ : Select Item    -/+: Change Value      F5: Setup Defaults
    ESC: Exit      →←: Select Menu     Enter: Select Sub-menu  F10: Save and Exit
```

JMicron RAID Controller [IDE]
Allows you to enable or set the JMicron RAID Controller.
Configuration options: [IDE] [RAID] [Disabled]

SATA Controller [Enabled]
Allows you to enable or disable the SATA controller.
Configuration options: [Disabled] [Enabled]

SATA Controller Mode [RAID]
Allows you to set the SATA controller mode.
Configuration options: [IDE] [RAID] [AHCI]

HDA Controller [Auto]
Allows you to disable or set the Azalia HDA controller.
Configuration options: [Disabled] [Auto]

Onboard LAN [Enabled]
Allows you to enable or disable the Onboard LAN.
Configuration options: [Disabled] [Enabled]

OnBoard LAN Boot ROM [Disabled]
Allows you to enable or disable the onboard LAN boot ROM.
Configuration options: [Disabled] [Enabled]

Serial Port1 Address [3F8/IRQ4]
Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]
[Auto]

ASUS K8V-XE motherboard   **2-25**

Parallel Port Address [378/IRQ7]
Allows you to select the Parallel Port base addresses.
Configuration options: [Disabled] [378/IRQ7] [278/IRQ5] [3BC/IRQ7]

Parallel Port Mode [ECP+EPP]
Allows you to select the Parallel Port mode.
Configuration options: [SPP] [EPP] [ECP] [ECP+EPP]

ECP Mode Use DMA [3]
Allows you to select the ECP Mode.
Configuration options: [1] [3]

Game Port Address [201]
Allows you to set the Game Port Address.
Configuration options: [Disabled] [201] [209]

Midi Port Address [330]
Allows you to set the Midi Port Address.
Configuration options: [Disabled] [330] [300]

Midi Port IRQ [10]
Allows you to set the Midi Port IRQ.
Configuration options: [5] [10]

2.4.6   USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.

```
                  Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                                                        Select Menu
              USB Configuration
 USB Controller              [Enabled]        Item Specific Help
 USB 2.0 Controller          [Enabled]
 USB Legacy support          [Auto]
```
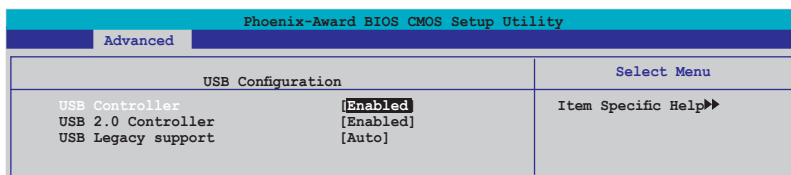
USB Controller [Enabled]
Allows you to enable or disable the USB controller.
Configuration options: [Enabled] [Disabled]

USB 2.0 Controller [Enabled]
Allows you to enable or disable the USB 2.0 controller.
Configuration options: [Disabled] [Enabled]

USB Legacy Support [Auto]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). Configuration options: [Auto] [Disabled] [Enabled]

2.5 Power menu

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.

```
                    Phoenix-Award BIOS CMOS Setup Utility
     Main   Advanced   Power   Boot   Exit

       ACPI Suspend Type          [S1&S3]              Select Menu
       ACPI APIC support          [Enabled]
    ▶  APM Configuration                             Item Specific Help▶
    ▶  Hardware Monitor



