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LIMIT THE EXCLUSION OF THE IMPLIED WARRANTIES.

Post Port Frequently Asked Questions

Below is a list of some basic POST Codes, possible problems and solutions. For
more detailed information about POST Codes, refer to Appendix C in this manual.

POST CODE	Problem	Solution
FFh or CFh	1.BIOS chip inserted incorrectly 2. Incorrect BIOS update version 3. Mainboard problem 4. Add-on card inserted incorrectly.	1. Reinsert the BIOS chip 2. Download the correct BIOS version update from the manufacturer's Web site. 3. Replace mainboard 4. Remove and replace the add-on card
C1h - C5h	1. Memory module inserted incorrectly 2. Memory compatibility problem 3. Memory module damaged	1. Reinsert memory module 2. Replace memory with correct type 3. Replace memory module
2Dh	1. Error occured in VGA BIOS 2. VGA card inserted incorrectly	1. Replace VGA card 2. Reinsert the VGA card
26h	Overclock error	Clear CMOS or press the insert key to power on the system
07h - 12h	1. ▮▮▮▮▮▮▮▮ controller error 2. RTC error	1. Ensure that the keyboard and mouse are connected correctly. 2. Replace the RTC battery.

Table of Contents

Section 1
INTRODUCTION

1-1 Package Contents
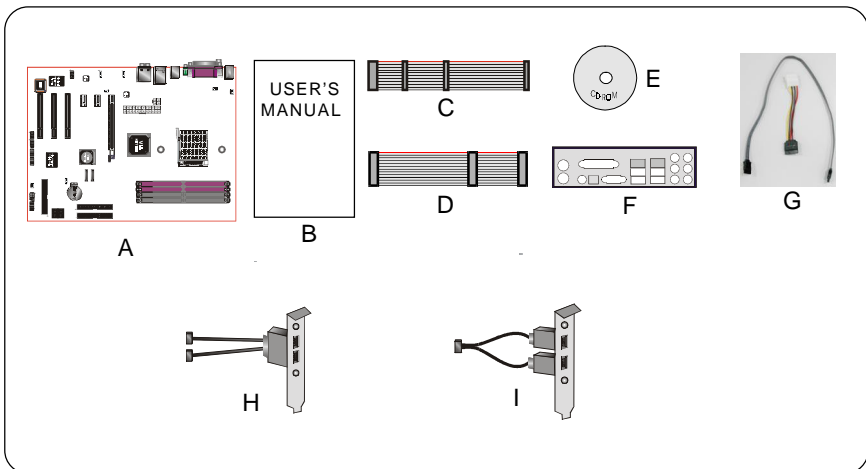
Contents

    A. Mainboard

    B. User's manual

    C. Floppy drive cable

    D. HDD drive cable

    E. CD (drivers and utilities)

    F. I/O Shield

    G .S-ATA data and power cable

Optional Items

    H. IEEE 1394 two ports cable

    I. Extra USB2.0 port cable

If you need the optional item, please contact your dealer for assistance.

1-2 Mainboard Features

Brief Introduction

★ Socket 939

Socket 939-based motherboards are designed to provide performance enhance-ments for AMD Athlon 64/ Athlon 64 FX processor-based systems, and it also expected to be the next-generation of platform innovations.

For more information about all the new features Athlon™ Processor deliver, check out the AMD website at http://www.amd.com

★ Chipset

The board is designed with VIA chipset, K8T890 as North Bridge and VT8237R as South Bridge, providing a feature rich and scalable platform.

For more information about the new features VIA Chipset, check out the AMD website at http://www.via.com

★ PCI-Express (PCI-E)

Next generation peripheral interface to succeed to current PCI bus for the next decade. With smaller slot size and 250MB/sec (PCI-E*1) or 4GB/sec(PCI-E*16) maximum transfer, PCI-Express overcomes PCI bus bottleneck.

★ DDR400

Supports dual channel of DDR400 memory to give you twice the memory bandwidth for greater system performance.

