

IWILL KK400 Series Motherboard User's Manual

KK400 Series Version 1.0
FB23581000

Federal Communications Commission (FCC) Statement

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

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

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

Declaration of Conformity

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

- This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

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What's In This Chapter:

Introduction
Manual Structure
Manual Features
Critical Topics
Packing List
Pre-Use Checklist

1: Introduction

This is the User's Manual for the KK400 Series motherboards. Anything in this manual that only applies to one board is clearly noted. Please read this chapter before you use your motherboard and identify which parts of the manual you will need to refer to. Please pay particular attention to the Critical Topics section.

Manual Structure

This manual has seven chapters covering the following topics:

Chapter 1: Introduction

Explains the manual structure and conventions and indicates the most important topics in the manual. In addition, there is a list of what you should find in the motherboard package and some pointers on things to do before you configure or install the board.

Chapter 2: Key Features & Components

Details the motherboard's hardware features and important components and indicates their locations. Describes the support software that comes with the board on the Power Installer support CD-ROM disc.

Chapter 3: Motherboard Configuration

Lists the motherboard's default configuration and configuration options.

Chapter 4: Installing The Motherboard

Has information on how to prepare and install the motherboard. Includes installing a CPU and system memory and housing installation considerations.

Chapter 5: System Configuration

Covers connecting system peripherals to the motherboard, initial BIOS configuration using the CMOS Setup utility, OS options and software installation.

Chapter 6: Using The Motherboard

Explains system operation features that derive from the motherboard. Has information on performance optimization and troubleshooting.

Chapter 7: Technical Information

Lists the motherboard's technical specifications.

Manual Features

This User's Manual is intended to be useful and informative while also making it easy to quickly find specific information or specifications. The manual has icons and notes in the sidebar to note important topics, indicate warnings or further explain and illustrate points. We suggest that most users review the manual to become familiar with the motherboard. Expert users may want to review topics selectively, as needed.

If The Motherboard Is Already Installed

You may receive the motherboard installed in a working system. If this is the case, you should still probably review the sections on configuring and using the board, especially if an Operating System is not installed yet.

If You Need To Install This Motherboard

We recommend that only experienced users and technicians install this motherboard. Otherwise, we suggest having a qualified computer technician install and configure the system. This service is usually provided at a nominal fee by better computer stores and service companies.

Critical Topics

Many users do not read through the entire User's Manual. While this may not be necessary for experienced users or if the motherboard is already installed, there are some topics which are particularly important and deserve your specific attention. Some topics cover information critical to the proper installation and use of the motherboard.

For this motherboard, please review the sections on the following topics:

- CPU installation & upgrading
Please see Chapter 4.
- System memory installation & upgrading
Please see Chapter 4.
- Serial-ATA installation
Please see Chapter 4.
- AGP card installation
Please see Chapter 5.
- Required BIOS configuration
Please see Chapter 5.
- Support software installation
Please see Chapter 5.

Packing List

The motherboard package includes the following items:

- KK400 Series motherboard
- Rear I/O panel shield
- ATA-66/100 IDE connector cable
Connects IDE devices running in any mode up to ATA-100 to one of the onboard IDE connectors.
- Serial-ATA connector cable (KK400-RS only)
Connects a Serial-ATA device to the onboard Serial-ATA connector.
- Floppy Disk Drive connector cable
Connects floppy disk drives to the onboard floppy disk connector.
- 3 Jumper Caps
Extra caps in case original caps are lost.
- Power Installer support CD-ROM disc
Includes support software, drivers and bundled software utilities.
- User's Manual

Pre-Use Checklist

Before you install and use the motherboard, please do the following:

- Check Package Contents
Please compare the package contents to the Packing List on the previous page and confirm that all items are present and undamaged.
- Missing or Damaged Accessories
If anything is missing, please contact your vendor.
- Motherboard Damage
If the motherboard has been visibly damaged, return the complete package to your vendor with proof of purchase.

- Prepare Minimum System Components

If you are installing the board in a new system, you'll need at least the following internal components;

- AMD Duron, Athlon or Athlon XP processor
- At least one DDR SDRAM memory module
- Desired storage devices (hard disk, CD-ROM, etc.)

You will also need whatever external system peripherals you intend to use, which will normally include at least a keyboard, a pointing device and a video display monitor.

Hardware Options

The KK400 Series of motherboards have some hardware options you can purchase separately:

- FI Panel

A front panel extender that mounts in a 5¼-inch drive bay in the system housing. The FI Panel provides Compact Flash card, Memory Stick and Secure Digital card readers as well as additional audio and USB ports.

- 6 Channel Audio Port Brackets (All models)

Two types of audio port bracket are available to provide additional connectors for the onboard 5.1 audio subsystem.

KK400 Series Models:

	Serial-ATA	RAID	FI Panel
KK400	x	x	Optional
KK400-RS	•	•	Optional

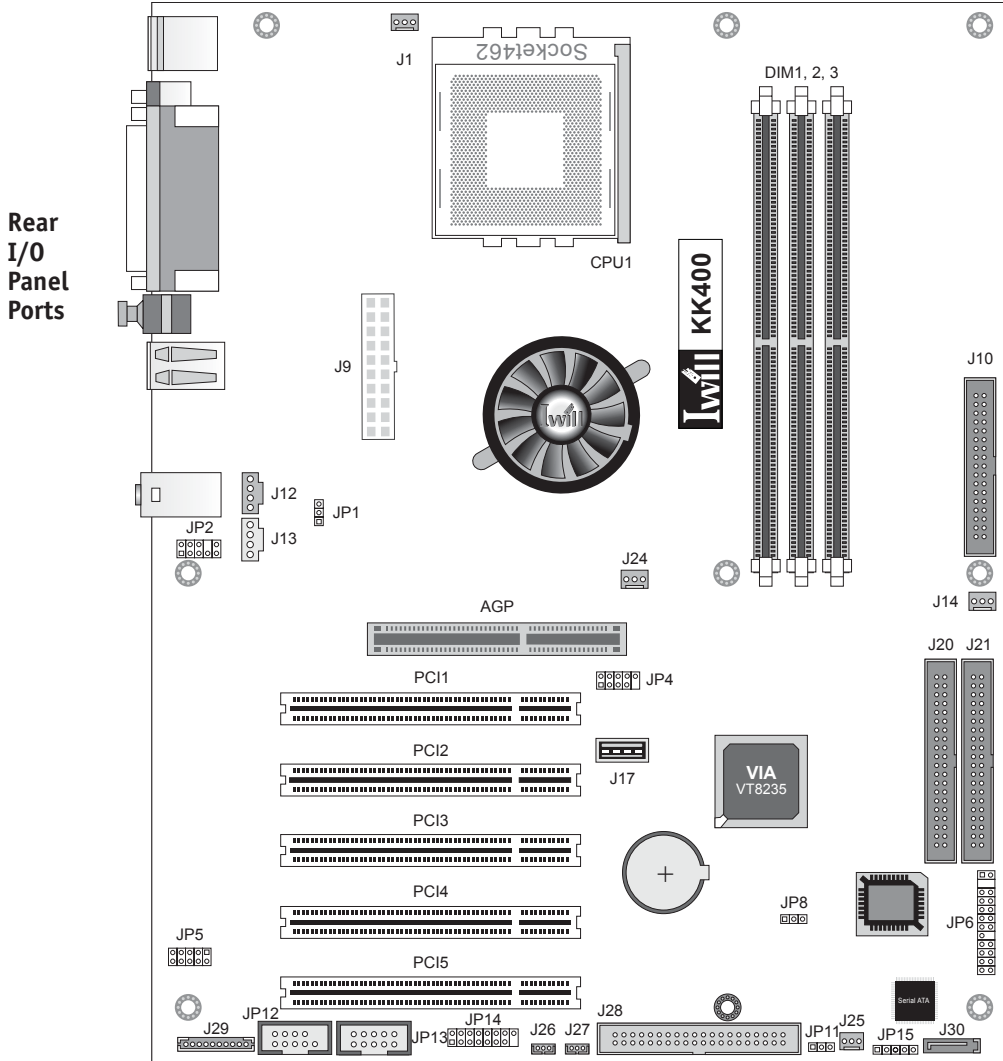
• = has feature x = does not have feature

Chapter Topics:**Hardware Features****Motherboard Layout****Key Features & Components****Software Features****Driver Software****Utility Software****2: Key Features & Components**

This chapter explains the location and function of this motherboard's key features and components. In addition, it details the software that comes on the Power Installer support CD-ROM disc. Please review this chapter if you are installing the motherboard. It is also useful for reference regarding feature functions after the board is installed in a working system.

Motherboard Layout

The diagram and key on these two pages shows the location of key components on the motherboard.



Motherboard Layout Key

[KK400-RS shown – no Serial-ATA or RAID connectors on KK400.]

Component	Function
CPU1	Socket462 AMD CPU socket
J9	Main power connector for ATX power supply
DIM1, 2, 3	DIMM memory sockets for DDR SDRAM modules
AGP	AGP connector for 1.5V AGP 4X or 8X display card
PCI 1 – 5	32-bit PCI expansion slots
J17	Onboard internal USB 2.0 port

Connectors

J20, J21	IDE1, IDE2 IDE drive connectors
J28	Highpoint IDE RAID drive connector
J30	Serial-ATA drive connector
J10	Floppy disk drive connector
J1	CPU cooling fan power connector
J14, 25	Housing cooling fan connectors
JP12	COM2 port bracket connector
JP14	Game/MIDI port bracket connector
JP5	IR port module connector
J12	CD-In CD-ROM drive audio-in connector
J13	AUX – auxiliary audio-in connector
JP6	Housing front panel feature connector
JP13	Smart Card Reader connector
J26	Wake On LAN connector
J27	Wake On Modem connector

FI Panel Connectors (Can also be used individually)

JP2	FI Panel audio feature connector
J29	Memory Stick/Secure Digital card reader connector
JP4	USB 2.0 ports 4 & 5 connector

Jumpers

JP8	Clear CMOS jumper
JP1	Frontside Bus Clock

Rear panel I/O ports See figure on next page

Rear I/O Panel Ports:

This figure show the ports on the rear I/O panel. The ports include, from top to bottom:

PS/2 ports

Serial, Parallel ports

Rear audio jack

Center/Subwoofer jack

S/PDIF audio port

Three USB ports

Audio ports

The ports have standard color-coding as follows:

PS/2 Keyboard: Purple

PS/2 Mouse: Green

Serial Port: Teal

Parallel Port: Burgundy

Rear Jack: Black

Center/Subw. Jack: Orange

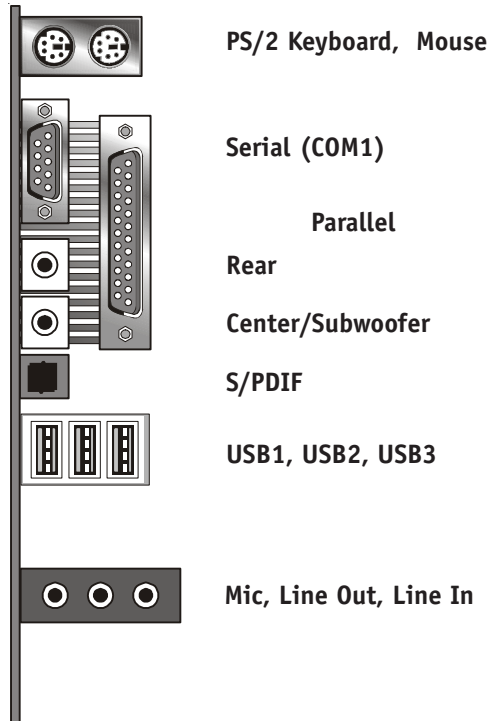
SP/DIF Connector: Black

USB Ports: Black

Mic In Jack: Pink

Line Out Jack: Lime

Line In Jack: Light Blue



Key Features & Components

This section explains the function and use of key features and components on the motherboard. It also indicates where to look in the manual for additional information on configuring and using them.

This motherboard uses an ATX form factor PCB in a design that integrates many features onto the board including several external ports.

VIA KT400 Chipset

The KK400 Series motherboards use the VIA KT400 chipset, a multi-function chipset for higher-end performance and mainstream systems.

The components of the chipset include the following devices mounted on the board:

- North Bridge: KT400
- South Bridge: VT8235

The chipset provides host bus, memory, AGP, and I/O interfaces including USB 2.0.

Winbond Super I/O

The KK400 Series motherboards use the Winbond W83637HF Super I/O controller chip, which includes the following features:

- Hardware monitor
- Memory Stick/Secure Digital interface
- Smart Card interface

Highpoint HPT371 IDE RAID (KK400-RS)

The KK400-RS motherboard also has a Highpoint HPT371 IDE RAID controller chip, which has the following functions:

- Provides one additional IDE channel with support for two additional IDE devices
- Supports RAID levels 0 and 1
- Requires ATA-100 IDE ribbon cables (one supplied)

Serial ATA (KK400-RS)

The KK400-RS motherboard also has a Marvel 88i8030 Serial-ATA controller chip, which has the following functions:

- Supports Serial-ATA interface devices
- Has one connector onboard for one device
- Uses standard Serial-ATA cables (one supplied)

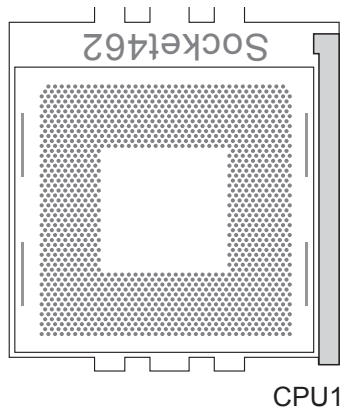
CPU Socket

Function: The system CPU installs in this socket.

Description: The Socket 462 CPU socket supports all 462-pin AMD CPUs including Duron, Athlon and Athlon XP.

More Information: See the section in Chapter 4 on “Installing CPUs” for information supported CPUs and their installation procedure. Technical specifications are listed in Chapter 7.

Socket462:
This socket is for 462-pin AMD CPUs only.



System Memory Sockets

Function: The DIMM system memory sockets are for installing DDR SDRAM system memory modules.

Description: There are three DIMM memory module sockets on the motherboard. These sockets are for 200MHz (PC1600), 266MHz (PC2100), 333MHz (PC2700) and 400MHz (PC3200) DDR SDRAM memory modules. The sockets function independently, allowing a variety of memory configurations up to a total of 3GB.

More Information: See the section on Installing System Memory in Chapter 4 for configuration specifications and installation instructions. Technical specifications are listed in Chapter 7.

DIMM Sockets:

System memory sockets are for:

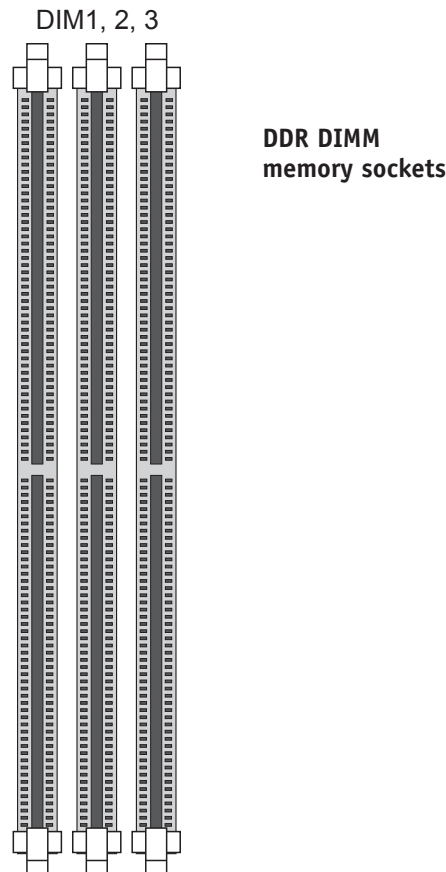
- PC1600: 200MHz
- PC2100: 266MHz
- PC2700: 333MHz
- PC3200: 400MHz

unbuffered DDR SDRAM modules.

See Chapter 4 for important installation information.

NOTE:

You can only install PC3200 memory in DIMM sockets 1 & 3 or 2 & 3. You can not use sockets 1 & 2.



The AGP Slot

Function: The AGP slot is for installing an AGP interface video display card.