     F1:Help          ↑↓ : Select Item      -/+: Change Value       F5: Setup Defaults
     ESC: Exit         →←: Select Menu      Enter: Select Sub-menu   F10: Save and Exit
```
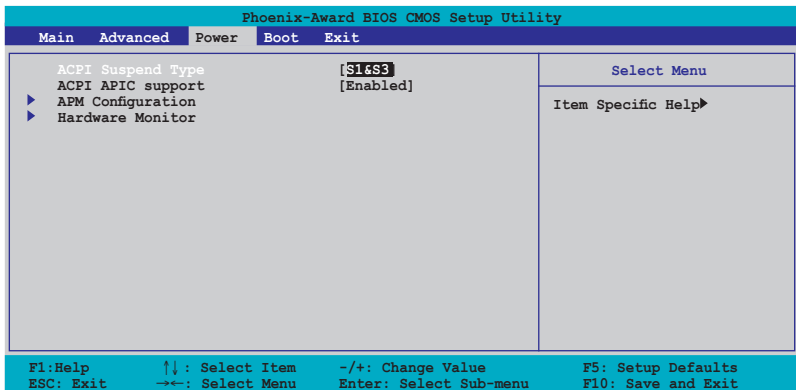
2.5.1 ACPI Suspend Type [S1&S3]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend. Configuration options: [S1 (POS)] [S3(STR)] [S1&S3]

2.5.2 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

2.5.3   APM Configuration

```
              Phoenix-Award BIOS CMOS Setup Utility
                    Power

           APM Configuration                        Select Menu

     Power On By PS2 KB          [Disable ]         Item Specific Help
     Power On By PS2 MS          [Disabled]
     Power On By PCI Devices     [Disabled]
     Power On By Ecternal Modem  [Disabled]
     Power On By On-board LAN    [Disabled]
     Power On By RTC Alarm       [Disabled]
  x  Date (of Month) Alarm            0
  x  Alarm Time (hh:mm:ss) Alarm   0 :0 : 0
     Restore on AC Power Loss    [Power Off]
     PWR Button < 4 secs         [Instant-Off]




  F1:Help        ↑↓ : Select Item    -/+: Change Value      F5: Setup Defaults
  ESC: Exit      →←: Select Menu    Enter: Select Sub-menu   F10: Save and Exit
```

Power On By PS2 KB [Disable]
Allows you to disable the Power On by PS/2 keyboard function or set specific
keys on the PS/2 keyboard to turn on the system. This feature requires an ATX
power supply that provides at least 1A on the +5VSB lead. Configuration options:
[Disabled] [Space Bar] [Ctrl+ESC] [Power Key]

Power On By PS2 MS [Disabled]
When set to [Enabled], this parameter allows you to use the PS/2 mouse to turn on
the system. This feature requires an ATX power supply that provides at least 1A on
the +5VSB lead. Configuration options: [Disabled] [Enabled]

Power On By PCI Devices [Disabled]
Allows you to disable or enable the Power On By PCI Devices. This feature
requires an ATX power supply that provides at least 1A on the +5VSB lead.
Configuration options: [Disabled] [Enabled]

Power On by External Modem [Disabled]
Allows you to disable or enable the Power On by External Modem. This feature
requires an ATX power supply that provides at least 1A on the +5VSB lead.
Configuration options: [Disabled] [Enabled]

Power On By On-board LAN [Disabled]
Allows you to disable or enable the Power On by On-board LAN function. This
feature requires an ATX power supply that provides at least 1A on the +5VSB lead.
 Configuration options: [Disabled] [Enabled]

Power On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items Date (of Month) and Resume Time (hh:mm:ss) become configurable with set values. Configuration options: [Disabled] [Enabled]

Restore on AC Power Loss [Power Off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.
Configuration options: [Power Off] [Power On] [Last State]

PWR Button < 4 secs [Instant-Off]

Allows you to set the event after the power button is pressed for more than 4 seconds. Configuration options: [Suspend] [Instant-Off]

2.5.4   Hardware Monitor

The items in this sub-menu displays the hardware monitor values automatically detected by the BIOS. Select an item then press <Enter> to display the configuration options.

```
                  Phoenix-Award BIOS CMOS Setup Utility
                 Power

              Hardware Monitor                     Select Menu

   Vcore Voltage                [  1.64V]
   3.3V Voltage                 [  3.24V]        Item Specific Help
   5V Voltage                   [  5.21V]
   12V Voltage                  [ 11.71V]        Press [Enter] to set.