★ Hardware Monitoring

Hardware monitoring enables you to monitor various aspects of the system opera-tion and status. This includes CPU temperature, voltage and fan speed in RPMs.

★ 10/100 LAN

This mainboard is mounted with a ethernet LAN PHY. It allows the mainboard to connect to a local area network by means of a network hub.

★ Serial ATA

Support Serial ATA, an evolutionary replacement for Parallel ATA IDE storage interface. Increases the peak data transfer speed up to 150MB/sec and allows future enhancements to the computing platform.

✶ S-ATA RAID

RAID function available on chipset S-ATA ports.

✶ IEEE 1394 (Optional)

Supports IEEE 1394a (or Firewire) for easy connection to Video Camcorder and external drives. The IEEE1394a specifications defines a transfer rate of up to 400Mbps.

✶ USB2.0

A popular USB standard for plugging in peripherals with up to 480Mbps transfer speed while maintaining backward compatibility with older USB1.1 device.

✶ 8ch

Delivers 8 channel audio to bring you the latest in audio realism from DVD movies and games. Perfect for your home theatre system.

✶ AMD Cool'n'Quiet ™ Technology

AMD's Cool'n'Quiet™ Technology lowers CPU operating voltage when the system is in idle mode. This helps to reduce heat dissipation and in effect lowers the fan speed to noise from your PC. To enable Cool'n'Quiet the BIOS must support this feature.

> Special Features

BIOS Features:

& Magic Health

Reports your system hardware status for every boot-up to help detect faults early. Monitor hardware status including CPU temperature, CPU/Memory/ Chipset voltage, fan RPM speed for chassis fan, CPU fan & Power supply fan.

& EZ-Boot

Simply press "ESC" to select your bootable device. No more hassle to search the BIOS menu, change and re-start.

& PowerBIOS

Supporting a full range of overclocking setting via BIOS. Various adjustable feature include FSB/Chipset/Memory voltage tweaking.


H/W Features:

& Post Port

An onboard LED-display trouble-shooting device, facilitating user to detect boot-up problems.

& QuickSPDIF

On board SPDIF-out connector for quick connection to multi-channel speakers. Not only removes cable cluttering but also delivers loss-free digital audio to let you enjoy DVD movies and games with crystal clear sound.

1-3 System Block Diagram
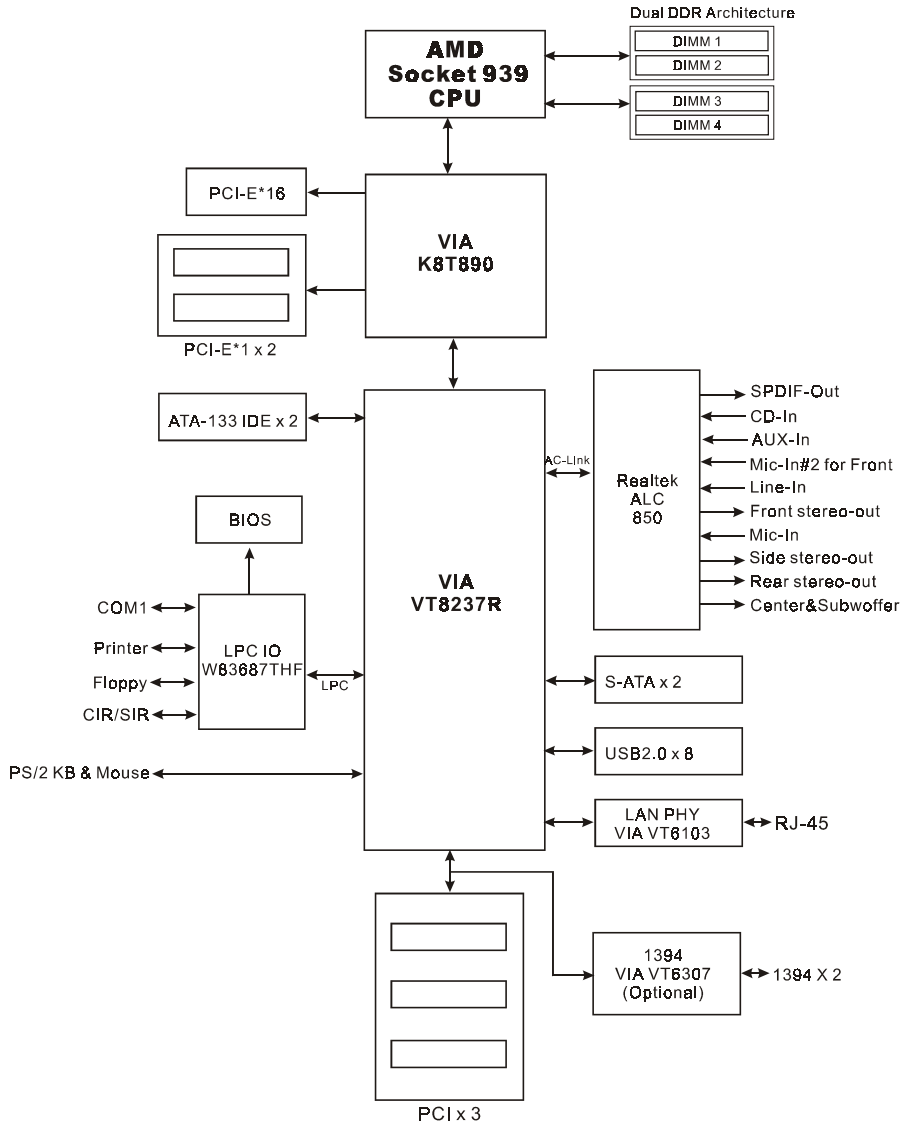
Section 2
SPECIFICATION