Description: The AGP slot is a high-speed slot exclusively designed for an AGP video display card. The AGP slot supports the following type of AGP card:

- AGP 4X – maximum 1GB/second data throughput
- AGP 8X – maximum 2GB/second data throughput

The slot only supports 1.5V devices. Do not use a 3.3V AGP card with this motherboard.

More Information: See the section “Connecting & Installing Internal Peripherals” in Chapter 4. Technical specifications are listed in Chapter 7. Also, see the Advanced Chipset Features section of “Configuring the CMOS Setup Utility” in Chapter 5 for information on setting the AGP memory aperture size.

AGP Slot:

For AGP 4X & 8X 1.5V cards only. Do not use 3.3V cards.



AGP slot is for a AGP 4X or 8X card

The KK400 series supports AGP 8X mode. It is not necessary to set the mode in the BIOS CMOS Setup Utility. The 4X setting supports both 4X and 8X mode.

PCI Expansion Slots

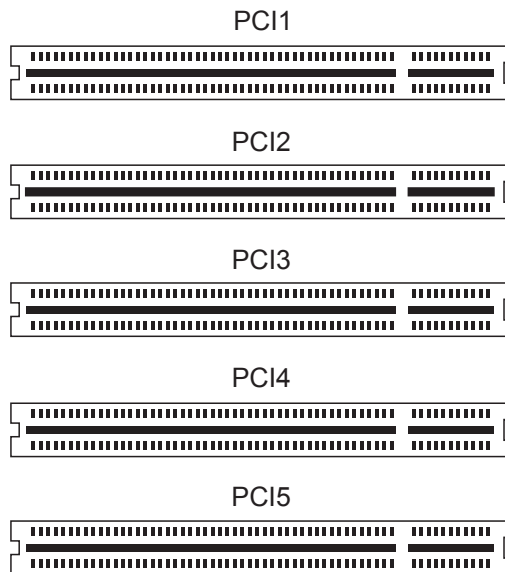
Function: The PCI expansion slots are for installing system expansion or “add-on” cards to add additional system hardware.

Description: This motherboard has five Bus Master capable PCI expansion slots. The slots are 32-bit, 33MHz slots and are PCI 2.2-compliant. The slots provide a fast high-bandwidth pathway between the motherboard and expansion cards.

More Information: See the section “Connecting & Installing Internal Peripherals” in Chapter 4. Technical specifications are listed in Chapter 7.

PCI Expansion Slots

All slots are Bus Master capable and PCI 2.2 compliant



PCI slots are numbered on the board

Drive Connectors

There are three drive connectors on the motherboard for connecting IDE and floppy disk drives.

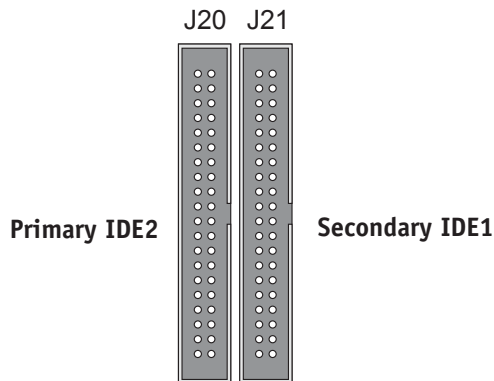
IDE Drive Connectors

Function: The two IDE connectors, marked 'J20' and 'J21', are for connecting IDE drives to the motherboard.

Description: The IDE controller on the motherboard supports IDE devices running in all modes up through ATA-133. There are two of these IDE drive connectors. J20 - IDE2 - is the Primary channel and J21 - IDE1 - is the Secondary channel. Each connector supports two drives, a 'Master' and a 'Slave' which connect to the motherboard with a ribbon cable. The ribbon cable supplied for these channels supports transfer modes through ATA-100.

More Information: See the section on "Connecting Internal Peripherals" in Chapter 5 for instructions on connecting IDE drives. Technical specifications are listed in Chapter 7.

IDE Drive Connectors
The channels are labeled on the board.



Floppy Disk Drive Connector

Function: The floppy disk drive connector, marked 'Floppy', is for connecting one floppy disk drive to the motherboard.

Description: The floppy disk drive connector supports connecting one floppy disk drive to the motherboard. The 'Floppy' drive connector uses a standard FDD ribbon cable. The floppy disk drive connected to the end of the cable will function as Drive A:. A second drive can be added as Drive B: if required.

More Information: See the section on "Connecting Internal Peripherals" in Chapter 4 for instructions on connecting a floppy disk drive. Technical specifications are listed in Chapter 7.

Floppy Drive Connector**J10**

Serial-ATA Drive Connector J30 (KK400-RS)

Function: This connector is for connecting a Serial-ATA hard disk drive to the motherboard.

Description: The Serial-ATA controller on the motherboard supports one Serial-ATA device. There is one Serial-ATA drive connector. The connector supports one drive, which connects to the motherboard with a Serial-ATA cable. The motherboard comes with a Serial-ATA cable.

More Information: See the section on “Connecting Internal Peripherals” in Chapter 5 for instructions on connecting IDE drives. Technical specifications are listed in Chapter 7.

SATA Drive Connector:
The connector supports one SATA hard disk drive.



Highpoint IDE RAID Drive Connector (KK400-RS)

Function: The IDE connector marked J28 is for connecting 2 IDE drives to the motherboard.

Description: The Highpoint HPT371 IDE RAID controller on the motherboard supports IDE devices running in all modes up through ATA-133. There is one IDE drive connectors supporting two drives, a ‘Master’ and a ‘Slave’ that connect to the motherboard with a suitable ribbon cable. The Highpoint controller supports RAID 0 and RAID 1 arrays.

More Information: See the section on “Connecting Internal Peripherals” in Chapter 5 for instructions on connecting IDE drives. Technical specifications are listed in Chapter 7.

IDE RAID Connector
RAID 0 and RAID 1 are supported.

J28



Other Internal Connectors

There are several other connectors on the motherboard.

ATX Power Connector

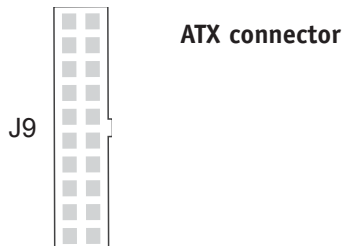
Function: Connector for lead from a system ATX power supply.

Description: There is one power connector on the motherboard for the lead from an ATX power supply. The power supply lead plugs into the connector. The connector designs prevent incorrect orientation. The connector is a standard 20-pin ATX connector.

More Information: Please refer to Chapter 4, “Installing the Board in a System Housing”. Chapter 7 lists technical specifications.

ATX Power Connectors:

An ATX power supply with two power leads is required for this board.



CPU & System Fan Connectors J1, J14, J24, J25

Function: Power connectors for CPU and system housing cooling fans.

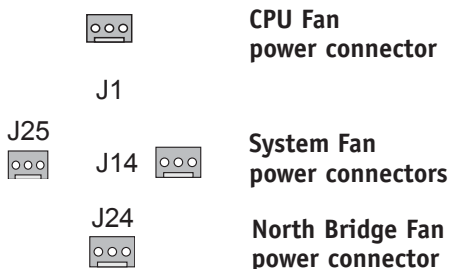
Description: There is one CPU cooling fan connector and two system housing cooling fan connectors on the motherboard. All the connectors are 3-pin headers.

Both the CPU and system fan connectors support fan speed monitoring.

A temperature monitor detects the CPU and internal system temperatures, which are displayed in the PC Health section of the CMOS Setup Utility. You can set a system shutdown temperature in that section that will automatically shut down the computer to protect the CPU if it reaches one of the three temperature options listed.

More Information: Please see the PC Health Status section of “Configuring the CMOS Setup Utility” in Chapter 5 for information.

Cooling Fan Connectors:
The cooling fan power connectors are 3-pin connectors.



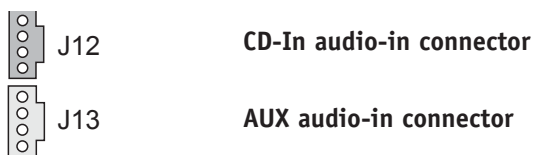
CD-In & AUX Audio Connectors J12 & J13

Function: Connectors for audio-in cables from internal peripherals.

Description: The two audio-in connectors on the motherboard are for audio cables from optical drives such as a CD-ROM or DVD-ROM drive. The connectors provide an audio input connection between a device and the integrated audio subsystem.

More Information: Please see the Connecting internal peripherals section in Chapter 5.

Audio-In Connectors:
The J12 CD-In connector is for CD-ROM or other optical drives. Use the J13 AUX connector for an additional drive.



Onboard USB Port Connector J17 & Connector JP4

Function: Connector for the additional two USB ports port bracket. J17 is an onboard internal USB 2.0 port.

Description: Connecting an external 2-port USB port bracket to JP4 provides two additional Hi-Speed USB 2.0 ports that have their own Root Hub.

J17 is a port mounted directly on the board for connecting internal USB 2.0 devices.

More Information: See the “Connecting Internal Peripherals” section of Chapter 5.

Other USB Ports:

Connecting a port bracket to JP4 provides two additional USB ports.

J17 is a single port for connecting internal devices.



JP4

JP4 USB port bracket pin-header connector



J17

J17 USB internal port

IR Connector JP5

Function: Connector for an Infrared (IR) port module.

Description: The IR connector supports both IrDA and ASKIR infrared port modules. Follow the module’s instructions to install it.

More Information: Please see the Integrated Peripherals section of “Configuring the CMOS Setup Utility” in Chapter 5 for information.

IR Connector JP5:

The IR connector is for both IrDA and ASKIR port modules. You must use the CMOS Setup Utility to configure the board to use the IR feature.



JP5 Pin1

IR connector JP5

Smartcard Reader Connector JP12

Function: Connector for a Smartcard reader module.

Description: A housing mounted Smartcard reader module plugs into to this connector.

More Information: See the “Connecting Internal Peripherals” and “Configuring the CMOS Setup Utility” sections in Chapter 5.

Smartcard Reader:

The connector cable from a Smartcard Reader module plugs into JP12.

JP12



JP12 Smartcard Reader connector

COM2 Port Connector JP13

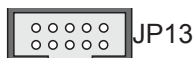
Function: Connector for a COM2 serial port.

Description: A port bracket-mounted COM2 serial port plugs into to this connector.

More Information: See the “Connecting Internal Peripherals” and “Configuring the CMOS Setup Utility” sections in Chapter 5.

COM2 Port Connector:

The connector cable from a COM2 port bracket plugs into JP13.



JP13 COM2 port connector

Game Port Connector JP14

Function: Connector for an external Game port.

Description: A port bracket-mounted Game port plugs into to this connector.

More Information: See the “Connecting Internal Peripherals” and “Configuring the CMOS Setup Utility” sections in Chapter 5.

Game Port Connector:

The connector cable from a Game port bracket plugs into JP14.

JP14



JP14 Game port connector

Memory Stick/Secure Digital Reader Connector J29

Function: Connector for a Memory Stick™ or Secure Digital™ memory card reader module.

Description: A housing-mounted reader module plugs into to this connector. Also used for the FI Panel.

More Information: See the “Connecting Internal Peripherals” and “Configuring the CMOS Setup Utility” sections in Chapter 5.

MS/SD Reader:

The connector cable from a MS/SD Reader module plugs into JP29.

This is also the connector for the FI Panel MS/SD reader.



J29 Memory Stick/Secure Digital Reader connector

WOL: Wake On LAN Connector J26

Function: A connector for the lead from a Network Interface Card that supports the Wake On LAN feature.

Description: This feature enables the system to “wake up” from Suspend mode when it receives a signal over a LAN it is connected to. It works with a PCI NIC that supports this feature by connecting the card to the WOL connector on the motherboard.

The motherboard supports Wake on LAN through a PCI bus signal. This signal will wake up the computer only when it is plugged into an AC power source and the system is in a supported suspend state.

More Information: Please see the Power Management Setup section of “Configuring the CMOS Setup Utility” in Chapter 5 for information.

Wake On LAN Connector:

This connector is for a PCI Network Interface Card that supports WOL.



J26 Wake On LAN connector

WOM: Wake On Modem Connector J27

Function: A connector for the lead from an internal modem that supports the Wake On Modem feature.

Description: This feature enables the system to “wake up” from Suspend mode when it receives a signal over a modem it is connected to. It works with an internal PCI modem card that supports this feature by connecting the card to the WOM connector on the motherboard.

The motherboard supports WOM through a PCI bus signal. This signal will wake up the computer only when it is plugged into an AC power source and the system is in a supported suspend state.

More Information: Please see the Power Management Setup section of “Configuring the CMOS Setup Utility” in Chapter 5 for information.

Wake On Modem:

This connector is for a PCI modem card that supports WOM.

J27



J27 Wake On Modem connector

FI Panel Audio Connector JP2

Function: Connector for the audio features on the Smart Panel.

Description: The audio cable from the FI Panel plugs into to this connector.

More Information: See the “Connecting Internal Peripherals” and “Configuring the CMOS Setup Utility” sections in Chapter 5.

JP2 Connector:

The cable from the audio features on the FI Panel plugs into this connector.

JP2



JP2 connector

Front Panel Connector JP6

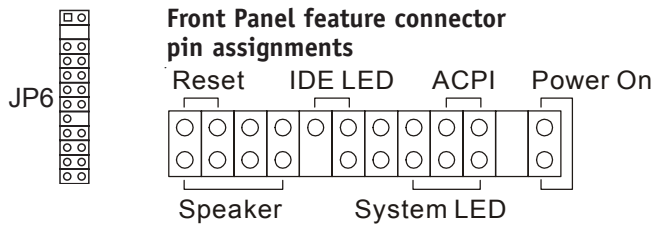
Function: Multifunction pin header connector for system housing front panel features.

Description: This connector supports the following front panel features:

- Reset Switch (Reset below)
- IDE device activity LED (IDE LED in diagram)
- System ACPI Suspend LED (ACPI in diagram)
- System Power Switch (Power On in diagram)
- System Activity LED (System LED in diagram)
- Housing-mounted speaker (Speaker in diagram)

More Information: See Chapter 4 “Installing the Board In A System Housing” and Chapter 6, “System Features”.

Front Panel Connector:
Leads from the front panel features connect to this header.

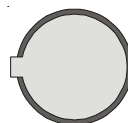
**Battery Housing**

Function: Housing for system support battery.

Description: An external lithium coin-cell battery powers the real-time clock and CMOS memory. When the computer is not plugged into a wall socket, the battery has an estimated life of three years. When the computer is plugged in, the standby current from the power supply extends the life of the battery.

More Information: See the Standard CMOS Features section of “Configuring the CMOS Setup Utility” in Chapter 5 to adjust the real-time clock settings.

Battery & Housing:
The battery is a CR2032 Lithium coin cell.



System support battery

External I/O Ports

There are several external Input/Output ports on the rear edge of the motherboard and connectors for more on the board. Please refer to the Rear I/O Panel Ports illustration for the port locations. The ports are color-coded for easy identification.

PS/2 Ports

Function: Connecting PS/2 devices to the system.

Description: The PS/2 ports are for a system keyboard and mouse or other pointing device. Do not connect or disconnect PS/2 devices when the system is turned on.

More Information: See the Advanced BIOS Features section of “Configuring the CMOS Setup Utility” in Chapter 5 for information on adjusting related settings.

PS/2 Ports:

Do not plug or unplug devices when the system is turned on.



PS/2 Mouse

PS/2 Keyboard

Parallel Port

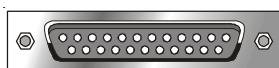
Function: Connecting a device with a parallel interface to the system.

Description: The parallel port is generally used to connect a printer to the system. The port supports common parallel port modes and allows bidirectional communication. Use an IEEE 1284 compliant cable with the default ECP mode configuration.

More Information: See the Integrated Peripherals section of “Configuring the CMOS Setup Utility” in Chapter 5 for information on adjusting port settings.

Parallel port:

The default mode is ECP, configured as EPP 1.9, DMA 3. 1284 compliant.



Parallel port

Serial (COM) Ports

Function: Connecting Serial devices.