   CPU Temperature              57°C
   M/B Temperature              35°C
   CPU Fan speed                4265 RPM
   Chassis Fan speed               0 RPM
   CPU Fan Speed warning        [ 800 RPM]



   F1:Help          ↑↓ : Select Item    -/+: Change Value     F5: Setup Defaults
   ESC: Exit        →←: Select Menu      Enter: Select Sub-menu   F10: Save and Exit
```

VCORE Voltage, 12V Voltage, 3.3V Voltage, 5V Voltage[xx.xºC] or [Ignored]

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select [Ignored] if you do not want to display the detected temperatures.

CPU Temperature
M/B Temperature

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. These items are not user-configurable

CPU Fan Speed
Chassis Fan Speed

The onboard hardware monitor automatically detects and displays the Chassis, CPU, and Power fan speeds in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows 0. These items are not user-configurable.

CPU Fan Speed warning [800 RPM]

Allows you to set the CPU fan warning speed.
Configuration options: [Disabled] [800 RPM] [1200 RPM] [1600 RPM]

2.6   Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.

```
                     Phoenix-Award BIOS CMOS Setup Utility
     Main   Advanced   Power   Boot   Exit

  ▶  Boot Device Priority                            Select Menu
  ▶  Removable Drives
  ▶  Hard Disk Drives                         Item Specific Help▶
  ▶  Boot Settings Configuration
  ▶  Security                                 Select Boot Device

                                             Priority




     F1:Help          ↑↓ : Select Item    -/+: Change Value     F5: Setup Defaults
     ESC: Exit        →←: Select Menu      Enter: Select Sub-menu  F10: Save and Exit
```
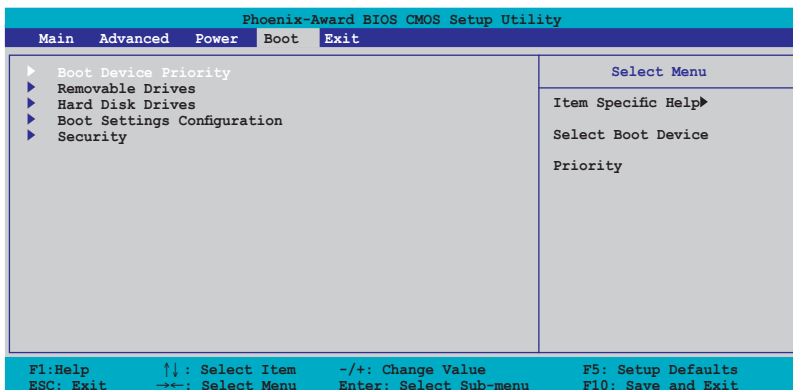
2.6.1 Boot Device Priority

```
                Phoenix-Award BIOS CMOS Setup Utility
        Power
   ┌─────────────────────────────────────────────┬──────────────────────┐
   │        Boot Device Priority                  │   Select Menu        │
   │  1st Boot Device            [Removable]      │ Item Specific Help▶▶ │
   │  2nd Boot Device            [Hard Disk]      │                      │
   │  3rd Boot Device            [CDROM           │ Select your boot     │
   │  4th Boot Device            [Disabled]       │ device priority      │
   │                                              │                      │
   └─────────────────────────────────────────────┴──────────────────────┘
```

1st ~ xxth Boot Device [Removable]

These items specify the boot device priority sequence from the available devices.
The number of device items that appears on the screen depends on the number of
devices installed in the system.
Configuration options: [Removable] [xxxxx Drive] [Disabled]

2.6.2 Removable Drives

```
                Phoenix-Award BIOS CMOS Setup Utility
            Boot
   ┌─────────────────────────────────────────────┬──────────────────────┐
   │          Removable Drives                    │   Select Menu        │
   │  1. Floppy Disks                             │ Item Specific Help▶▶ │
   │                                              │                      │
   └─────────────────────────────────────────────┴──────────────────────┘
```

1. Floppy Disks

Allows you to select a removable drive attached to the system.

2.6.3 Hard Disk Drives

```
                Phoenix-Award BIOS CMOS Setup Utility
            Boot
   ┌─────────────────────────────────────────────┬──────────────────────┐
   │          Removable Drives                    │   Select Menu        │
   │  1. Bootable Add-in Cards                    │ Item Specific Help▶▶ │
   │                                              │                      │
   │                                              │                      │
   │                                              │                      │
   └─────────────────────────────────────────────┴──────────────────────┘
```

1. Bootable Add-in Cards

Allows you to select an add-in disk drive attached to the system.

2.6.4   Boot Settings Configuration