Mainboard Specification

- Processor
  - §Support Socket-939 based AMD Athlon-64/ Athlon-64 FX up to 4000+ with 2.0GTs Hyper Transport
  - §Support Socket-939 based AMD Athlon X2 up to 4800+ with 2.0GTs Hyper Transport (for PCB V3.x only)

- Chipset
  - §VIA K8T890 + VT8237R Chipset

- Main Memory
  - §Four 184-pin DDR SDRAM DIMM sockets
  - §Support single-sided or double-sided 2.5v DDR-266/333/400 DIMMs with dual channel architecture in 128/256/512Mb technologies
  - §Supports up to 4GB memory size

- Expansion Slots
  - ŠThree PCI connectors compliant with PCI v2.3
  - ŠTwo PCI-E x 1 connectors compliant with PCI Express 1.0a
  - ŠOne PCI-E x 16 connectors compliant with PCI Express 1.0a

- USB
  - ŠEight USB connectors compliant with USB2.0 from embedded USB controller (4 connectors at rear panel)

- P-ATA IDE
  - ŠTwo IDE interface (up to 4 IDE devices) with UDMA-33, ATA-66/100/133 support from embedded IDE controller

- 1394a (Optional)
  - ŠTwo 1394a ports with up to 400Mbps bandwidth from onboard VIA VT6307 1394a controller

● S-ATA RAID

Š Two S-ATA ports from VT8237R with up to 150MB/s bandwidth with RAID 0, 1

● LAN

Š 10/100Mbps Fast Ethernet with onboard VIA VT6103 LAN PHY

● Audio

Š Selectable 2, 6 or 8-CH audio from onboard ALC850 AC'97 v2.3 compliant CODEC

- Support CD-In, AUX-In

- Support Jack detection for fool-proof audio device installation

- Rear panel audio jacks configuration:

Audio Jack Color			
	Line-in	Line-in	Line-in
	Line-out	Front stereo-out	Front stereo-out
	Mic-in	Mic-in	Mic-in
			Side stereo-out
		Rear stereo-out	Rear stereo-out
		Center&Subwoofer	Center&Subwoofer

● I/O

Š Onboard Winbond W83687THF LPC bus I/O controller

Š Legacy peripheral interface for FDD, Parallel, Serial and IrDA (v1.0 compliant)