The external serial port has a 9-pin connector. It can operate at speeds up to 115,200bps. You can configure the port speed via the computer's Operating System. Do not connect or disconnect a serial cable when the system is turned on. The second serial port is a connector on the motherboard.

More Information: See the Integrated Peripherals section of "Configuring the CMOS Setup Utility" in Chapter 5 for information on adjusting port settings.

Serial Ports:

Default configuration –
External port is COM1
Onboard port is COM2
Installing an IR port requires disabling COM2.



COM1 Serial Port

6-Channel Audio Jacks

Function: Provides Rear and Center channel/Subwoofer connections including an SP/DIF connector.

These external ports include jacks for a 5.1 speaker system's Rear and Center channels and the Subwoofer. One jack is for the Left and Right rear speakers and the other is for Center channel and Subwoofer. There is also one S/PDIF connector to connect the audio signal out to a digital decoder.

More Information: See the Integrated Peripherals section of "Configuring the CMOS Setup Utility" in Chapter 5 for more information.

6-Channel Audio Jacks:

Rear Left/Right and Center channel jacks. SP/DIF connector is for an optical cable.



Rear, Center/Subwoofer & S/PDIF connectors

Note:

You must install the supplied USB 2.0 drivers for use with Windows 2000 or Windows XP or the USB ports will only work in USB 1.1 mode. Other operating systems are not supported.

USB Ports:

There are three USB ports on the rear panel. The J17 USB port shares a root hub with the third external USB port.

USB Ports

Function: Connecting USB 2.0 devices to the system.

Description: These are Hi-Speed USB 2.0 ports for connecting either USB 1.1 or 2.0 devices. The ports are for “Type A” USB cable connectors. You can connect or disconnect USB cables when the system is turned on.

More Information: See the Integrated Peripherals section of “Configuring the CMOS Setup Utility” in Chapter 5 for information on adjusting port settings.



USB ports 1, 2, 3

Audio Jacks

Function: Jacks for connecting external audio devices to the onboard audio subsystem.

Description: There are three audio jacks:

- Line In
Audio input connector for an external audio source.
- Line Out
For the two stereo speakers.
- Mic
Microphone connector for a computer microphone.

More Information: See the Integrated Peripherals section of “Configuring the CMOS Setup Utility” in Chapter 5 for information on audio settings.

External Audio Jacks:

The onboard audio supports stereo or 5.1 Front channel speakers, audio input and a microphone.



Line In (Light Blue)

Line Out (Lime) - Front Channel L/R

Mic (Pink)

JP8 Clear CMOS:
Default – NormalJP8
Pin 1 **JP1**
Frontside Bus Clock:
Default – 133MHzPin 1  JP1**Jumpers**

There are five jumper switches on this motherboard. Jumpers function like switches to establish a hardware configuration setting.

JP8 Clear CMOS

Function: Clears the CMOS Setup Utility configuration record stored in the real-time clock's CMOS memory.

Description: A 3-pin jumper. Default Setting: Normal

More Information: See Chapter 3 for configuration information and the Troubleshooting section in Chapter 6.

JP1 Frontside Bus Clock

Function: Sets the base clock speed for the CPU Frontside Bus speed.

Description: An 3-pin jumper. Default Setting: 133MHz

More Information: See Chapter 3 for configuration information and “Memory Configuration” in Chapter 4.

Software Features

This motherboard comes with driver software and bundled utility software on the supplied Power Installer CD-ROM disc. The Installing OS & Support Software section in Chapter 5 explains how to install the software required to support this motherboard and profiles the bundled utilities.

Using the Power Installer Disc

You can run the Power Installer CD-ROM install interface under Microsoft Windows 9X, NT 4.0, 2000 or XP. The disc's install interface should load automatically and you then click on the model name of this motherboard.

Power Installer:
KK400-RS section
Manual Installation
screen



Driver Software

This motherboard requires that you install driver software to support the onboard hardware. You will need to install the following:

- VIA chipset support software
Driver that supports the KT400 chipset.
- Audio driver software
Audio driver and utilities for the onboard audio sub-system.
- RAID Driver Installation Guide
Acrobat PDF files that explain how to install the supplied RAID driver.
- USB 2.0 Driver
Support driver for USB 2.0
- FI Panel Driver
Drivers for Compact Flash Card, Memory Stick and Secure Digital Card readers. Can be used for the optional FI Panel or individual devices.

Please see “Installing OS & Support Software” in Chapter 5 for more information.

Power Installer:
KK400-RS section
Driver installation screen



Utility Software

The Power Installer disc also has several Windows utility programs on it.

- McAfee Anti-Virus

This is anti-virus software from one of the leading vendors.

- Acrobat Reader

Acrobat Reader allows you to read documents in the Adobe PDF format, including online documents on the Power Installer disc and a wide range of other content. The reader is free and can be upgraded at the Adobe web site – www.adobe.com – when new versions become available.

- Onboard RAID Utility

This is a RAID configuration and management utility program for the KK400-RS onboard RAID.

- Smart Card Reader Utility

Software utility for accessing smart cards inserted in a smart card reader connected to the motherboard.

- Hardware Monitor Utility

Hardware Doctor is a Winbond utility that allows you monitor the system hardware and obtain information about voltage levels, internal housing and CPU temperatures and CPU and system memory specifications.

Power Installer :
KK400-RS section
Utility installation
screen



In This Chapter:**The Default Configuration****Hardware Configuration: Jumper Settings****Firmware Configuration: The BIOS CMOS Setup Utility****Reconfiguring the Motherboard****Hardware Reconfiguration****Firmware Reconfiguration****3: Motherboard Configuration**

This chapter details the motherboard's default configuration and configuration options. Please review the contents of this chapter to find out information on the default configuration or alternative configuration options to change the default configuration.

The motherboard will operate properly in the default configuration. Please make certain that any configuration changes you make will not adversely affect system operation.

The Default Configuration

The default configuration is set at the time of manufacture. The configuration is comprised of the hardware configuration settings and the default firmware settings in the BIOS CMOS Setup Utility.

Hardware Configuration: Jumper Settings

This motherboard is mainly configured in firmware, which simplifies configuration. There are also a few hardware settings. The hardware settings are configured using standard jumper switches. The first section is about the a BIOS-related jumper and the second about the hardware configuration jumpers.

The BIOS-Related Jumper

Jumper JP8: Clear CMOS Memory

JP8 is a jumper switch, but it does not set a hardware configuration setting. The BIOS CMOS Setup Utility creates a system configuration record that is stored in CMOS memory in the real-time clock chip. If the configuration record data becomes corrupted or is destroyed, or if the CMOS Setup Utility settings are changed to an unusable configuration, the motherboard may not run properly or at all. JP8 provides a means to delete the configuration data stored in CMOS memory and reset the configuration to the CMOS Setup Utility's Optimized Defaults.

Follow this procedure to clear CMOS memory. If necessary, refer to the motherboard diagram and key in Chapter 2 for the jumper location.

1. Turn off and unplug the system. Remove the system housing cover (see documentation if necessary).
2. Set JP8 to the Clear CMOS position by placing the jumper cap over pins 2 and 3 for one minute.
3. Return the jumper cap to the Normal position.
4. Replace the system housing cover, plug in the system and turn it on.
5. Run the CMOS Setup utility and load the Optimized Defaults. You can then enter any custom settings you require.
6. Save the settings as you exit the program and restart the computer.

The system should now operate normally.

JP8 Clear CMOS: Default – Normal



JP58: Clear CMOS Memory

Setting	Function
Short 1-2	Normal operation [Default]
Short 2-3	Clear CMOS memory – see instructions

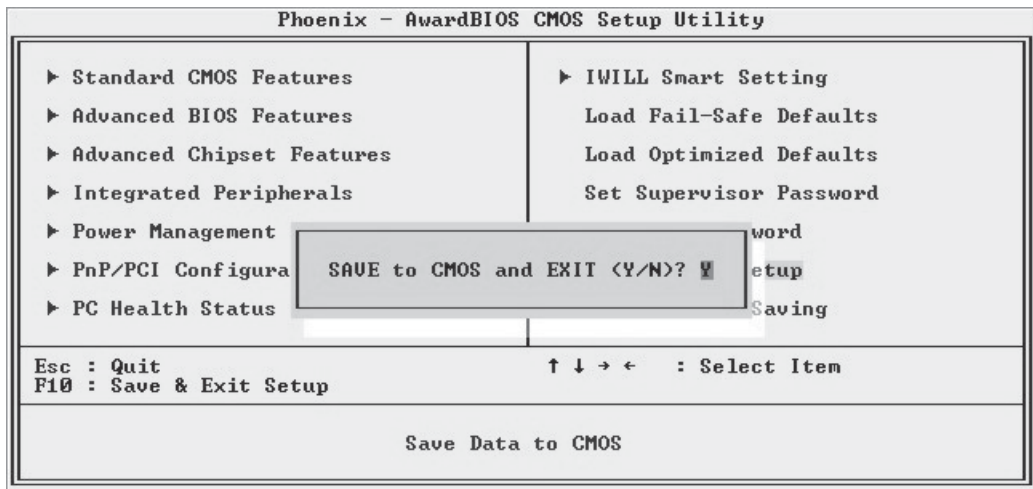
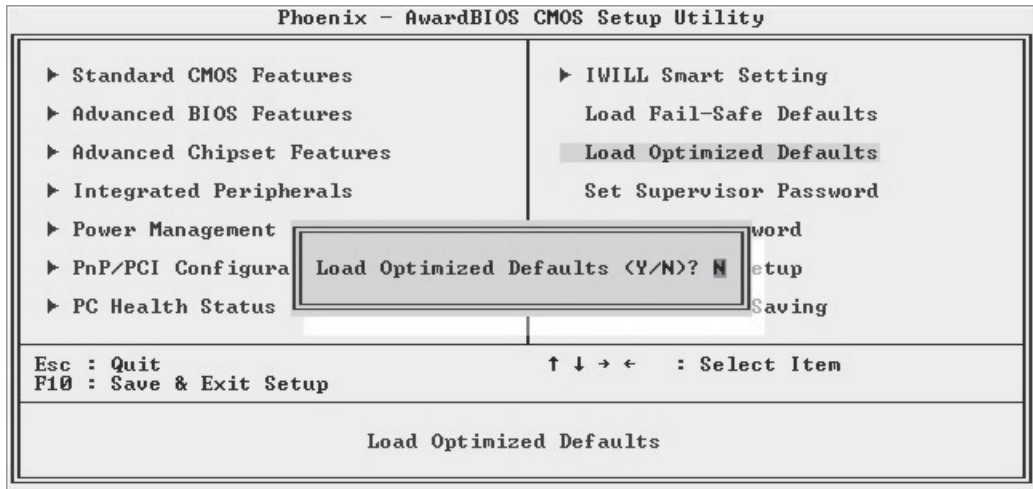
BIOS CMOS Setup Utility – Main Screen

The main screen of the CMOS Setup Utility has a Load Optimized Defaults item that loads the default operation settings. After you perform the Clear CMOS procedure, load the defaults as follows:

1. Select Load Optimized Defaults and press the Enter key.
2. A message will appear asking you to confirm.
3. Type a Y to confirm and press the Enter key again.
4. Make other settings you require.
5. Select Save & Exit Setup and press the Enter key.

The system will restart and use the new settings.

See the section on “Configuring the CMOS Setup Utility in Chapter 5 for information on how to use this program.



Hardware Configuration Jumpers

Jumper JP1: Frontside Bus Clock

This jumper sets the clock speed used to establish the Frontside Bus (FSB) clock speed. The 100MHz setting is for a 200MHz FSB clock. The 133MHz setting is for 266MHz FSB clock.

JP1 FSB Clock:
Default – 133MHz



JP1: Frontside Bus Speed Setting

Setting	Function
Short 1-2	133MHz FSB clock (266MHz FSB) [Default]
Short 2-3	100MHz FSB clock (200MHz)

Firmware Configuration: The CMOS Setup Utility

The BIOS CMOS Setup Utility a configuration record of system settings. This record is based on the “Optimized Defaults that are stored with the utility in Flash memory and can be reloaded at any time.

Many of these settings are either recommended or required for the motherboard to operate properly. Other settings are customizable and can be changed to suit your specific system configuration and operation requirements.

A number of the variable settings, such as CPU and IDE device settings are set to be automatically detected in the default configuration. While these settings can also be established manually, automatic detection is more convenient, safe and reliable. We strongly recommend that you leave all auto-detection settings undisturbed unless you have a specific reason not to and you are certain of what you are doing. Incorrect configuration of the CMOS Setup Utility can result in unreliable operation or a failure of the motherboard to work at all.

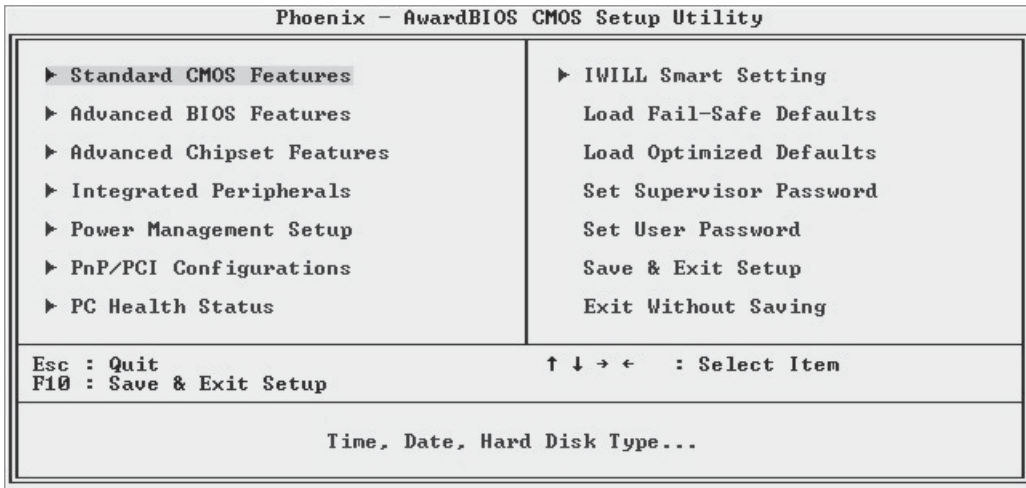
Using the CMOS Setup Utility

Please refer to the “Configuring the CMOS Setup Utility” section in Chapter 5 for information on using the utility and some settings you might want to customize. The utility does not run under an Operating System. You must load it during the Power On Self Test (POST) while the computer is starting up by press the Delete key or the Del key on the system keyboard’s numeric keypad.

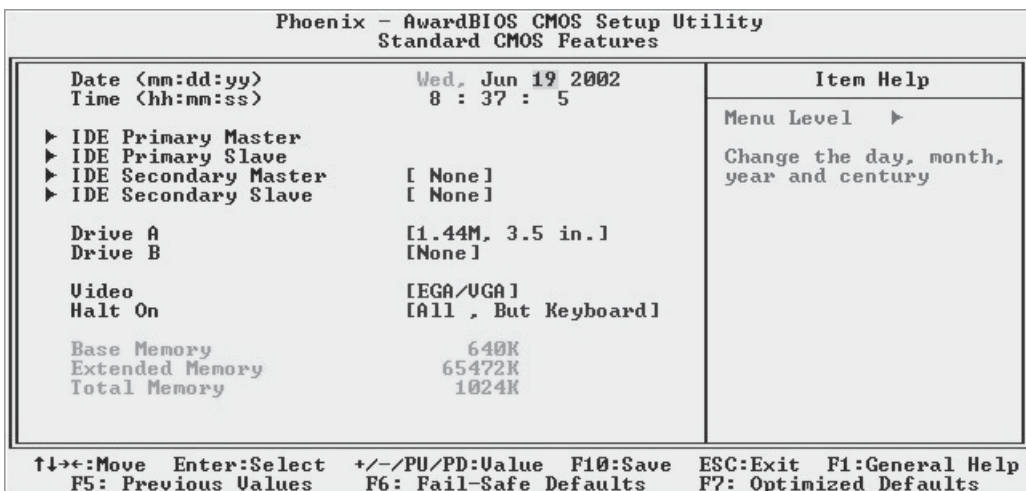
BIOS CMOS Setup Utility – Main Screen

Load the CMOS Setup Utility during the POST by pressing the Delete or Del key. The utility interface commands are explained at the bottom of each screen and “General Help” is available by pressing the F1 key. See the section on “Configuring the CMOS Setup Utility in Chapter 5 for information on how to use this program.