```
                 Phoenix-Award BIOS CMOS Setup Utility
                                 Boot

              Boot Settings Configuration                    Select Menu

        Quick Boot                    [Enabled  ]        Item Specific Help▶▶
        Boot Up Floppy Seek           [Disabled]
        Bootup Num-Lock               [On]               Press [Enter] to
        Typematic Rate Setting        [Disabled]         enable or disable.
     x  Typematic Rate (Chars/Sec)     6
     x  Typematic Delay (Msec)         250
        OS Select For DRAM > 64MB     [Non-OS2]
        Full Screen LOGO              [Enabled]
        Halt On                       [All, But Keyboard]

```

Quick Boot [Enabled]

Enables or disables the quick boot feature. When Enabled, the system skips certain tests while booting. Configuration options: [Disabled] [Enabled]

Boot Up Floppy Seek [Disabled]

Enable this item to check for a boot floppy disk during POST.
Configuration options: [Disabled] [Enabled]

> The items Typematic Rate (Chars/Sec) and Typematic Delay (Msec) becomes user-configurable only when the item Typematic Rate Setting is enabled.

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

Typematic Rate Setting [Disabled]

Allows you to set the keystroke rate. Enable this item to configure the Typematic Rate (Chars/Sec) and the Typematic Delay (Msec).
Configuration options: [Disabled] [Enabled]

OS Select for DRAM > 64MB [Non-OS2]

Set this item to OS2 only when you are running on an OS/2 operating system with an installed RAM of greater than 64 KB. Configuration options: [Non-OS2] [OS2]

Full Screen LOGO [Enabled]

Allows you to enable or disable the full screen logo display feature. Configuration options: [Disabled] [Enabled]

✎ Make sure that the above item is set to [Enabled] if you want to use the ASUS MyLogo™ feature.

Halt On [All, But Keyboard]

Allows you to error report type.
Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

2.6.5 Security

```
                    Phoenix-Award BIOS CMOS Setup Utility
                              Boot

            Boot Settings Configuration              Select Menu

  Supervisor Password            Clear          Item Specific Help▶▶
  User Password                  Clear
  Password Check                 [Setup]        Supervisor password
                                                controls full access,
                                                <Enter> to change
                                                password.
```

Supervisor Password
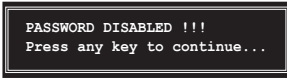## User Password

These fields allow you to set passwords:

To set a password:

1. Select an item then press <Enter>.

2. Type in a password using a combination of a maximum of eight (8) alpha-numeric characters, then press <Enter>.

3. When prompted, confirm the password by typing the exact characters again, then press <Enter>. The password field setting is changed to Set.

To clear the password:

1. Select the password field and press <Enter> twice. The following message appears:

```
PASSWORD DISABLED !!!
Press any key to continue...
```

2. Press any key to continue. The password field setting is changed to Clear.

A note about passwords

The Supervisor password is required to enter the BIOS Setup program preventing unauthorized access. The User password is required to boot the system preventing unauthorized use.
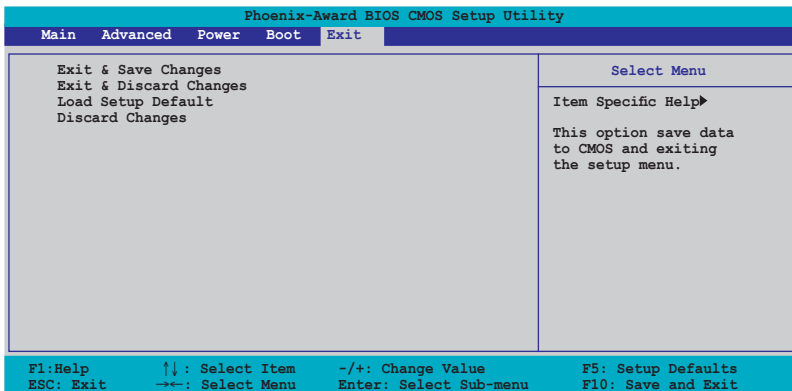
Forgot your password?

If you forget your password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. The RAM data containing the password information is powered by the onboard button cell battery. If you need to erase the CMOS RAM, refer to section "1.9 Jumpers" for instructions.

Password Check

This field requires you to enter the password before entering the BIOS setup or the system. Select [Setup] to require the password before entering the BIOS Setup. Select [System] to require the password before entering the system. Configuration options: [Setup] [System]

2.7 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.