Š Support Hardware Monitoring for fan speed monitoring, CPU temperature

Š Intelligent fan speed control for quiet operation

● BIOS

Š Flash EEPROM with Award Plug&Play BIOS

Š Support ACPI S3 (Suspend To RAM) mode in ACPI compliant O/S

Š Support EZ Boot for fast bootable device selection

Š Support Magic Health for system hardware status report during system boot-up

● Peripheral Interfaces

　❱ At Rear Panel

　　š PS/2 keyboard and mouse ports

　　š One Parallel (printer) port

　　š One S/PDIF-Out Coaxial jack

　　š One S/PDIF-Out Optical (optional)

　　š One Serial port

　　š One RJ45 LAN connector

　　š Four USB2.0 ports

　　š Six Audio jacks

　❱ Onboard connector and pin-header

　　š One floppy drive connector

　　š Two ATA-100/133 IDE connector

　　š Four extra USB2.0 ports

　　š One CD-IN and AUX-IN connector

　　š One IR connector

　　š Two 1394a connectors (optional)

　　š Two S-ATA connectors

　　š Three Fan connectors

● Front Panel Controller
　šSupports Reset & Soft-Off switches
　šSupports HDD & Power LEDs
　šSupports PC speaker
　šSupports Front Panel Audio connector

● Special Features
　šSupport KBPO function – Keyboard power on, turn on the computer from keyboard
　šSupport Wake-On-LAN by PME
　šSupport USB resume in S3

Š Onboard Post Port LED display for system debugging

Š PowerBIOS for excellent overclocking capabilities through

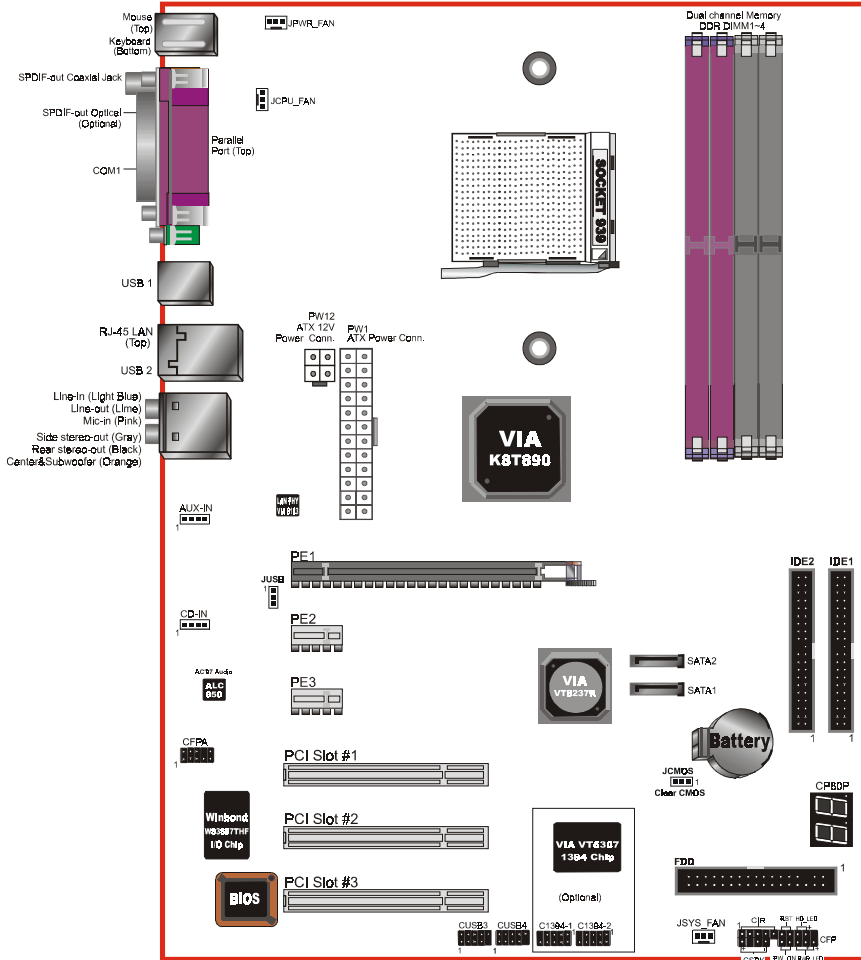 - Programmable FSB Clock output frequency with 1MHz fine tuning