The main screen has a basic list command instructions at the bottom of the screen and displays a function description of the highlighted item.



Sections marked by an arrow on the main screen list command instructions at the bottom of the screen.



Reconfiguring the Motherboard

You can change the default configuration (as shipped) of this motherboard as needed. However, since this motherboard has only a few hard configuration options and the CMOS Setup Utility configuration is mostly either required, recommended or automatic, there will probably be little reason to do so.

Hardware Reconfiguration

We recommend leaving the jumper settings at the default settings unless you need to perform the Clear CMOS procedure. It is much more convenient to control the BIOS Flash Protection feature using the CMOS Setup Utility.

If you install the optional FI Panel, you should remove the jumper caps on JP2 so that you can connect the FI Panel audio connector.

The default setting is correct for any DDR memory you can install on this board. The alternate settings in the CMOS Setup Utility are only used for overclocking.

Firmware Reconfiguration

You can initially specify or customize the CMOS Setup Utility settings when you first configure the system (as covered in Chapter 5) to meet your requirements. Other than doing this, there should be no need to reconfigure the CMOS Setup Utility unless the system configuration changes or the configuration record stored in CMOS memory becomes corrupted and unusable, which is not common. If you need to completely recreate the system configuration record, follow the Clear CMOS procedure described in this chapter.

In This Chapter:**Pre-Installation Preparation****Installing CPUs****Installing System Memory****Installing the Motherboard in a System Housing****Motherboard Installation Procedure****Completing System Configuration****4: Installing the Motherboard**

This chapter covers preparing the motherboard for installation, installing the board in a system housing or “chassis” and installing or connecting other internal system components.

There are a number of important topics in this chapter and we strongly urge that you review it before attempting to install the motherboard.

Pre-installation Preparation

Before you install the motherboard you will need to do the following:

- Install an AMD CPU
- Install DDR system memory modules

Both of these require specific procedures that you must follow precisely to insure that the components are successfully installed and work properly. Please review the instructions in this section in detail and follow them carefully. The procedures are not complex.

Installing A CPU

To install a CPU on the motherboard it is important to follow the entire procedure for installing both the CPU and its cooling assembly. Failure to do so can result in either improper operation or damage to the CPU and possibly the motherboard.

To install an AMD CPU on this motherboard you will need to do the following:

- Install an AMD processor in the Socket 462 socket
- Install a Cooling Fan/Heatsink assembly

Please follow the procedure detailed below to install the processor on the board. AMD boxed Athlon and Duron processors come with full installation instructions. If you have them, please also read and follow those instructions carefully.

Processor Selection

This motherboard uses any 462-pin “Socket A” AMD Athlon, Athlon XP or Duron processor. All current processor speeds are supported. The BIOS automatically detects the required CPU settings and configures the CMOS Setup Utility accordingly. The settings in the IWILL Smart Setting section control processor configuration settings.

Phoenix - AwardBIOS CMOS Setup Utility IWILL Smart Setting		
		Item Help
Spread Spectrum	[Disabled]	
CPU Clock	[100]	
DDR Voltage Regulator	[2.6 v]	
CPU Ucore Setting	[Auto]	
Onboard SATA	[Disabled]	
Onboard RAID	[Enable]	
BIOS-ROM Flash Protect	[Non-Flash]	
		Menu Level ▶

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

Note:

All supported CPUs install the same way.

Important:

If you install a CPU that has a 200MHz FSB speed, you must set jumper JP1 to the 100MHz setting. See Chapter 3.

Important:

Remove the protective cover from the CPU socket before installing a CPU.

Step 1:

Raise the retaining lever

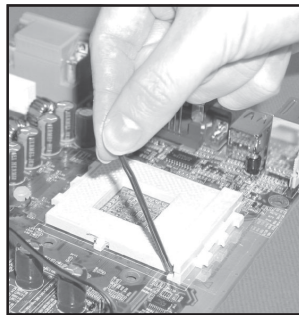
Installing The Processor

Installing a processor in the Socket 462 is a simple procedure. It is very important, however, to carefully handle the processor by the edges and always fully observe precautions against electrostatic discharge. We assume here that you are installing a “boxed” processor, that is, one packaged by AMD and sold retail. If you are installing a non-boxed processor, the procedure is the same, but the accessory items may have a different appearance.

Please follow the installation procedure as illustrated on the next two pages. The illustrations are generic and do not specifically represent this motherboard.

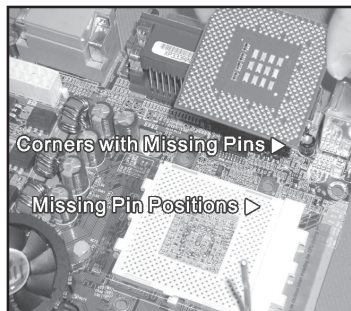
The processor installation procedure is as follows:

1. Raise the locking lever of the processor locking mechanism to a perpendicular position.



Raise the socket lever to the vertical position

2. Align the processor to the socket by matching the beveled Pin 1 corner of the CPU to the Pin 1 corner on the socket, which is located at the corner where the locking arm attaches to the socket.



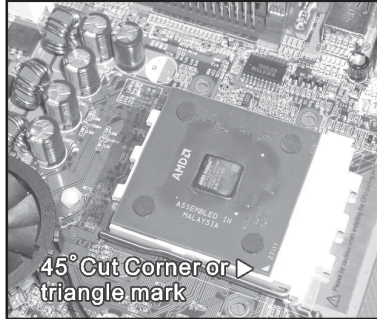
Two corners have pins missing on the socket and the processor

Step 2:

Align the CPU so that the two corners with missing pins match the corresponding receptacles in the socket.

- Carefully insert the processor in the socket receptacles, taking care not to bend any pins.

Step 3:
Insert the processor in the socket.



Gently press the processor into the socket

There should be minimal resistance

- Lower the locking mechanism's retaining lever and secure it in place to secure the processor in the socket. Grasp the processor by the edges and gently pull upwards to insure it is properly inserted. The processor shouldn't move.

Step 4:
Secure the retaining lever

Installing the Fan/Heatsink

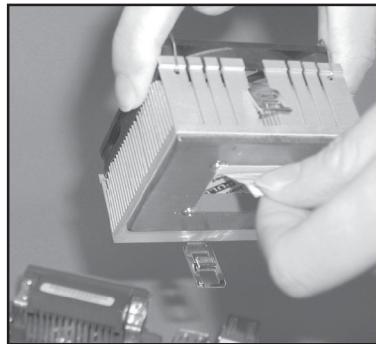
Once you have installed the CPU, you must install a Fan/Heatsink assembly. The Fan/Heatsink clips onto to the CPU socket.

Prepare the Heatsink

Before you install the Fan/Heatsink you must prepare the Fan/Heatsink assembly. The heatsink has a patch of thermal interface material on the underside that is covered with protective tape or by a plastic cover that covers the entire bottom of the heatsink. You must remove the tape before you install the Fan/Heatsink assembly. To remove the plastic cover, just pull it off. To remove the tape do as follows:

1. Hold the free end of the tape at a 90° to the surface of the heatsink. Pull the tape off with a smooth quick movement that removes the tape only and not the underlying thermal interface material.

Remove Protective Tape: Remove the protective tape covering the thermal interface material on the underside of the heatsink by quickly pulling it off at an angle of 90° to the heatsink.



Remove protective tape from the Thermal Interface Material

Next, install the processor Fan/Heatsink assembly as detailed below.

Install the Fan/Heatsink

To install the processor Fan/Heatsink assembly do as follows:

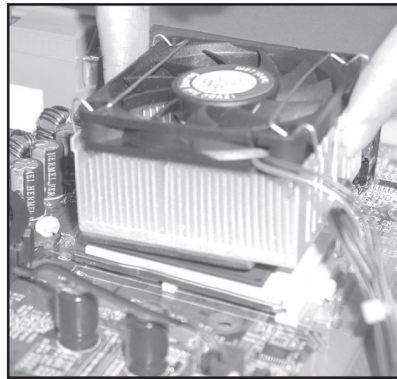
1. Place the Fan/Heatsink on top of the CPU so that it is sitting evenly on the pads on top of the CPU and it does not contact the socket. The assembly retention clip mechanism should align with the corresponding lug extensions on the socket.

Step 1:

Place the Fan/Heatsink assembly on top of the CPU, aligning the retaining clip mechanism to the matching socket extensions.

Important:

Rest the heatsink evenly on the pads on top of the CPU so that the heatsink is not in contact with the socket.

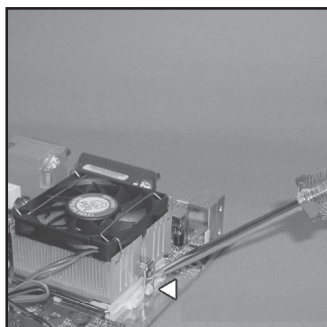


Position the heatsink evenly on the CPU so that one edge hangs over, but does not contact the socket

2. Hold the Fan/Heatsink steady and press one end of the retention clip down over the matching socket lug extension so that the opening in the clip fits over the lug securely and will not slip off.

Step 2:

Press one end of the retention clip over the matching socket lug.



Press the retention clip over the socket lug with a flathead screwdriver

Insert the tip in the slot in the clip to hold it securely

Step 3:

Hold the Heatsink/Fan assembly steady and press the other retention clip end over the other matching lug extension so that it clips on securely.

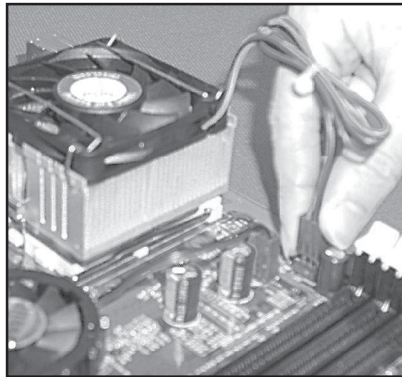
3. Repeat the process on the opposite side. Keep holding the Fan/Heatsink steady. Press the end of the retention clip over the corresponding lug extension so that it snaps over the lug securely. Make sure the Fan/Heatsink assembly is positioned directly over the CPU and is not in contact with the socket.

Connect Fan/Heatsink Power Lead

Plug the fan power lead onto the CPU Fan power connector near the CPU socket. When you do this the CPU installation is complete.

Step 4:

Plug the Fan power lead onto the CPU fan power connector



Fan power lead plugs onto the closest CPU fan power connector.

If you are installing a dual CPU configuration, repeat this procedure to install a second Athlon MP CPU in the second CPU socket.

Installing System Memory

This section details the procedure for installing system memory on the motherboard. Correct memory configuration is critical for proper system operation. Please review this section carefully and follow the configuration guidelines precisely.

Memory Specifications

The motherboard has Three DIMM module sockets. This motherboard uses DDR SDRAM DIMM modules for system memory. The system memory specifications are:

- PC1600, PC2100, PC2700 or PC3200 DDR SDRAM DIMM modules.
- 64MB, 128MB, 256MB, 512MB or 1GB DIMMs.
- Maximum 3GB unbuffered and registered total system memory.

IMPORTANT

PC3200 Configuration:

You can only install PC3200 modules in the following DIMM sockets:

DIM 1 & 3

DIM 2 & 3

You can not install PC3200 modules in a DIM1 & 2 configuration or in all three sockets.

Memory Configuration Options

This motherboard has flexible memory configuration options. Please note the following:

- Supports any mix of 64MB, 128MB, 256MB, 512MB and 1GB modules.
- Any capacity DIMM may be used in any socket as long as the total memory limit is not exceeded.
- Modules should be the same speed for best system performance.
- Both unbuffered and registered DDR SDRAM are supported.
- Do not mix unbuffered and registered memory.

Installing Memory Modules

Installing DIMM modules is simple. The modules insert in the sockets and are held in place by the socket retaining arms. The edge connectors on the modules are of different widths and there are key notches in each module. These ensure that you can not insert a module incorrectly.

Before you install any modules, you should choose a configuration. You should then prepare the required number and type of DDR modules.

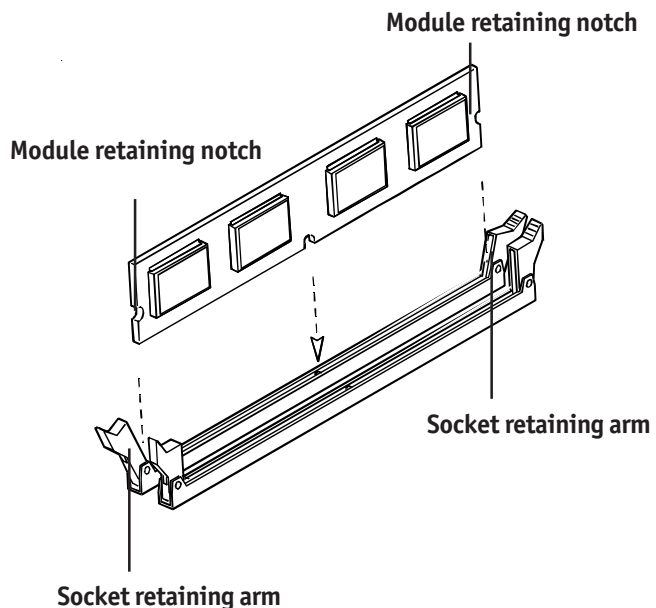
To install either type of module follow this procedure:

1. Align the module to the socket so that the edge connectors on the module match the socket sections.
2. Hold the module perpendicular to the motherboard and press the edge connector into the socket.
3. Press the module fully into the socket so that the socket retaining arms swing up and engage the retention notches at each end of the module.

Following the configuration you have chosen, repeat this procedure if necessary so that all modules are installed. Once the modules are installed, system memory installation is complete.

Module Installation:

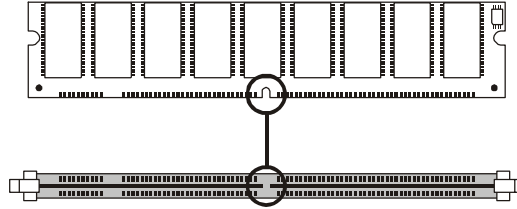
Modules will only insert in one orientation. The width of the two edge connector sections varies slightly and prevents incorrect insertion.



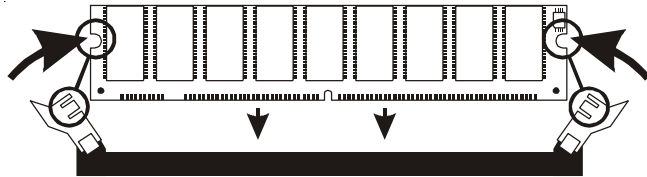
Module Installation:

All modules insert in the DIMM sockets in the same way:

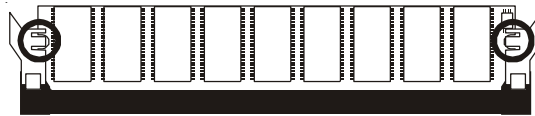
1. Align the module to the socket.



2. The socket retaining arms should rotate up and engage the module's retaining notches as you press it into the socket.



3. The retaining arms must engage for the module to be properly installed.



PC1600 Memory Configuration

Only use PC1600 memory with a CPU that has a 200MHz Frontside Bus speed. You must also set jumper JP1 to the 100MHz setting for this configuration.

System Memory Recognition

The BIOS will automatically recognize the installed memory configuration and configure the CMOS Setup Utility. No other action is required to complete system memory installation.

Installing the Motherboard in a System Housing

This section explains the basic requirements for installing this motherboard in a system housing or “chassis”. Since housing designs vary widely, you will need to consult the housing documentation for specific information.

This motherboard can be installed in any housing that supports the ATX form factor.

To install the motherboard in a system housing you will need to do the following:

- Install a rear I/O panel shield
- Attach the board to the housing
- Connect leads from the housing’s front panel

You can then connect other internal system components as described later in this chapter.

Motherboard Installation Procedure

This section assumes you are installing the board in a suitable ATX housing. We also assume you have prepared the board for installation as previously described in this manual. If the housing you are using normally stands vertically, place the open housing on it’s side before you start.