```
                     Phoenix-Award BIOS CMOS Setup Utility
   Main   Advanced   Power   Boot   Exit

     Exit & Save Changes                              Select Menu
     Exit & Discard Changes
     Load Setup Default                          Item Specific Help▶
     Discard Changes
                                                 This option save data
                                                 to CMOS and exiting
                                                 the setup menu.




   F1:Help         ↑↓ : Select Item    -/+: Change Value      F5: Setup Defaults
   ESC: Exit       →←: Select Menu     Enter: Select Sub-menu  F10: Save and Exit
```

> Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select Yes to save changes and exit.

> If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select Yes to load default values. Select **Exit & Save** Changes or make other changes before saving the values to the non-volatile RAM.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select **Yes** to discard any changes and load the previously saved values.

Chapter 3

This chapter describes the contents of the support CD that comes with the motherboard package.

Software support

3.1 Install an operating system

This motherboard supports Windows® 98SE/ME/2000/XP operating system (OS). Always install the latest OS version and corresponding updates to maximize the features of your hardware.

> Motherboard settings and hardware options vary, so use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

3.2 Support CD information

The support CD that came with the motherboard contains useful software and several utility drivers that enhance the motherboard features.

> The contents of the support CD are subject to change at any time without notice. Visit the ASUS website for updates.

3.2.1 Running the support CD

To begin using the support CD, simply insert the CD into your CD-ROM drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer. Click on an item to install.
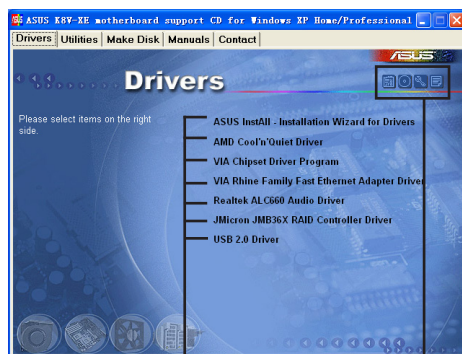
Click an item to install   **Click an icon to display more information**

> If **Autorun** is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the **ASSETUP.EXE** to run the CD.

3.2.2 Drivers menu

The drivers menu shows the available device drivers if the system detects installed devices. Install the necessary drivers to activate the devices.
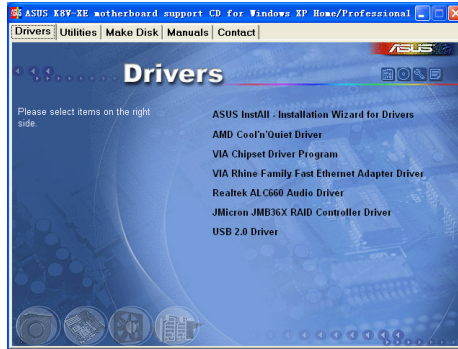
For Windows® XP users, make sure to install Windows® XP Service Pack 1 or later to support USB 2.0.

ASUS InstALL- Installation Wizard for Drivers

Installs the ASUS InstALL- Installation Wizard for drivers.

AMD Cool 'n' Quiet Driver

Installs the AMD Cool 'n' Quiet driver.

VIA Chipset Driver Program

Installs the VIA Chipset Driver Program.

VIA Rhine Family Fast Ethernet Adapter Driver

Installs the VIA Rhine Family Fast Ethernet Adapter driver.

Realtek ALC660 Audio Driver

Installs the USB 2.0 driver to upgrade your USB 1.1 ports to USB 2.0.

JMicron JMB36X RAID Controller Driver

Installs the USB 2.0 driver to upgrade your USB 1.1 ports to USB 2.0.

USB 2.0 Driver

Installs the USB 2.0 driver to upgrade your USB 1.1 ports to USB 2.0.

3.2.3 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.

ASUS InstALL- Installation Wizard for Utilities

Installs the ASUS InstALL- Installation Wizard for utilities.