  - Support BIOS adjustable CPU multiplier & Core voltage, FSB clock, Chipset voltage, DIMM frequency and voltage settings

● Form Factor

  Š 305mm x 245 mm ATX size

Section 3
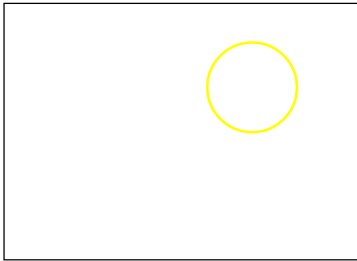# INSTALLATION

Mainboard Layout

Note: Depending on the model you purchased, some components are optional and may not be available.

Easy Installation Procedure

The following must be completed before powering on your new system:

   3-1.   CPU Installation

   3-2.   Jumper Settings

   3-3.   System Memory
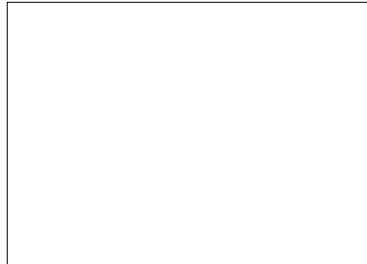
   3-4.   Expansion Slots

   3-5.   Device Connectors

3-1 CPU Installation

<Figure 1>

<Figure 2>

Step 1

Open the socket by raising the actuation lever.

Step 2

Align pin 1 on the CPU with pin 1 on the CPU socket and gently insert the CPU. The CPU is keyed to prevent incorrect insertion. Do not force the processor into the socket. If it does not go in easily, check for mis-orientation and reinsert the CPU.
Make sure the processor is fully inserted into the socket.

Note:
Thermal compound and qualified heatsink recommended by AMD are a must to avoid CPU overheat damage
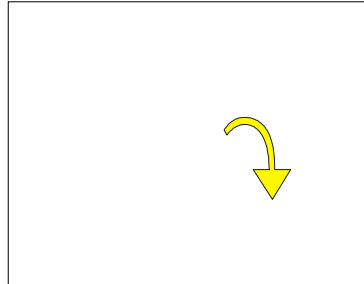
<Figure 3>
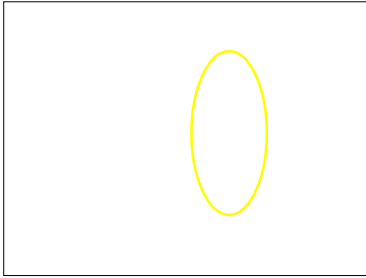
Step 3

Close the socket by lowering and locking the actuation lever.
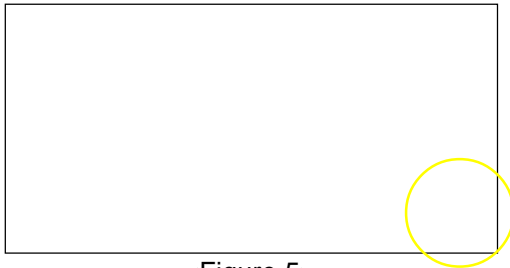Apply thermal compound to the top of the CPU.

<Figure 4>

Step 4

Insert the heatsink as shown above. Press the clips in the direction of the arrows shown in Figure 4 to secure the assembly to the CPU socket.

<Figure 5>

Step 5

Plug the CPU fan power into the mainboard's CPU fan connector.

The installation is complete.

User's Manual

VIA *K8T890* mainboard for AMD Socket 939 based Athlon 64 processor

Manual Revision 1.0
June 30, 2005

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