Please follow this procedure to install this motherboard:

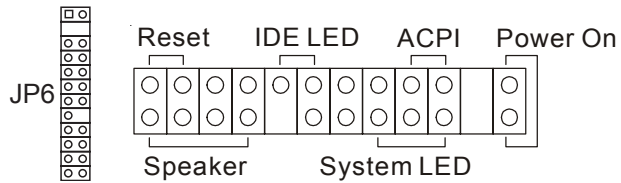
1. Review any instructions that came with the system housing and prepare the necessary mounting hardware that came with it.
2. Identify the mounting holes on the board and confirm that the housing has standoffs that match them.
3. Install the rear I/O panel shield that came with the motherboard in the housing’s I/O panel opening. This should fit in the housing.

Connecting Front Panel Components

After the motherboard is installed in the system housing, you should connect whatever front panel components the housing has to the Front Panel feature connector on the motherboard.

The figure below indicates the pin assignments of the connector for your reference.

Front Panel Connector:
Leads from the front panel features connect to this header.

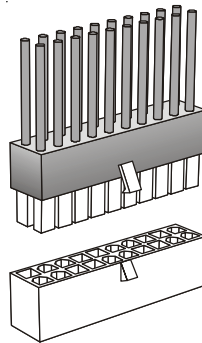


Front Panel feature connector

Completing System Configuration

Once the motherboard is installed in the system housing, you can proceed to connect or install whatever internal devices you will use to complete the system. These will at least include an AGP display card and disk drives and connecting the housing power supply leads.

ATX Power Connector:
The power connector from the system power supply plugs into the 20-pin J9 connector on the board.



J9 ATX power connector

After that, having replaced the system housing cover, you can connect external peripherals to complete the process of preparing the system for use. These will include at least a video display monitor, a keyboard and a pointing device such as a mouse. Please see the next chapter for information on completing these final hardware installation steps and installing Operating System and support software.

In This Chapter:**Installing or Connecting Internal Peripherals****Installing an AGP Card****Connecting Internal Devices****Connecting External System Peripherals****Configuring the CMOS Setup Utility****Installing an OS & Support Software****5: System Configuration**

This chapter explains what you need to do to assemble a complete system after you have installed the motherboard in a system housing. This will include installing or connecting internal devices, connecting external system components. Once the system is assembled, you'll need to check and possibly configure the motherboard's CMOS Setup Utility, install an Operating System and install the support software supplied on the Power Installer support CD-ROM disc.

Installing or Connecting Internal Peripherals

To complete the assembly of a working system you will need to at least install an AGP video display card and connect whatever disk drives you will use in the system. This section covers what you need to know on the motherboard side to do this. You will also need to consult the documentation that comes with your internal system peripherals for additional installation instructions and information. This section covers the minimum components you will need to connect to the motherboard to create a functioning system. You may plan to add other devices as well.

Installing an AGP Card

The AGP connector on the board supports AGP 4X and 8X 1.5-volt display cards. Follow the instructions that come with the display card for installing the card hardware in the AGP slot.

AGP Configuration

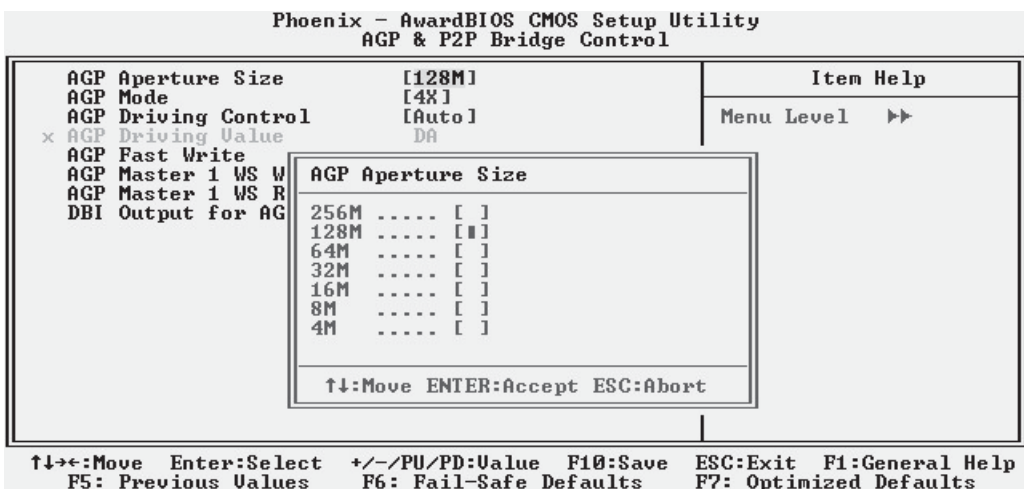
You can configure the amount of system memory the AGP card will use as auxiliary memory by adjusting the AGP Aperture Size setting in the Advanced Chipset Features section of the CMOS Setup Utility. The default aperture setting is 64MB the maximum is 256MB.

Display Drivers

You should install the display card's display driver software according to the instructions that come with the card after you have completed system assembly and have installed an OS and the support software for this motherboard.

AGP Aperture Setting

You can set the AGP aperture size in the Advanced Chipset Features section of the CMOS Setup Utility



Connecting Internal Devices

To assemble a complete system capable of completing the installation of this motherboard you will need to install and connect the following internal devices:

- Hard Disk Drive
- CD-ROM or other optical drive
- Floppy disk drive

The floppy disk drive is not strictly necessary, but is a standard system component and is needed if you will create driver floppy disks from the Power Installer 2.

We assume here, in the absence of an alternative drive controller that any hard disk or optical drives will be IDE devices connected to the motherboard's IDE channels.

Connecting IDE Devices

This motherboard supports two IDE channels, Primary and Secondary. It has two IDE device connectors onboard which support IDE devices running in any data transfer mode up to ATA-100. Each IDE connector supports two drives, a Master and a Slave. The drives connect to the motherboard with an IDE ribbon cable. IDE cables have three connectors on them, one that plugs into a drive connector on the board and the other two that connect to IDE devices. The connector at the end of the cable is for the Master drive. The connector in the middle of the cable is for the Slave drive.

There are different types of IDE ribbon cable, supporting transfer modes up through ATA-33, ATA-66 or ATA-100 or ATA-133. You must use a cable that supports the transfer mode of the fastest device connected to it. For example, if both an ATA-66 mode and an ATA-100 mode device are connected to the same cable, the cable must support ATA-100 mode to achieve maximum performance.

To install an IDE drive, connect the drive to one of the drive connectors on a suitable ribbon cable. Plug the board end of the cable into one of the IDE connectors on the motherboard.

ATA-133 Cables

ATA-133 mode devices require a ribbon cable that supports this mode. Don't use the supplied ATA-100 cable to connect IDE devices to an ATA - 133 device.

IDE Drive Positioning

Normally the system's primary hard disk drive should be in the Primary Master position. If you will use only the supplied ribbon cable, connect a CD-ROM drive to the Primary Slave position.

If you obtain an additional IDE ribbon cable, you can install a second hard disk drive in the Primary Slave position and install the CD-ROM as the Secondary Master. This is a good idea if the CD-ROM drive uses a slower data transfer mode than the hard disk drive.

Follow any instructions that come with the drives to configure and install them. IDE devices generally can be set to one of three operation modes:

- Master
- Slave
- Cable Select

Many drives come set to the Master setting. If you will use the drive in a Slave position, you must reconfigure it as either Slave or use the Cable Select setting to allow the drives position on the cable to define the mode.

Cable Select:

Not all drives work properly with Cable Select mode. If you try to use this mode and the drive does not operate properly, set the drive to either Master or Slave mode, as appropriate for its position on the cable.

Connecting a Floppy Disk Drive

This motherboard has one Floppy Drive connector for connecting one or two floppy disk drives. Most computer systems use one 3.5-inch 1.44MB floppy disk drive. The drive connector is for a standard floppy drive ribbon cable.

To install a floppy disk drive, connect the drive to the end of the cable, which is the Drive A: position. Plug the other end of the cable into the floppy disk drive connector on the motherboard.

Connecting a Smartcard or MS/SD Reader

This motherboard has connectors for a Smartcard reader (JP13) and a Memory Stick™ or Secure Digital™ memory card reader (J29). You can either connect individual modules to them or you can connect the appropriate cables from the optional FI Panel.

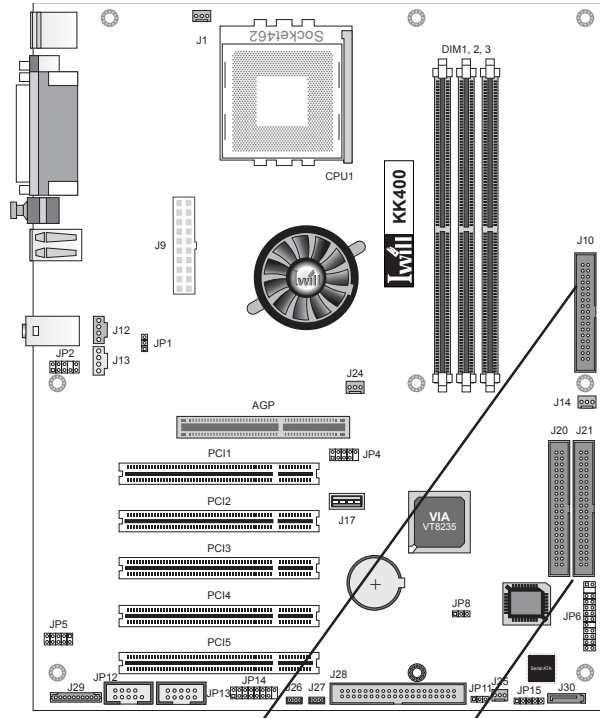
To connect any of these devices, follow the instructions that come with them. You will need to connect a module cable to the appropriate connector and enable the feature in the "Integrated Peripherals" section of the CMOS Setup Utility. The default port settings listed should work.

Onboard IDE Connectors

Each channel connector supports one IDE channel with two drives, a Master and a Slave. The Master drive connects to the connector on the end of the ribbon cable. The Slave drive connects to the connector in the middle of the ribbon cable.

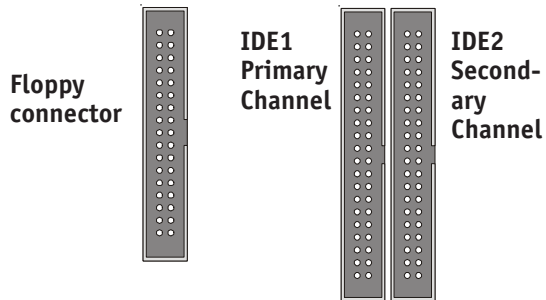
Note:

The ribbon cable used must support the transfer mode of the fastest device connected to it to avoid degraded performance.



Floppy Drive Connector

The floppy drive connector supports two floppy disk drives. The first drive, Drive A:, connects to the connector on the end of the floppy drive connector cable. A second drive, Drive B:, would connect to the middle connector on the cable although systems now commonly only have one floppy disk drive.



Multiple Drive Configurations

The KK400-RS motherboard includes two additional disk drive subsystems you may want to make use of. These include both a Highpoint HPT371 RAID controller with one IDE connector for two drives and a Serial-ATA controller with one onboard connector.

These additional controllers allow you to add additional disk drives to the system over and above the four drives supported by the standard onboard IDE controller. On the KK400-RS you can connect an additional two ATA-133 IDE, or slower, IDE devices, to the IDE RAID connector. The KK400-RS also provides an Serial-ATA connector, to which you can connect an additional device.

This means that the KK400-RS supports a total of seven devices including one Serial-ATA drive. If you are going to configure your system with a large number of devices, make sure that the wattage of the system power supply is sufficient to support all the devices you want to install.

RAID & Serial-ATA Drivers

Both the Highpoint RAID and Serial-ATA features require drivers to operate. The Power Installer support CD-ROM disc includes Windows drivers for these features. Make sure you install the appropriate driver if you will use either of them. See the relevant Installation Guide on the Power Installer for more information.

ATA-133 Cabling

The KK400 Series motherboards come with one ATA-100 cable. An ATA-133 mode cable is required for use with the ATA-133 devices. ATA-133 cables are similar to the supplied ATA-100 IDE ribbon cable. Both support two devices. If you will connect more than two ATA-133 devices to the board, make sure you purchase an additional ribbon cable that is specifically for ATA-133.

Serial-ATA Cabling

The KK400-RS motherboard comes with a Serial-ATA cable. You use it to connect a Serial-ATA device to the onboard Serial-ATA connector. The connector is designed so that it isn't possible to plug the cable on the wrong way.

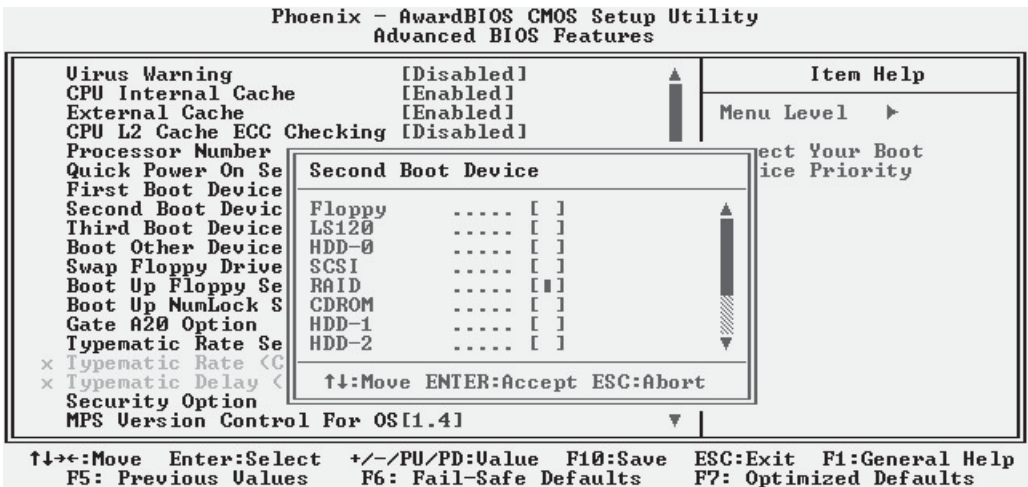
Alternate Controllers

The RAID controller must be set to Enabled in the IWILL Smart Setting section of the CMOS Setup Utility in order to use the boot order feature described here.

Alternate Drive Controller Boot Device Settings

On the KK400-RS you can set a disk drive connected to the RAID controller as the system's boot device. To do this you select the RAID item in a Boot Device list for one of the boot device choices in the CMOS Setup Utility's Advanced BIOS Features section.

This feature can only set a drive connected to the RAID controller as a bootable device. You can't set a Serial ATA drive as the boot device for the KK400-RS.



Connecting External System Peripherals

To complete the assembly of functioning system you will need at minimum to connect the following external system components to the system housing:

- Video Display Monitor
- Keyboard
- Mouse or other Pointing Device

Connecting a Display Monitor

You can connect any display monitor supported by the AGP display card you installed in the system. This may include either a CRT or LCD monitor, depending on the card's specifications.

Connect the display monitor cable to the appropriate display connector on the AGP card according to the instructions that come with the card and monitor.

Connecting a Keyboard & Mouse

You can use either PS/2 or USB input devices with this motherboard.

Connecting PS/2 Devices

Connect a PS/2 keyboard and mouse to the Keyboard and Mouse PS/2 ports on the rear I/O port panel. Don't connect or disconnect a device while the system is turned on. Doing so can damage the board.

Connecting USB Devices

You can use a USB keyboard and mouse with this motherboard. They plug into two of the USB ports. You must enable this function in the BIOS CMOS Setup Utility as noted on the next page. The Operating System you use must support USB to use any USB devices. You can plug and unplug USB devices when the system is turned on.