ASUS PC Probe II

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

ASUS Update

This program allows you to download the latest version of the BIOS from the ASUS website. Before using the ASUS Update, make sure that you have an Internet connection so you can connect to the ASUS website. Installing ASUS Update also installs ASUS Mylogo™.

ASUA Cool 'n' Quiet Software

Installs the ASUS AMD® Cool 'n' Quiet software.

ASUS Screen Saver

Installs the ASUS screen saver.

Acrobat Reader

Installs the Adobe Acrobat® Reader V7.0. The Acrobat® Reader software is for viewing files saved in Portable Document Format (PDF).
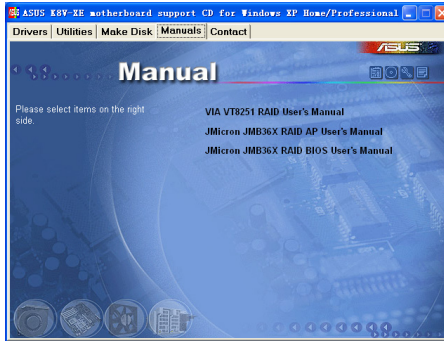
Microsoft DirectX Driver

Installs the Microsoft DirectX™driver.

Anti-virus Utility

The anti-virus application scans, identifies, and removes computer viruses. View the online help for detailed information.

3.2.4   Manual menu

The Manual menu contains a list of supplementary user manuals. Click an item to open the manual.

Install the Adobe® Acrobat® Reader from the Utilities menu to open the manual files in PDF.

3.2.5   ASUS Contact Information

Clicking the ASUS Contact Information tab displays as stated. You may also find this information on the inside front cover of this user guide.
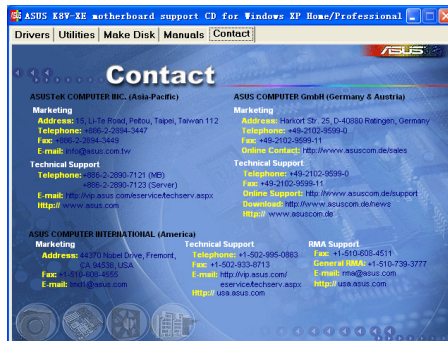
3.3 RAID configurations

The motherboard comes with the following RAID solutions:
- The VIA VT8251 southbridge chipset comes with a built-in SATA RAID controller that allows you to configure RAID 0, RAID 1, RAID 0+1 and JBOD with four SATA hard disk drives.
- The JMicron chipset comes with a built-in SATA RAID controller that allows you to configure RAID 0, RAID 1, and JBOD with two SATA hard disk drivers.

RAID 0 (called data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage.

RAID 0+1 is data striping and data mirroring combined without parity (redundancy data) having to be calculated and written. With the RAID 0+1 configuration you get all the benefits of both RAID 0 and RAID 1 configurations. Use four new hard disk drives or use an existing drive and three new drives for this setup.

RAID 1 (called data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system.

JBOD (Spanning) stands for Just a Bunch of Disks and refers to hard disk drives that are not yet configured as a RAID set. This configuration stores the same data redundantly on multiple disks that appear as a single disk on the operating system. Spanning does not deliver any advantage over using separate disks independently and does not provide fault tolerance or other RAID performance benefits.

> If you use either Windows® XP or Windows® 2000 operating system (OS), copy first the RAID driver from the support CD to a floppy disk before creating RAID configurations. Refer to section "3.5 Creating a RAID driver disk" for details.

3.3.1 Installing hard disks

The motherboard supports Serial ATA hard disk drives. For optimal performance, install identical drives of the same model and capacity when creating a disk array.

> - If you are creating a **RAID 0 (striping)** array for performance, use two new drives.
> - If you are creating a **RAID 1 (mirroring)** array for protection, you can use two new drives or use an existing drive and a new drive (the new drive must be of the same size or larger than the existing drive).

Installing Serial ATA (SATA) hard disks

To install the SATA hard disks for RAID configuration:

1. Install the Serial ATA hard disks into the drive bays.
2. Connect the Serial ATA signal cables.
3. Connect the SATA power cable to the power connector on each drive.

3.3.2   VIA RAID configurations

The motherboard includes a high performance SATA RAID controller integrated in the VIA VT8251 chipset. It supports RAID 0, RAID 1, RAID 0+1, and JBOD configurations. Use the VIA RAID utility to configure a disk array.

Setting BIOS RAID items

After installing the hard disk drives, make sure to set the necessary RAID items in the BIOS before setting your RAID configuration.

To set the BIOS RAID items:

1. Boot the system and press **<Del>** during the Power-On Self-Test (POST) to enter the BIOS Setup Utility.
2. Go to the **Advanced > Onboard Devices Configuration > SATA Controller Mode** menu item in the BIOS.
3. Make sure that the **SATA Controller Mode** item is set to **RAID**.
4. Save your changes and Exit Setup.

Entering VIA RAID BIOS Utility

To enter the VIA RAID BIOS utility:

1. Boot your computer.
2. During POST, press **<Tab>** to enter the VIA RAID configuration utility.

> For detailed descriptions on the VIA RAID configuration, refer to the "VIA VT8251 RAID User's Manual" found in the Manual menu of your motherboard support CD. See page 3-5.

3.3.3 JMicron RAID configurations

The JMicron RAID controller supports RAID 0 and RAID 1 configurations. Use the JMicron RAID utility to configure a disk array.

Setting BIOS RAID items

After installing the hard disk drives, make sure to set the necessary RAID items in the BIOS before setting your RAID configuration.

To set the BIOS RAID items:

1. Boot the system and press **<Del>** during the Power-On Self-Test (POST) to enter the BIOS Setup Utility.

2. Go to the **Advanced > Onboard Devices Configuration > JMicron RAID controller** menu item in the BIOS.

3. Make sure that the **JMicron RAID controller** item is set to **RAID**.

4. Save your changes and Exit Setup.

Entering JMicron RAID BIOS Utility

To enter the JMicron RAID BIOS utility:

1. Boot your computer.

2. During POST, press **<Ctrl> + J** to enter the JMicron RAID configuration utility.

> For detailed descriptions on the JMicron RAID configuration, refer to the "JMicron JMB36X RAID BIOS User's Manual" found in the Manual menu of your motherboard support CD. See page 3-5.

3.4 Creating a RAID driver disk

A floppy disk with a RAID driver is required when installing Windows® XP/2000 operating system. You can create a RAID driver disk using Makedisk.exe utility.

To create a RAID driver disk:

1. Insert the motherboard support CD into the CD-ROM drive and locate the Makedisk.exe utility for your RAID controller. The Makedisk.exe utility for the VIA RAID driver is located in **\Drivers\VIARAID\6420RAID\DriverDisk\Makedisk.exe"** of the motherboard support CD.

2. Insert a clean floppy disk into the floppy disk drive and execute Makedisk.exe. Follow succeeding screen instructions to complete the process.

3. Write-protect the floppy disk to avoid computer virus infection.

To install the RAID driver:

1. During the OS installation, the system prompts to press the **F6** key to install third-party SCSI or RAID driver.