CMOS Setup Utility – Integrated Peripherals

Phoenix – AwardBIOS CMOS Setup Utility		Item Help
Integrated Peripherals		Menu Level ▶
▶ UIA OnChip IDE Device	[Press Enter]	
▶ UIA OnChip PCI Device	[Press Enter]	
▶ SuperIO Device	[Press Enter]	
Init Display First	[AGP]	
OnChip USB Controller	[All Enabled]	
USB 2.0 Support	[Enabled]	
USB Keyboard Support	[Disabled]	
IDE HDD Block Mode	[Enabled]	
PWRON After PWR-Fail	[Off]	
SCR Port Address	[Disabled]	
x SCR Port IRQ	5	
MS/SD Port Address	[Disabled]	
x MS/SD Port Mode	MS Socket	
x MS/SD Port IRQ	5	

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

Enable “USB 2.0 Keyboard Support” if you will use a USB keyboard.

Configuring the CMOS Setup Utility

The motherboard Award BIOS includes the CMOS Setup Utility that creates a system configuration record that is stored in CMOS memory on the board and is required by the system to operate properly.

Most of the configuration settings are either predefined by the BIOS Optimized Default settings which are stored with the BIOS or are automatically detected and configured without requiring User action. There are a few settings that you may need to change depending on your system configuration.

This section gives a brief profiles of the several sections of the CMOS Setup Utility and indicates settings you might need to change and those which you should not.

The CMOS Setup Utility User Interface

The CMOS Setup Utility user interface is simple and largely self evident. The utility can only be operated from the keyboard and all commands are keyboard commands. The utility does not support mouse use. The commands are straightforward and those available for the program section you are in are listed at the bottom of the screen. The main screen has few commands, other sections have more. General Help, which lists the commands and their functions is available at any time by pressing the F1 key.

Running the CMOS Setup Utility

The CMOS Setup Utility does not require an operating system to run. You run the utility by typing the Del or Delete key when the computer is starting to boot up. The utility's main screen will then appear.

CMOS Setup Utility – Interface commands

```

Phoenix - AwardBIOS CMOS Setup Utility

┌ Standard CMOS Features
┌ Advanced BIOS Features
┌ Advanced Chipset Features
┌ Integrated Peripherals
┌ Power Management Setup
┌ PnP/PCI Configurations
┌ PC Health Status
┌ IWILL Smart Setting
  Load Fail-Safe Defaults
  Load Optimized Defaults
  Set Supervisor Password
  Set User Password
  Save & Exit Setup
  Exit Without Saving

Esc : Quit
F10 : Save & Exit Setup          ↑ ↓ → ← : Select Item

Time, Date, Hard Disk Type...
  
```

```

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)      Wed, Jun 19 2002
Time (hh:mm:ss)     8 : 37 : 5
┌ IDE Primary Master
┌ IDE Primary Slave
┌ IDE Secondary Master [ None ]
┌ IDE Secondary Slave [ None ]

Drive A              [1.44M, 3.5 in.]
Drive B              [None]

Video                [EGA/UGA]
Halt On              [All , But Keyboard]

Base Memory          640K
Extended Memory     65472K
Total Memory         1024K

Item Help
Menu Level ▶
Change the day, month,
year and century

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

CMOS Setup Utility Program Sections

The CMOS Setup Utility is divided into several subsections and some top level commands including the following sections:

- Standard CMOS Features
- Advanced BIOS Features
- Advanced Chipset features
- Integrated Peripherals
- Power Management Setup
- PnP/PCI Configurations
- PC Health Status
- IWILL Smart Setting

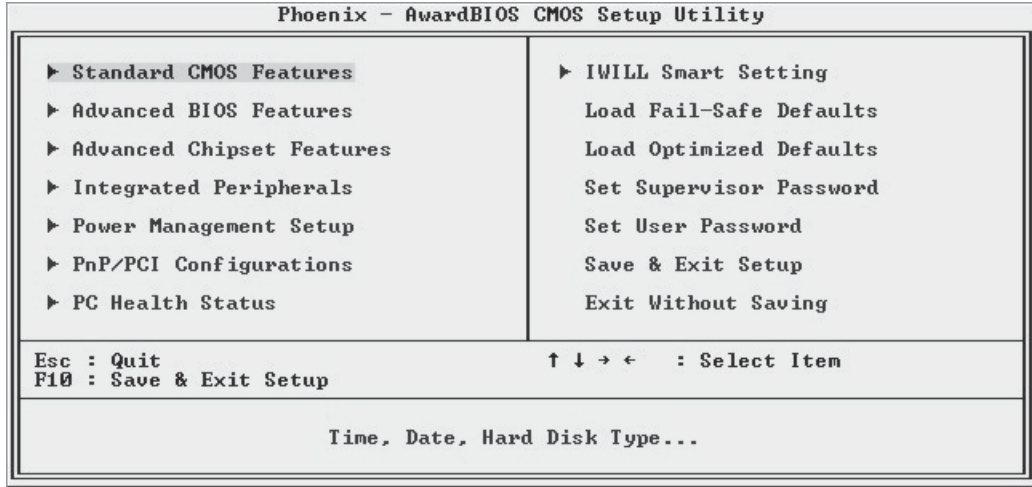
The main screen also has these command options:

- Load Fail-Safe Defaults
- Load Optimized Defaults
- Set Supervisor Password
- Set User Password
- Save & Exit Setup
- Exit Without Saving

Please see the following sections for a brief profile of what each section does, information on settings you might want to change and things to leave alone.

To open one of the program sections, highlight the item you want and press the Enter key. To change a setting, highlight an item and use the “Value” keys indicated to change the setting. Alternatively, press the Enter key and all options for that item will display and you can choose from those listed.

CMOS Setup Utility – Main Screen



Standard CMOS Features

Main Section Functions

This section has the real time clock settings, the IDE and floppy device settings.

Default & Autodetected Settings

The IDE device settings are autodetected. You shouldn't need to change them. The floppy and other settings are standard defaults.

Setting Options & Constraints

You can reset the time and date settings if they are not correct for your location. You can manually set the IDE device settings if you need to.

CMOS Setup Utility – Standard CMOS Features

Phoenix – AwardBIOS CMOS Setup Utility		
Standard CMOS Features		
		Item Help
Date <mm:dd:yy>	Wed, Jun 19 2002	
Time <hh:mm:ss>	8 : 37 : 5	
▶ IDE Primary Master		Menu Level ▶
▶ IDE Primary Slave		
▶ IDE Secondary Master	[None]	Change the day, month, year and century
▶ IDE Secondary Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA/UGA]	
Halt On	[All , But Keyboard]	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	

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

In operation, the screen will display the detected IDE devices

Advanced BIOS Features

Main Section Functions

This section mainly configures boot options including boot devices and their boot order and some power functions. There are also some miscellaneous boot configuration settings.

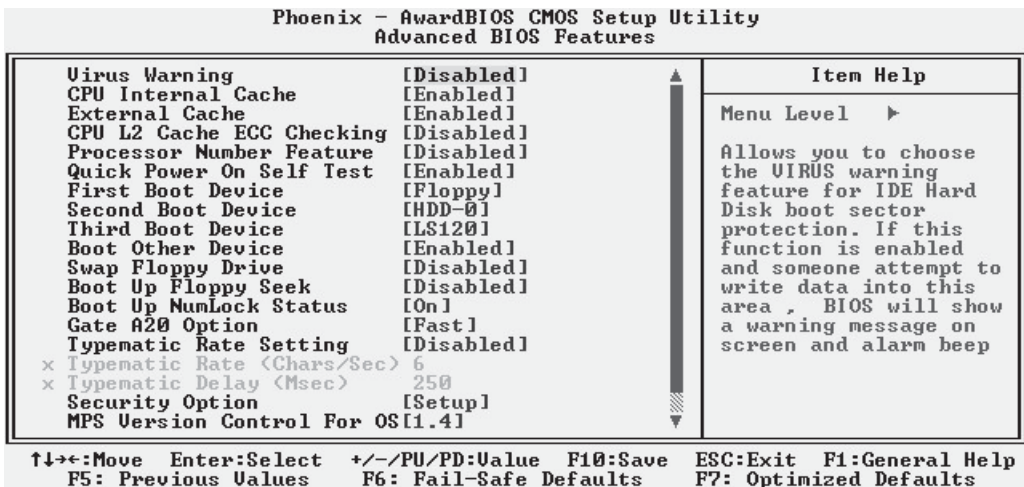
Default & Autodetected Settings

The screen illustration shows the default settings. These do not need to be changed. You can customize the settings to suit your purposes if necessary and you know what you're doing.

Setting Options & Constraints

You can change the boot device assignments and order, the boot options and the power on settings as you like. If you are using OS/2 set the OS Select For DRAM > 64MB line to the OS2 setting.

CMOS Setup Utility – Advanced BIOS Features



Boot Devices

You can set a device connected to the RAID controller as the boot device.

Advanced Chipset Features

Main Section Functions

Configures the chipset, BIOS caching and the AGP Aperture size.

Default & Autodetected Settings

Everything on this screen is an optimized default or is autodetected.

Setting Options & Constraints

We don't suggest changing anything in this section other than the Memory Hole setting, if necessary. You can change the AGP Aperture if needed. The default AGP setting will work.

CMOS Setup Utility – Advanced Chipset Features

Phoenix – AwardBIOS CMOS Setup Utility		Advanced Chipset Features	
▶ DRAM Clock/Drive Control	[Press Enter]	Item Help	
▶ AGP & P2P Bridge Control	[Press Enter]	Menu Level ▶	
▶ CPU & PCI Bus Control	[Press Enter]		
Memory Hole	[Disabled]		
System BIOS Cacheable	[Enabled]		
Video RAM Cacheable	[Disabled]		

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

Integrated Peripherals

Main Section Functions

Configures the peripheral features integrated onto the motherboard.

Default & Autodetected Settings

Everything on this screen is an optimized default. The IDE transfer mode settings are autodetected. The system will work with these defaults. The port settings are standard PC settings.

Setting Options & Constraints

You can disable onboard devices and change port settings. If you're going to use a USB keyboard, you have to enable support for it from this screen.

You can disable the onboard audio feature if you need to. The IDE HDD Block Mode feature should work with newer IDE hard disk drives.

You may want to set Onboard Serial Port 2 to Disabled if you aren't going to use the onboard COM2 port.

CMOS Setup Utility – Integrated Peripherals

Phoenix – AwardBIOS CMOS Setup Utility		Item Help
Integrated Peripherals		Menu Level ▶
▶ UIA OnChip IDE Device	[Press Enter]	
▶ UIA OnChip PCI Device	[Press Enter]	
▶ SuperIO Device	[Press Enter]	
Init Display First	[AGP]	
OnChip USB Controller	[All Enabled]	
USB 2.0 Support	[Enabled]	
USB Keyboard Support	[Disabled]	
IDE HDD Block Mode	[Enabled]	
PWRON After PWR-Fail	[Off]	
SCR Port Address	[Disabled]	
x SCR Port IRQ	5	
MS/SD Port Address	[Disabled]	
x MS/SD Port Mode	MS Socket	
x MS/SD Port IRQ	5	

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

If you install an IR port module, you have to set the UART Mode Select line to the appropriate IR setting. Check the module instructions for this information. The following four lines will display the defaults for the IR mode you select and should work.

You can alter the parallel port settings as needed. You can disable the Game and MIDI settings if you aren't going to use the Game port header.

The last several items when at the bottom of the main Integrated Peripherals screen are SCR Port Address and MS/SD Port Address. These enable and configure a Smartcard reader and Memory Stick™ and Secure Digital™ memory card reader respectively. Either of the listed port addresses should work. You must set MS/SD Port Address to use the optional FI Panel.

CMOS Setup Utility – Integrated Peripherals - Super IO section

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
SuperIO Device		Menu Level ▶▶
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
RxD , TxD Active	[Hi,Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Use IR Pins	[IR-Rx2Tx2]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
EPP Mode Select	[EPP1.9]	
ECP Mode Use DMA	[3]	
Game Port Address	[Disabled]	
Midi Port Address	[Disabled]	
x Midi Port IRQ	5	

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

Power Management Setup

Main Section Functions

Configures power management settings. Most of these are overridden by ACPI power management in Windows.

Default & Autodetected Settings

Everything on this screen is an optimized default.

Setting Options & Constraints

You can select the Minimum or Maximum configurations rather than the User Defined defaults. You can customize all settings in User Defined mode. If your OS supports power management, configure it there.

The Soft-Off by PWR-BTTN line controls the function of the system housing power button. The default sets it to turn the system on and off when you press the button. The alternate setting, delay 4 Sec., requires you to press the power button for more than four seconds before the system will turn off.

You can also set a date and time for the system to turn on or wake up in the IRQ/Event Activity Detect section.

CMOS Setup Utility – Power Management Setup

Phoenix – AwardBIOS CMOS Setup Utility		Item Help
Power Management Setup		Menu Level ▶
ACPI Suspend Type	[S1<POS>]	
Power Management Option	[User Define]	
HDD Power Down	[Disable]	
Suspend Mode	[Disable]	
Video Off Option	[Suspend -> Off]	
Video Off Method	[U/H SYNC+Blank]	
MODEM Use IRQ	[3]	
Soft-Off by PWRBTN	[Instant-Off]	
Run UGABIOS if S3 Resume	[Auto]	
State After Power Failure	[Off]	
▶ IRQ/Event Activity Detect	[Press Enter]	

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

PnP/PCI Configurations

Section Function

Configures Plug and Play and other PCI bus settings.

Default & Autodetected Settings

The default is for the BIOS to control these functions.

Setting Options & Constraints

If you have a problem after you install an expansion card, set “Reset Configuration Data” to Enabled to rewrite the ESCD.

Don’t change the resource settings, they’re set to be handled automatically by the BIOS. While you can set them manually, there shouldn’t be any need to do so.

The PCI/VGA Palette Snoop item is for PCI display cards that have a problem displaying a screen image properly at startup. You should not normally need to use this feature since the AGP slot is the primary display.

CMOS Setup Utility – PnP/PCI Configurations

Phoenix – AwardBIOS CMOS Setup Utility PnP/PCI Configurations		Item Help
PNP OS Installed	[No]	Menu Level ▶ Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
Reset Configuration Data	[Disabled]	
Resources Controlled By x IRQ Resources	[Auto<ESCD>] Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
PCI SLOT1 & 5	[Auto]	
PCI SLOT2	[Auto]	
PCI SLOT3 & RAID	[Auto]	
PCI SLOT4	[Auto]	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

PC Health Status

Section Function

Displays detected system information CPU cooling fan speed and various voltage levels.

Default & Autodetected Settings

The list of system information is autodetected and displayed.

Setting Options & Constraints

You can set a Shutdown Temperature. If the CPU temperature reaches the shutdown temperature limit, the system will automatically shutdown to protect the CPU from damage.

CMOS Setup Utility – PC Health Status

Phoenix – AwardBIOS CMOS Setup Utility	
PC Health Status	
Shutdown Temperature	[Disabled]
Current System Temp	
Current CPU1 Temperature	
CPUFan Speed	
Fan2 Speed	
Ucore	
+3.3 U	
+5 U	
+12 U	
UBAT <U>	
5USB <U>	
	Item Help
	Menu Level ▶
↑↓←→:Move Enter:Select +/~/PU/PD:Uvalue F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults	

IWILL Smart Setting

Section Function

Configures CPU settings. Sets the DDR memory voltage. Enables the onboard RAID and Serial-ATA controllers on the KK400-RS. Sets the BIOS ROM Flash mode.

Default & Autodetected Settings

The default settings autodetect the CPU and Vcore settings. The “Spread Spectrum” setting reduces interference generated by the board circuitry when Enabled.

Setting Options & Constraints

Don’t change the auto-detected settings unless you really know what you are doing. You can configure the CPU settings manually. Configuring CPU settings at variance with AMD’s specifications can damage the CPU and void the CPU warranty. You can disable any additional storage controllers if you are not using them.

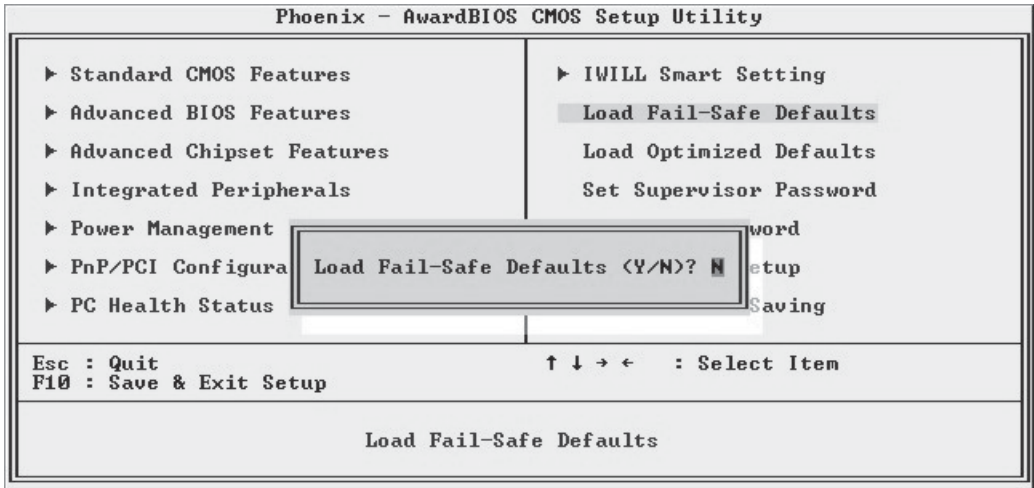
CMOS Setup Utility – IWILL Smart Setting

Phoenix - AwardBIOS CMOS Setup Utility IWILL Smart Setting		
Item	Value	Item Help
Spread Spectrum	[Disabled]	
CPU Clock	[100]	
DDR Voltage Regulator	[2.6 v]	
CPU Vcore Setting	[Auto]	
Onboard SATA	[Disabled]	
Onboard RAID	[Enable]	
BIOS-ROM Flash Protect	[Non-Flash]	
↑↓←→: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

Note: The screen above is for the KK400-RS. The KK400 screen does not include the Onboard RAID and Onboard SATA lines.

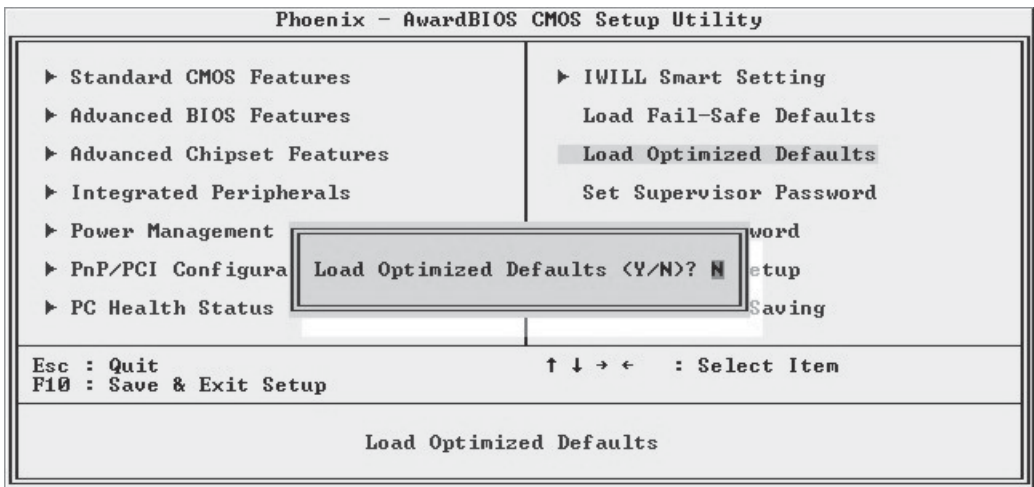
Load Fail-Safe Defaults

This loads a set of minimum configuration defaults. It is used to allow the system to start and then troubleshoot hardware problems. You shouldn't need to use this, it's mainly for technicians.



Load Optimized Defaults

This loads the Optimized Defaults. Do this if the configuration record has been corrupted or mistakenly configured or after the Clear CMOS procedure has been performed. See Chapter 3 for more information on this procedure. To load the defaults, select this item, press the Enter key, type a Y and press Enter again.



Set Supervisor/User Password

These two items set passwords for system access.

Setting a Password

You can install a Supervisor or User Password. The password prevents access to the CMOS Setup Utility (Supervisor) or the entire system (User).

To install a password, follow these steps:

1. Highlight either Set Password item in the main menu and press Enter.
2. The password dialog box will appear.
3. If you are entering a new password, carefully type in the password. You cannot use more than eight characters or numbers. Passwords are case-sensitive. Press Enter after you have typed in the password. If you are deleting a password that is already installed just press Enter when the password dialog box appears.
4. The system will ask you to confirm the new password by asking you to type it in a second time. Carefully type the password again and press Enter, or just press Enter if you are deleting a password that is already installed.
5. If you have used the correct format, the password will be recorded.

If you decide not to set a password after bringing up the password entry window, press the Enter key, not Esc to exit the password entry window.

Save & Exit Setup

This saves the current utility configuration as a new configuration record, exits the utility and restarts the system using the saved configuration record.

Exit Without Saving

Exits the utility and restarts the system without changing the saved configuration record.

In general, it should not be necessary to use the CMOS Setup Utility once you have fully configured it. In the event you do need to change or re-establish the settings, always make sure to save the settings when you exit the utility or the new settings will not be stored.

Installing an OS & Support Software

This section covers installing Operating System software and the support software on the Power Installer support CD-ROM disc. Once you have configured the CMOS Setup Utility, you should install an OS. If you install a supported Microsoft OS, you should also install the driver software on the Power Installer disc.

Installing an Operating System

This motherboard is primarily intended for use with the following Operating Systems:

- Microsoft Windows 9X
- Microsoft Windows NT
- Microsoft Windows 2000
- Microsoft Windows XP
- Linux
- Novell Netware
- Unix

Prepare the hard disk drive and install an OS according to the instructions that come with the OS you will use.

Installing the Support Software

The Power Installer CD-ROM disc comes with required hardware drivers for Microsoft Windows and some additional utility software, as noted in Chapter 2. If you have installed a supported Microsoft OS, you must install the required drivers. If you have installed Linux, you can create Linux support disks.

Power Installer:**Main Screen**

Click on the model name for this board.

Note:

The screen illustrations in this section are for the KK400-RS. The KK400 does not include Serial ATA and RAID items.

Power Installer:**KK400-RS Main Screen**

You can automatically install the required AMD chipset support by choosing "Auto Installation" or you can do all installations manually by choosing Manual Installation. Either way, you must install the AMD chipset support before you install anything else.

Installing Windows Drivers

This section assumes you have installed one of the supported Microsoft Operating Systems on the system hard disk drive.

To install Windows drivers, insert the Power Installer support CD-ROM disc in the system's CD-ROM (or other optical drive) and wait for the Power Installer interface to automatically load. If it doesn't start, run the Power Installer interface directly from the disc by running Setup.

The Power Installer main screen will appear. Click on a motherboard model number to open the section for it.



The “Driver and Utilities” screen will appear when you click on Manual Installation. Click on “Driver Installation” and the Driver Installation screen will appear.

Power Installer:

Drivers and Utilities

Click on Driver Installation to access the driver install programs.



Note:

No RAID item in the KK400 version.



Install the Service Pack Driver item by clicking on them and following the install program instructions.

Install the audio driver for Windows by clicking on the Audio Driver item to run it and install the driver. This item also installs audio software for use with the onboard audio subsystem.

Review the RAID Installation Guide by clicking on its name. The Adobe Acrobat reader install program will run when you try to view an Installation Guide if you have not already installed it. Install the program and then repeat the procedure to read the guide information.

If you will use Windows 2000 or Windows XP, install the supplied USB 2.0 driver. Other versions of Windows and other operating systems are not supported. Under them, the USB ports will function as USB 1.1 ports.

If you have installed either a Smart Card Reader or a Memory Stick/Secure Digital card reader, or have installed the optional FI Panel, install the FI Panel driver. Click on the item and follow the installation program's instructions to install the driver.

USB 2.0 Support:

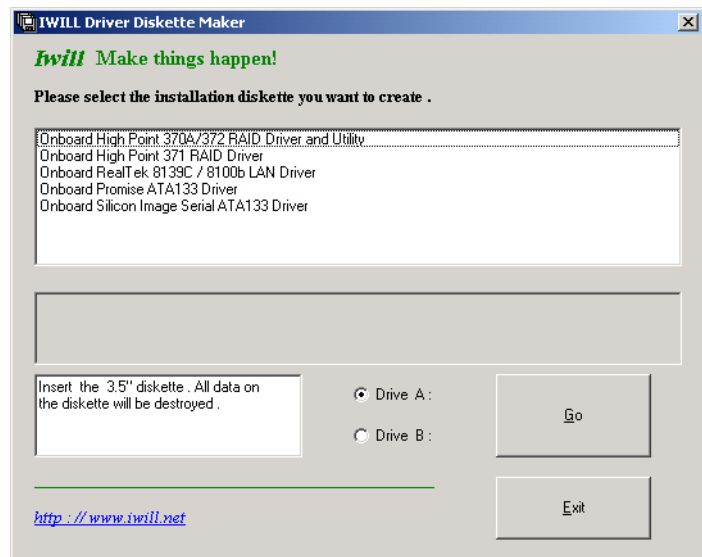
The supplied USB 2.0 driver is for use with Windows 2000 and Windows XP. The driver does not support other versions of Windows.

The Make Driver Utility

The "Make Driver" utility makes driver floppy disks. You can use this utility to make a Windows driver disk for the onboard RAID controller on the KK400-RS.

Make Driver Utility:

You can use this utility to make driver disks for the onboard audio sub-system and the RAID controller. Select a listed item and follow the onscreen instructions.



Making a Linux Support Disk

You can boot the system from the Power Installer disc. The system will boot from a Linux kernel on the disc and you can use the disk creator that loads to create a Linux support disk. You can then use it to install any necessary modules according to your Linux distribution's instructions for module installation.

Installing the Software Utility

To install the utility software bundled on the Power Installer disc, click on "Software Utility" in the Drivers and Utilities screen to open the Software Utility window.

To install the Adobe Acrobat reader or McAfee Anti-Virus software packages, click on the item you want to install and follow the install program's instructions.

Install the RAID Utility if you have the KK400-RS and will use the RAID feature. The utility has a Help system with a full explanation of how to use it to create and manage a RAID array.

You can install the Smart Card Reader Utility if you have installed a Smart Card reader or the FI Panel.

The Hardware Monitor Utility gives you access to information detected by the Winbond hardware monitor.

Power Installer: Software Utility

Click on the item you want to install and follow the install program instructions.



In This Chapter:**Using System Features****Front Panel Controls & Indicators****Additional System Features****Installing & Configuring An IR Port****Performance Optimization****Troubleshooting****6: Using the Motherboard**

This chapter covers several topics related to using this motherboard once it is installed in a working system. These include external system features that connect to the motherboard, things you can do to optimize the performance of a system based on this board and some troubleshooting tips you can review in the event any problems arise.