2. Press **<F6>** then insert the floppy disk with RAID driver into the floppy disk drive.

3. Follow the succeeding screen instructions to complete the installation.

For additional information on VIA and JMicron RAID installation and configuration, refer to the "VIA VT8251 RAID User's Manual" and "JMicron JMB36X RAID BIOS User's Manual"found in the Manual menu of your motherboard support CD. See page 3-5.

3.5   Cool 'n' Quiet!™ Technology

The motherboard supports the AMD Cool 'n' Quiet!™ Technology that dynamically and automatically change the CPU speed, voltage and amount of power depending on the task the CPU performs.

3.5.1   Enabling Cool 'n' Quiet!™ Technology

To enable Cool 'n' Quiet!™ technology:

1.   Turn on the system and enter BIOS by pressing the **<Del>** key during the Power On Self-Tests (POST).

2.   In the **Advanced > CPU Configuration** menu, select the item **AMD K8 Cool 'N'Quiet** and set it to **Enabled**. See section "2.4 Advanced Menu" for details.

3.   Save your changes and exit BIOS Setup.

4.   Reboot your computer and set your Power Option Properties depending on your operating system.

Windows® 2000/XP:

1.   From the Windows® 2000/XP operating system, click the **Start** button. Select **Settings**, then **Control Panel**.

2.   Make sure the Control Panel is set to Classic View.

3.   Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.

4.   Click the **Power...** button. The following dialog box appears.

5.   From the **Power schemes** combo list box, select **Minimal Power Management**.

6.   Click **OK** to effect settings.
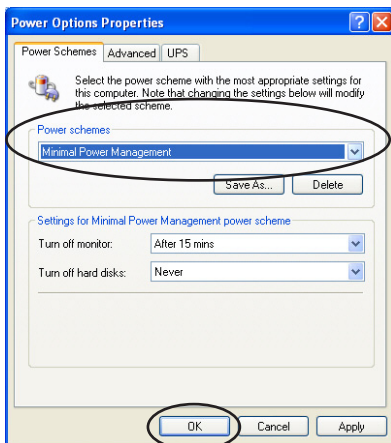
Make sure to install the Cool 'n' Quiet!™ driver and application when using this feature.

Windows® 98SE/ME:

1. From the Windows® 98SE/ME operating system, click the **Start** button. Select **Settings**, then **Control Panel**.

2. Double-click the **Display** icon in the Control Panel then select the **Screen Saver** tab.

3. From the **Energy saving features of monitor** group, click the **Settings...** button.
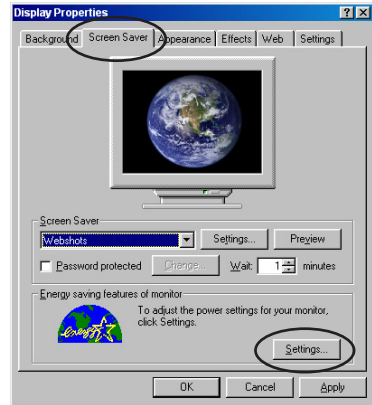
4. From the **Power Options Properties** dialog box, select the **AMD's Cool 'n' Quiet(tm) Technology** tab.

5. Click the **Performance** combo list box to select desired mode. Automatic Mode is the recommended setting.

6. Click **OK** to effect settings.
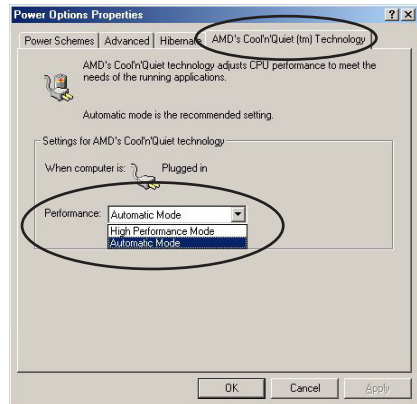
• Make sure to install the AMD Cool 'n' Quiet!™ driver and application before using this feature.

• The AMD Cool 'n' Quiet!™ Technology feature works only with the AMD heatsink and fan assembly with monitor chip.

3.5.2 Launching the Cool 'n' Quiet!™ software

The motherboard support CD includes the Cool 'n' Quiet!™ software that enables you to view your system's real-time CPU frequency and voltage.

> Make sure to install the Cool 'n' Quiet!™ software from the motherboard support CD. Refer to section "3.2.3 Utilities" for details.

To launch the Cool 'n' Quiet!™ program:

1. If you are using Windows® 98SE/ME/2000, click the **Start** button. Select **Programs > ASUS > Cool & Quiet > Cool & Quiet.**

2. If you are using Windows® XP, click the **Start** button. Select **All Programs > ASUS > Cool & Quiet > Cool & Quiet.**

3. The Cool 'n' Quiet!™ technology screen appears and displays the current CPU Frequency and CPU Voltage.

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