Using System Features

This section explains the system controls and indicators that connect to the motherboard. It also explains how the other system level features on the board work.

Front Panel System Controls & Indicators

The front panel of the system housing will have some or all of the front panel features that connect to the motherboard. These enable the User to determine some information on the systems operational status and provide some system controls.

System Controls

The front panel connector on the motherboard supports several system controls that mount on the front panel of the system housing.

Power Button

Function: Turns the system On and Off.

Use: This button is configured by the CMOS Setup Utility by the “Soft-Off Mode by PWR-BTTN” line in the Power Management section. Depending on the setting, the power button will function in one of two modes, instant on/off or instant on/4-second delay off. In the delay mode, when you push the power button for less than 4 seconds when the system is on, the system goes into the Suspend power conservation mode. In this mode, you have to push the button for more than 4 seconds to turn the system power off.

Reset Switch

Function: Restarts the system to cold boot.

Use: Press the button to restart the system. This forces a restart under all conditions. Don't use the Reset button if you can shut the system down from within the Operating System.

Note On Reset & Rebooting:

You should always restart or shut down the system by using the OS command for this. This procedure allows the OS to shut down properly, minimizing the possibility of hard disk drive problems or data loss. If the system crashes or “hangs”, you may have to restart the system at the hardware level. There are two hardware reboot options, a keyboard command and the Reset button.

You can effect a “warm” reboot with a key command if the OS supports it. For example, all versions of Microsoft Windows support restarting the computer with the Ctrl-Alt-Del (Delete) command. You can try this command first if it is supported. Otherwise, you will need to use the Reset button.

Suspend Button

Function: Toggles system in and out of Suspend mode.

Use: Press the button to cause the system to enter or resume from Suspend mode.

Note: The front panel feature connector supports a system Suspend button (the ACPI connector) but not all system housings have this button. The same function can be performed at the Operating System level if the OS supports the feature.

Indicator LEDs

The motherboard front panel features connector supports three system status indicator LEDs:

- Power Status LED Indicator
Lights when the system is turned on.
- System Hard Disk Drive Activity LED Indicator
Flashes during hard disk drive access.
- Power Conservation Mode LED Indicator
Lights to indicate the system is in a Suspend state power conservation mode.

Most system housings will have all of these LEDs mounted in the housing's front panel.

Additional System Features

This motherboard supports the IWILL "FI Panel" front panel extender. The FI Panel connectors on the motherboard connect to cables from the FI Panel, which mounts in a 5¼-inch bay in the system housing and includes the following features:

- Compact Flash reader
- Memory Stick reader
- Secure Digital Card reader
- Line Out audio jack
- Microphone jack
- Two Hi-Speed USB 2.0 ports

Follow the instructions that come with the FI Panel to install and use the device. The FI Panel is an optional purchase.

Wake On LAN (WOL) & Wake On Modem (WOM)

Function: The system wakes up in response to a signal arriving over a LAN or modem connected to it.

Use: The onboard WOL supports connection to a PCI Network Interface Card. The WOL cable from the card connects to the WOL connector on the board. The WOM connector connects to an internal PCI modem card that supports this feature.

These features are not enabled by default in the Power Management section of the CMOS Setup Utility. If you want to use it, set the "Wake-Up by PCI card" line to the Enabled setting.

USB 2.0:
USB 2.0 support is provided for Windows 2000 and Windows XP. Under other operating systems the USB ports will function as USB 1.1 ports.

Installing & Configuring An IR Port

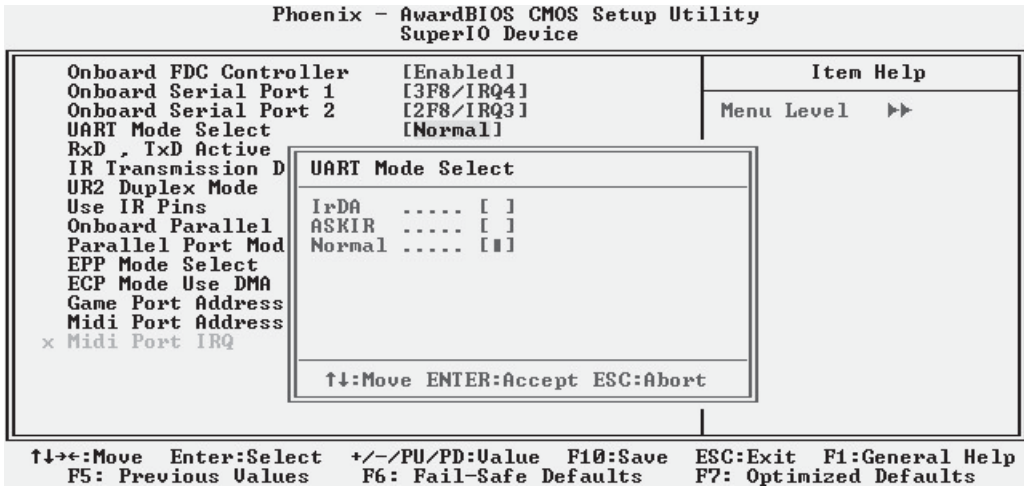
There is a pin header connector for an Infrared communications port module on the motherboard. An IR port enable wireless communication between the system and another device with IR capability. Common examples of such devices are a PDA or notebook computer. Installing an IR port module requires disabling the COM2 serial port on the rear I/O panel and reconfiguring it for IR use in the CMOS Setup Utility.

Installing an IR port module requires an expansion slot opening unless the system housing has a built-in IR port with a cable to connect to the motherboard.

Follow the instructions that come that come with the port module you want to install. The basic installation procedure is as follows if the module installs in an expansion slot opening:

1. Turn off and unplug the system if necessary.
2. Remove the system housing cover.
3. Locate the JP5 IR pin header connector on the motherboard.
4. Remove the expansion slot cover in the system housing that corresponds to an open PCI slot. There may be a slot cover retaining screw to remove and put aside for later use.
5. Insert the port module in the open expansion slot cover and align the module's mounting bracket with the screw hole for the retaining screw (if there is one). Insert the screw and tighten it to secure the port module in place.
6. Plug the module's connector cable on to the IR connector on the motherboard.
7. Replace the system housing cover.
8. Plug in and turn on the computer.
9. Run the CMOS Setup Utility and pen the Integrated Peripherals section. Set the "UART Mode Select" to the required mode, IrDA or ASKIR, and configure the port settings below it if necessary. Save the settings and reboot.

CMOS Setup Utility – Integrated Peripherals UART Mode Select – IR mode selection



The supported Microsoft Operating Systems should automatically detect and configure the port module after you restart the system. Consult the OS documentation or online Help for more information if necessary. You may also need to install support software that came with the IR port module in order to use it. Consult the installation instructions that came with the module for additional instructions.

Performance Optimization

This section covers things you can do to increase the performance of a system based on this motherboard. The topics covered include system memory, disk subsystems and processor upgrades or adjustments.

System Memory

Adding system memory will increase system performance and capability under any of the supported Operating System. This motherboard supports a total of 2GB of unbuffered DDR DRAM system memory. If you have not installed the maximum, you can consider increasing the amount of installed system memory. Additional system memory speeds up system operation and in some cases produces additional stability in the Operating System.

Disk Subsystems

The main IDE controller on this motherboard supports IDE drives using data transfer modes up through ATA-133. If you use IDE drives as the primary disk subsystem, selecting drives that support ATA-133 and have a high rotation speed will maximize performance.

If you need even better performance from a disk subsystem, you can consider using the RAID or the Serial-ATA features on the KK400-RS. Both of these, and particularly the Serial-ATA controller, will provide a substantial performance enhancement over the standard onboard IDE controller.

Processor Upgrades & Adjustments

Processor speed has a significant effect on overall system performance. To increase system performance, you can consider using or upgrading to a faster processor.

The AMD processors used by this motherboard come in a variety of clock speeds. To maximize performance, select a processor with the fastest clock speed the system budget or specification allows.

The CMOS Setup Utility's Frequency/Voltage Setting section will automatically detect and configure whatever processors are installed. Manual configuration is also available, but setting the processor to operating parameters outside those specified by AMD can damage the CPU and void the warranty.

Onboard 5.1 Audio

The onboard audio subsystem provides support for connecting a 5.1 speaker system to the computer.

Speaker Types

A 5.1 speaker system has the following speakers:

- Front Left & Right Channel
- Rear Left & Right Channel
- Center Channel
- Bass Subwoofer

The “5” stands for the five speakers and the “1” for the Subwoofer. These speakers make up the full set for a Home Theater speaker system.

Speaker Connections

There are several means of connecting a 5.1 speaker system to the board. The rear I/O panel provides the following connections:

- Line Out: For the Front Left & Right Channel speakers. A connector from a cable for both speakers plugs into this jack. Also used for Stereo speakers.
- Rear: For the Rear Left & Right Channel speakers. A miniplug cable for both speakers plugs into this jack.
- Center/Subwoofer: For the Center Channel speaker and the Subwoofer. A miniplug cable for both speakers plugs into this jack.

The 5.1 speaker systems designed for computers usually have an amplifier built into the Subwoofer housing and come with cables to connect these audio jacks to the Subwoofer. Additional cables then connect the five speakers to the subwoofer’s amplifier.

- S/PDIF: this is a connector for a special optical digital audio cable.

The S/PDIF cable carries the entire audio signal out to a sound system that includes an amplifier with a connection for this type of cable and a built-in decoder to differentiate the audio signal and divide it into its various components and send them to the correct speaker in the 5.1 system.

Troubleshooting

This section details some things you can do to evaluate problems that could possibly occur in the course of using this motherboard. The topics covered include possible hardware problems and problems with the CMOS Setup Utility's system configuration record.

Hardware Problems

A hardware problem may occur either after you install additional hardware or because some existing hardware has failed or has a disconnected or loose connection. This section has some pointers on things you can check before seeking assistance.

General Hardware Troubleshooting

If the motherboard does not operate properly when you first try to use it in the system, it is likely that it is either configured incorrectly, there are problems with external connections. It is also possible the board or some other system component is defective. Always check the most obvious possibilities first.

First check the external components:

- Make sure the system, the monitor and any other external peripherals are plugged in and turned on. Confirm that the system and the power LEDs on any external peripherals are on.
- Check that the monitor, keyboard and mouse are properly connected.

Next check the CMOS Setup Utility:

- Run the CMOS Setup Utility and load the Optimized Defaults. Reset any other custom settings. Remember to "Save & Exit Setup" to restart the computer.

If there is still a problem, check the internal components. Turn off and unplug the system before you remove the system housing cover.

- Press all installed DIMMs into the module sockets to make sure they're fully inserted.
- Make sure you used the correct cables to connect the internal peripherals and that the peripherals are properly connected to the motherboard. Check the Master/Slave positions on all IDE cables. If you installed a device that uses ATA-100 mode, make sure it is connected to the motherboard with an ATA-100 cable to ensure maximum performance.
- Check that all expansion cards are correctly installed and fully inserted in the expansion slots. Pay particular attention to the AGP display card if one is installed.
- Make sure the processor and its fan/heatsink cooling assembly are properly installed.
- Check all the hardware settings on the motherboard and make sure they are correct.

When you're done, reassemble the system and try again. If the problem persists after you have checked all of the above, there may be a hardware conflict or bug. See the next section for additional information.

Hardware Configuration Problems

It is possible for system hardware components to conflict with each other. While all the components and subsystems on the motherboard are designed and tested to work together, expansion cards and peripheral devices can be a problem.

Assuming you have gone through the general troubleshooting procedures and the system still will not start, if you have just added new hardware to your system, there may be a hardware conflict or bug or a problem with a device driver. Try removing the new hardware and see if the system will start. If it does, consult with the device manufacturer for information on solving the problem. In some cases, a firmware or driver upgrade may resolve the problem.

Plug and Play Problems

This motherboard supports the automatic recognition and configuration of expansion cards that support the Plug and Play (PnP) specification. Most currently available expansion cards support PnP. PnP simplifies card installation by allowing the system to handle system resource allocation. If you install an expansion card that is not PnP compliant, you may still need to configure the card manually. Consult the card's documentation for instructions or other information.

Replacing the System Configuration Record

As noted previously, the CMOS Setup Utility creates a system configuration record and stores it in CMOS memory on the motherboard. This record must be correct and uncorrupted for the system to operate properly. It is possible for the system configuration record can become corrupted or lost. If this occurs, the system will not operate properly or at all. This is not a serious problem. You can restore a working configuration using the CMOS Setup Utility to create a new configuration record by loading the Optimized Defaults and reentering any other settings you had made.

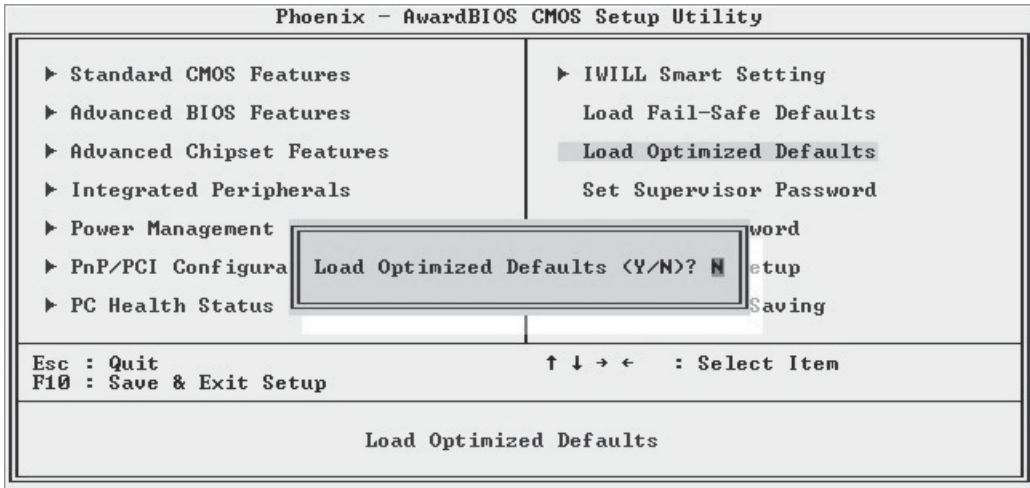
Loading Optimized Defaults

The CMOS Setup Utility does not require an operating system to run. You run the utility by typing the Del or Delete key while the system is starting up to brings up the utility's main screen.

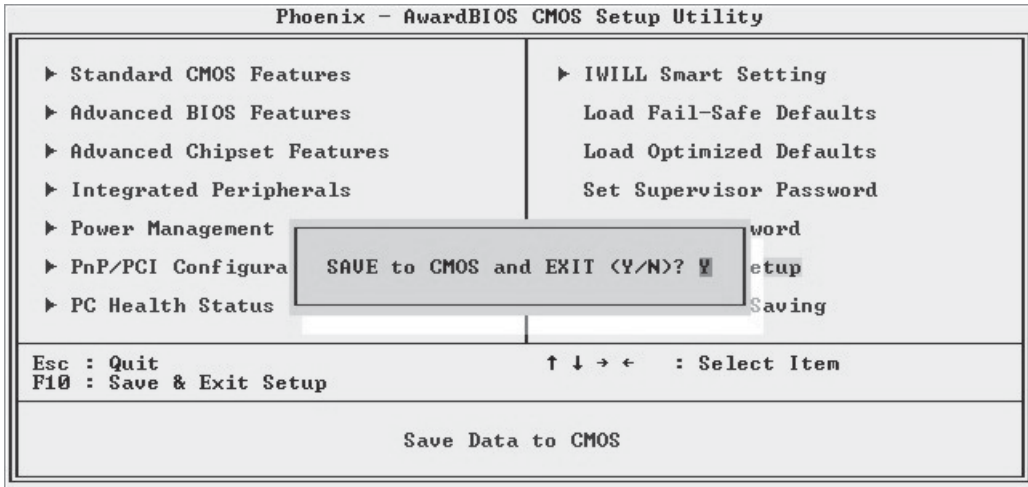
There are two sets of defaults listed, Optimized and Fail-Safe. The Fail-Safe Defaults are a minimum configuration set for use by technicians when troubleshooting system problems. The Optimized Defaults are what the system normally operates on. If a corrupted system configuration record caused the problem you experienced, once you load the Optimized Defaults and reboot, the system should function normally. The instructions on the next page illustrate this procedure.

You can easily restore a working system configuration record from the main screen of the CMOS Setup Utility. To do so, do as follows:

1. Select the “Load Optimized Defaults” item.
2. Press the Enter Key. A confirmation message will appear on the screen. Type a “Y” to accept loading the Optimized Default settings. Now make any other settings you need to.



3. Select “Save & Exit Setup” and press the Enter key. A confirmation message will appear. Press the Enter key again to confirm.



The CMOS Setup Utility will close and the system will reboot. The system should then start properly and run normally.

In This Chapter:
Technical Specifications
Connector Pinouts

7: Technical Specifications

This chapter lists some technical information about this motherboard series.

Technical Specifications

Processor

Single processor for AMD socket A
System Bus: 100MHz/133MHz
Support Duron, Athlon and Athlon XP processor
Auto detect CPU type, set external clock .
CPU Multiplier adjustment by BIOS
CPU external clock adjustment at 1MHz/step by BIOS.
CPU Over heat protection
LED : indicates CPU enter protection mode
CPU Power - Follows VRM 9.0 spec
VRD design

Memory

PC1600/PC2100/PC2700/PC3200 DDR SDRAM
Unbuffer/Register DDR SDRAM
3 DIMMs

Chip Set

North Bridge : VIA KT400
South Bridge : VT8235
Winbond Super I/O : W83637HF
Graphics AGP 8X/4X

PCI

Five 32bit PCI/33MHz slots
PCI 2.1/2.2 Compliant

MS/SD & SMC

MS Reader Connector (Near front panel)
SD Reader Connector (Near front panel)
Smart Card Reader Connector (Near front panel)

SATA(KK400-RS)

Marvell 88i8030 Revision 2.2
Parallel ATA interface connect to Secondary IDE port of southbridge
One internal SATA port

IDE RAID(KK400-RS)

Highpoint HPT371

IDE RAID level 0, 1

One IDE connector

USB 2.0

Three USB 2.0 external port on the rear panel

Two USB 2.0 internal port by pin header for front panel

One standard USB connector for internal USB device.

Audio

AC'97 software Sound

5.1 Channel

One audio connector at rear panel to support LINE IN/
LINE OUT/MIC IN

Support MIC IN/LINE OUT for front panel

Support Rear_out/Center_out/SPDIF_out on rear panel

One 4-pin CD-ROM Audio In header

One 4-pin AUX header

General I/O

Two IDE connectors (Bus Master with Enhanced) support
Ultra DMA 33/ATA66/ATA100/ATA133 IDE drives and ATAPI
compliant devices

One Floppy Controller for up to two drives

One UART connector

One 25-pin ECP/EPP Parallel Port

One PS/2 Keyboard

One PS/2 Mouse

One internal WOM connector

One internal WOL connector

BIOS

Award BIOS

4Mb Flash ROM

Dual BIOS code : one of code is read only. System can boot
from this area if user flash BIOS fail.

Watchdog

Flash write Protection for BIOS

Write Protection for memory SPD EEPROMs

Supports ACPI S1, S3 and S4

BIOS feature set

BIOS setup features

Auto configuration for IDE hard disk type

Multiple boot options

Power Supply

ATX12V

System Management

Winbond hardware monitor and Analog Device fan controller for Monitoring/Alerting

One 3-pin CPU Cooling Fan header

One 3-pin North Bridge Cooling Fan header

Two 3-pin Chassis Cooling Fan headers

One CPU temperature sensor

Seven Voltage monitoring (Vcore, +1.5V, +2.5V, +3.3V, +5V, +12V, Battery, 5VSTB)

Form Factor

ATX

Stacked PS/2 Mouse/Keyboard ports

Stacked 3 USB2.0 ports

Stacked one Serial, three Audio and one Parallel port

Audio Line-in, Line-out and Microphone (2 line out)

Other

Support AC power failure

Spec

ACPI 1.1

PC2001

PCI 2.2

APM 1.2

SMBIOS 2.3

BIOS boot Spec. 1.01

WfM 2.0

DMI 2.0

4 Layer

Certification WHQL

Windows 2000

Approval

FCC class B

CE mark 89/336/ECC(EMV) and acc. To EU

Connector Pinouts

CPU Fan Header: J1

Pin No.	Assignment
1	Ground
2	+12V
3	Sense

System Fan Header: J14

Pin No.	Assignment
1	Ground
2	+12V
3	Sense

WOL : J26

Pin No.	Assignment
1	5V SB
2	Ground
3	Wake up

WOM : J27

Pin No.	Assignment
1	5V SB
2	Ground
3	Wake up

Front USB Headers: JP4

Pin	Assignment	Pin	Assignment
1	+5V(fused)	2	+5V(fused)
3	USB Data (-)	4	USB Data (-)
5	USB Data (+)	6	USB Data (+)
7	Ground	8	Ground
9	KEY	10	NA

CD-ROM Audio-In Header: J12

Pin No.	Assignment
1	Left Channel Input
2	Ground
3	Ground
4	Right Channel Input

Front Audio Header: JP2

Pin No.	Assignment	Pin No.	Assignment
1	Mic In	2	Ground
3	Mic Power	4	Audio Power
5	RT Line Out	6	RT Line Out
7	Reserved	8	Key
9	LFT Line Out	10	LFT Line Out

Auxiliary Audio Header: J13

Pin No.	Assignment
1	Left channel AUX_IN
2	Ground
3	Ground
4	Right channel AUX_IN

IR & CIR Header : JP5

Pin No.	Assignment	Pin No.	Assignment
1	+5V	6	KEY
2	Key	7	CIRRX
3	IR_RX	8	+5VSB
4	GND	9	Reserved
5	IR_TX	10	Reserved

